CESifo WORKING PAPERS

9228
2021

August 2021

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CESifo

Impressum:

CESifo Working Papers
ISSN 2364-1428 (electronic version)
Publisher and distributor: Munich Society for the Promotion of Economic Research - CESifo GmbH
The international platform of Ludwigs-Maximilians University's Center for Economic Studies and the ifo Institute
Poschingerstr. 5, 81679 Munich, Germany
Telephone +49 (0)89 2180-2740, Telefax +49 (0)89 2180-17845, email office@cesifo.de
Editor: Clemens Fuest
https://www.cesifo.org/en/wp
An electronic version of the paper may be downloaded
· from the SSRN website: www.SSRN.com
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CESifo *Working Paper No. 9228*

Pork, Infrastructure and Growth: Evidence from the Italian Railway Expansion

Abstract

This paper studies the role played by politics in shaping the Italian railway network, and its impact on long-run growth patterns. Examining a large state-planned railway expansion that took place during the second half of the 19th century in a recently unified country, we first study how both national and local political processes shaped the planned railway construction. Exploiting close elections, we show that a state-funded railway line is more likely to be planned for construction where the local representative is aligned with the government. Furthermore, the actual path followed by the railways was shaped by local pork-barreling, with towns supporting winning candidates more likely to see a railway crossing their territory. Finally, we explore the long-run effects of the network expansion on economic development. Employing population and economic censuses for the entire 20th century, we show that politics at a critical juncture played a key role in explaining the long-run evolution of local economies.

JEL-Codes: N010, N730, D720.

Keywords: infrastructural development, political economy.

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August 3, 2021
We thank Carlo Ciccarelli, Francesco Drago, Peter Egger, Giovanni Federico, Stefano Fenoaltea, David Nagy, Johanna Rickne, Valeria Rueda, Jim Snyder, Guido Tabellini and seminar participants at the CES-Ifo Conference on the Global Economy, Royal Economic Society Annual Conference, ETH Zurich, IFW Kiel, University of Modena and Reggio Emilia and the University of Padua for useful feedback, and Edoardo Cefalá and Malena Arcidiacono for excellent research assistance. Roberto Bonfatti gratefully acknowledges financial support from the University of Padua, under the 2019 STARS Consolidator Grants program.

1. Introduction

There is a widespread belief that a well-designed transport network is at the heart of a flourishing economy, and indeed transport infrastructure takes up a large share of public investments around the world. Motivated by these facts, a large literature has attempted to evaluate the impact of transport infrastructure. One typical approach has been to exploit some source of quasi-experimental variation in its placement, allowing the researcher to identify its impact on various economic outcomes. This literature has typically found that (a) infrastructure has large positive effects on economic activities; (b) the actual process of allocating infrastructure is not random, suggesting that political factors could play an important role in the choice of its location (for an overview, see Redding and Turner 2015). Yet, work on whether and how politics shapes infra-structural development remains scant. Importantly, since investment in infrastructure has been shown to have both short- and long-run economic consequences, then if political factors affect investment decisions, short-run political circumstances may shape long-term local development in a significant way. In this paper, we make progress on these important questions by analysing the political determinants of the major railway expansion that occurred in Italy between 1879–1890, and its long-term effects on economic growth.

This is an ideal setting for a number of reasons. First, the network expansion set out by the so-called "Baccarini Law" of 1879 sparkled the second Italian railroad "boom" (Fenoaltea 1983), almost doubling the size of the country's network in a short period of time.[1] Second, historians have long argued that in the allocation of these lines electoral considerations played an important role (e.g. see Tajani 1944 and Schram 1997). Finally, weak party structures in this period implied that personal politics played a crucial role (Larcinese 2021), providing strong incentives for individual representatives to bring distributive goods to their constituencies.

A large literature points out that those in a position of power are able to bring the "bacon" home (see Larcinese et al. 2013 for an overview). Thus, one key implication of models of pork-barrel politics is that constituencies represented by elected officials in government are more likely to be recipients of distributive goods, such as transport infrastructure. Moreover, if elected government officials reward their partizan supporters, then areas that voted more for government candidates are more likely to attract investment spending. Importantly, if the latter affects economic growth, then short run pork-barrel politics may have persistent effects. In this paper, we bring these predictions to the data to shed light on whether (a) support

[1] The program had very significant implications for the finances of the new state. Its total cost for the government was initially estimated at around 1.26 billion Lire, or 12.3% of 1879 GDP, but eventually came to almost twice that amount (Schram 1997, page 111; Ferrucci 1898; Istat 1957).

for pro-government candidates affects the location of railway infrastructure and (b) political factors prevailing right after the Italian unification, by shaping infrastructural development, had long-term effects on economic growth.

In the first part of the paper, following the standard approach in the distributive politics literature,[2] we study how support for pro-government candidates affects the location of railway infrastructure. We build on a unique dataset combining national election outcomes at the municipality level and geo-coded historical railway paths. To identify the causal effect of alignment, we use a regression discontinuity design focusing on close elections, i.e. on districts in which a pro-government candidate won or lost by a narrow margin.

The railway construction plans on which we focus were laid out in the 1879 Baccarini Law. The legislation determined the lines to be built by including a list of city-pairs that would have to be connected, but it did not specify the exact route that each line would have to follow. We thus proceed in two steps. In the first step, we focus on district-level electoral outcomes to determine whether municipalities belonging to districts that narrowly elected a pro-government candidate in 1876 (the election shaping the composition of parliament when the Baccarini Law was approved) were in closer geographic proximity to a Baccarini Law line, compared to those narrowly won by a pro-opposition candidate. In the second step, we focus instead on the actual construction of the railways over the subsequent three legislatures (1880-82, 82-86, 86-90), and on the exact route that was chosen for them. For this analysis, we exploit detailed information on voting in approximately 7,000 municipalities. We attain identification by restricting the sample to municipalities included in marginal districts, and in close proximity to the Baccarini Law railways. Within this restricted sample, we ask whether municipalities were more likely to receive a railway depending on the extent to which they voted for the district's winning candidate, and whether or not the latter belonged to the government coalition.

Our results show that pork-barrel politics played an important role both in terms of which lines were included in the state-planned railway expansion and in determining the path followed by the railways that were built. In particular, regression discontinuity estimates comparing municipalities belonging to electoral districts where the government marginally lost to ones where the government marginally won reveal that Baccarini Law lines are significantly closer to municipalities in districts carried by the government. Results are robust to the inclusion of a rich set of municipality-level controls, fixed effects and to varying RD specifications. Furthermore, studying the actual construction of the planned railways through the subsequent period reveals that a municipality's alignment with national politicians played a very important role: first, municipalities strongly supporting members of parliament elected

[2] For a seminal contribution, see Levitt and Snyder (1995).

in their district are significantly more likely to see a railway crossing their territory; second, such support is particularly relevant if the elected candidate was affiliated with the government party.

In the second part of the paper, building on a rich literature studying the contribution of railways, or more in general transport infrastructure, to economic development, we study the long-run consequences of the railway expansion promoted by the Baccarini Law. In particular, we ask whether the impact of politics on the shape of the railway expansion studied in the first part of the paper had long-lasting consequences on subsequent growth. To address this question, we digitize detailed municipality-level population and industry data up to 1991. We deploy a variety of strategies to attain identification. First, we use a rich set of pre-determined municipality characteristics and demanding fixed effects specifications. Second, to further improve our comparison of municipalities with similar characteristics and subject to similar conditions, we focus our analysis on the sample of municipalities that are in close proximity to the railway lines. Third, we exploit the political conditions that affected construction of the railways, by further restricting our sample to municipalities belonging to electoral districts with close races when the construction was contracted out. Fourth, building on the first part of our analysis, we exploit closeness to instrument for historical railway access.

Our results show that municipalities that gained railway access thanks to the Baccarini Law expansion experienced significantly higher population growth in the century following their construction. This effect was small at the beginning, but it accelerated in the post-WWII period. A comparison of OLS and IV coefficients reveals that the latter are always smaller than the former, suggesting that the railways were allocated to disadvantaged towns (that would have grown less even in the absence of the railways, and that stood to benefit less from the railways). We also show that population growth was not driven by an increase in employment in the manufacturing sector, but rather by an expansion in the service industries.[3] This finding suggest that municipalities reached by the Baccarini Law railways became important hubs providing services to the surrounding areas. Taken together our results represent a remarkable example of how even minor political events occurring at a "critical juncture" (Acemoglu and Robinson 2012) may have a big effect on long-run development.

This paper is related to two strands of research. First, it speaks to the literature on distributive politics and in particular to the comparatively small body of work that has analysed the allocation of transport infrastructure.[4] In an early contribution, Knight (2005) shows that politicians enjoying positions of power - i.e. members of the US House Committee

[3] Margo and Haines (2008) find similar results for the American Midwest in the 19th century.
[4] For a recent survey, see Golden and Min (2013).

on Transportation and Infrastructure – are able to secure more infrastructure funding for their districts in the 1991-1998 period. Similar patterns were uncovered by Curto–Grau et al. (2012) for road expenditure across Spanish provinces in the late 19th– early 20th century. Burgess et al. (2015) study instead the role played by ethnic favoritism on the allocation of roads in Kenya after independence, finding that districts sharing the same ethnicity as the president receive twice as much expenditure on roads and have five times the length of paved roads built. Interestingly, this effect disappears during periods of democracy. Finally, Bogart (2018) studies how the adoption of river navigation acts by English towns in the late 17th– early 18th century was affected by political connections. Most of these studies use panel fixed effect models, whereas we deploy a regression discontinuity design, providing additional benefits in terms of identification. In addition, relative to this earlier literature, our paper also explores the long-run implications of pork barrel politics.

Our paper is also related to the recent literature on the impact of infrastructure on growth. In particular, in an early contribution, Atack et al. (2010) show that railway access had a large positive impact on urbanization in the American Midwest in the 1850-1860. Hornung (2015) and Büchel and Kyburz (2020) document a positive effect of railway access on city population growth rates in 19th century Prussia and Switzerland respectively. Taking a longer time perspective, Berger and Enflo (2017) document a similar effect in Sweden over a 150 years period. Most of these papers deploy an IV methodology based on the inconsequential units approach (Banerjee et al. 2020) – using straight line or least cost paths corridors between two main nodes – typically uncovering a downward bias in the OLS estimates. As Hornung (2015) points out, the bias might be due to an omitted variable, as "... cities with lower growth prospects might have *influenced* routing in order to become connected"(page 714). In our paper, using quasi–random variation in assignment to treatment due to political factors, besides showing that secondary railroads in Italy were indeed allocated to disadvantaged towns, we provide evidence on the political channel through which towns gained influence in shaping the railroad paths.[5]

The paper is organized as follows. Section 2 provides a historical overview of railway expansion and elections in Italy in this period. Section 3 describes the data. Section 4 discusses the results linking electoral outcomes and railway development. Section 5 discusses the results analysing the long-run consequences of railway access on economic development. Finally, Section 6 concludes.

[5]While these papers estimate the relative impact of the access to the railroad, other studies have considered general equilibrium approaches. See for example Donaldson and Hornbeck (2016) and Donaldson (2018).

2. Historical Background

In this section, we provide background information on the development of railroads in Italy in this period, and on the evolution of the Italian electoral system.

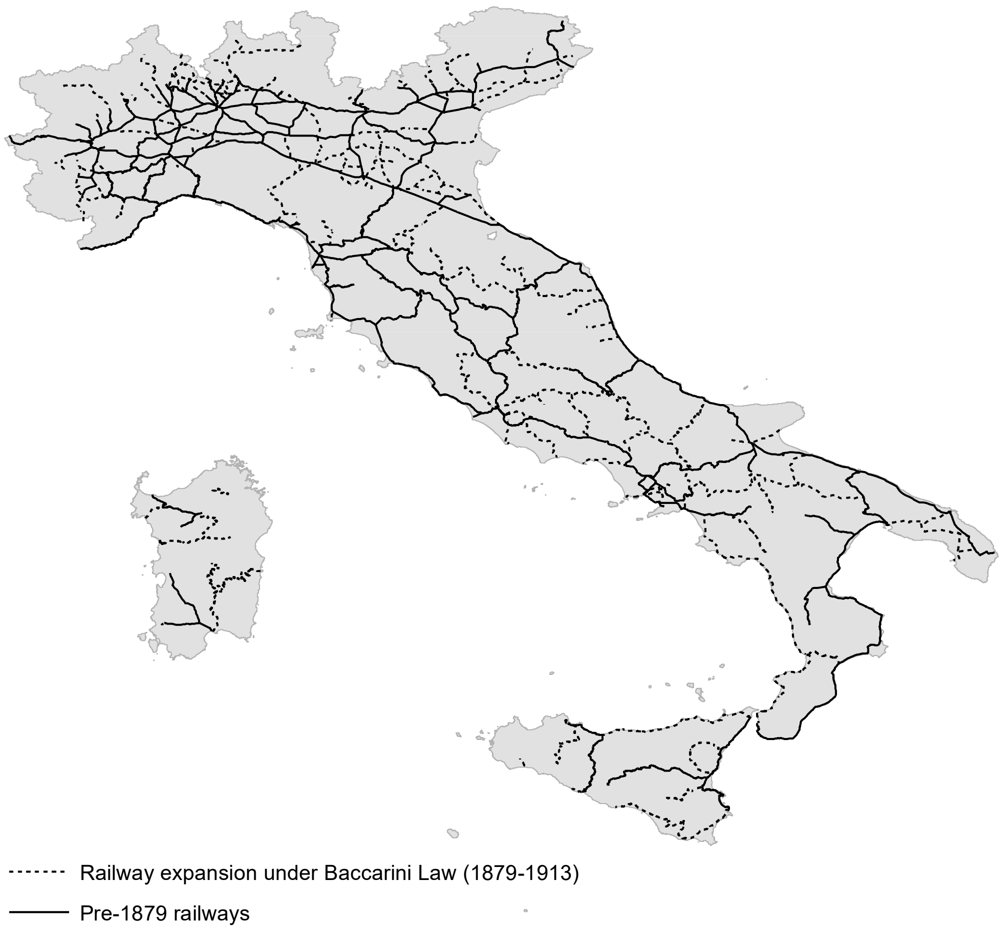
2.1. Railway constructions in Italy, 1876-1913

In this paper, we focus on the railway expansion overseen by the governments of the "Historical Left" (1876-1896), which dealt mainly with the realization of the secondary lines required to connect smaller towns and cities to the main lines built by the "Historical Right" in the previous decade. Demand for these type of infrastructure had been strong since the 1860s, as the unconnected towns and cities complained that the main lines drew economic activity away from them (Maggi 2003, p. 63). However, construction only began with the advent of the Left and responded to this political group's need to consolidate its power base (see e.g. Tajani 1944 and Mercurio 1994). The key legislative milestone was the so-called "Baccarini Law" of 1879 which set out the plan of railway expansion for the next two decades.[6] This was a controversial initiative – the transcripts of the parliamentary debates around this act exceed 1,500 pages – and over 600 amendments were proposed and defended in many speeches, one of them lasting two days. Crucially, as Schram (1997) points out (p. 111) "Clearly,... the members of parliament could not resist the temptation to advance their electoral interests by promoting the construction of a railway line in their own constituency." Based on this plan, 6,794 km of new lines were added between 1879 and 1913, of which 96% were contracted out for construction before 1890 (Table 1), and 89% were completed before 1896, when the Left was ousted from power (Appendix Table A.1).

The construction of the Baccarini Law railways was a major financial undertaking by the national and local governments. The law set aside a large sum to be spent by the national government on the new railways (1,260 million Lire, or 12.3% of 1879 GDP; see Istat 1957), and the actual cost of the network realization turned out to be significantly larger (Ferrucci 1898; Tajani 1944). At the same time, the law dictated that part of the costs of construction should be shouldered by the interested provinces and municipalities, as further explained below. The constructions were initially slowed down by financial troubles, for two main reasons. On the one hand, many provinces and municipalities proved unable to contribute to the costs of construction. On the other hand, the cost estimates on which the initial funding assignments relied proved too low, based as they were on very rough technical studies. In many cases, actual construction costs turned out to be more than twice as high as initially

[6] We exclude from our sample a few lines which were built in this period, despite being approved by earlier laws.

FIGURE 1. RAILWAYS EXPANSION IN ITALY, PRE- AND POST-1879



Notes: Extent of the Italian railway network before 1879 and lines constructed between 1879 and 1913 under the Baccarini Law. Authors' elaborations based on the data by Ciccarelli and Groote (2017).

expected (Tajani 1944, pp. 94-95). As a result, only 1,491 km of new lines were completed by 1886, or about 22% of the total (see Appendix Table A.1). To speed up the constructions, the government passed new laws in 1885-1888, setting aside additional funding and increasing the role of the private sector.[7] This led to an acceleration in the constructions between 1886-1890. However by the early 1890s, the Italian State was in serious financial troubles, to the point that it could not afford to run the 1891 census. Many blamed the railways for this situation (Ferrucci 1898, p. 7).

In this paper, we study whether the railway constructions of this period were shaped

[7]The State outsourced 1,000 km of railway constructions (amongst which some of those in our sample) to the three private companies which operated the Italian railways from 1885 onwards.

by electoral competition. As already hinted above, it has long been argued that they were. To understand the political context, it is important to note that Italy did not have a well-structured party organization in the late 1870s. Rather, the political scene was dominated by two loose coalitions of factions, the *Historical Right* and the *Historical Left*. Representatives had very little loyalty to a particular group, and *Trasformismo* – defined by Collier (1999) as a "...system of political clientelism based on the formation of ad hoc parliamentary groups that monopolized political office by using patronage and fraudulent elections to ensure electoral success" – was rampant. As a result, individual members of parliament, free from party discipline, were particularly forceful in advancing the interests of their constituencies. Not surprisingly, given the vast amount of public funding involved in the railway investment program, the latter came to the forefront of Italian politics in the late 1870s and 1880s. As reported by the Corriere della Sera (the main national newspaper), "... the House of Representatives has turned into a large railway electoral academy."[8] Members of parliament often centered their campaigns on the promise to bring railways to their constituency (Maggi 2003, p. 67), and contemporary commentators accused the ruling majority of using the railways to help the political and economic fortunes of its own people (Tajani 1944, p. 94-95).[9]

To investigate this empirically, we exploit a peculiar feature of the Baccarini Law. The law grouped the railways into five categories, in decreasing order of national importance and financial contribution by the State.[10] There was an important distinction between category 1-3 lines, on the one hand, and category 4-5 lines on the other. In the former case, the Baccarini Law determined exactly which lines should be built, by providing lists of city pairs that should serve as start and end points. The law, however, did not describe the exact route to be followed.[11] There were 4,490 km of category 1-3 lines. As for category 4-5 lines, the law merely authorized the government to construct up to 2,530 km of category 4 lines, and to allow the construction of an unspecified amount of category 5 lines.[12] Appendix Figure

[8]"La Camera si é trasformata in una grande accademia ferroviaria elettorale" in Tutti Gabbati, May 25-26 1879.

[9]Perhaps not surprisingly, Fenoaltea (1983) finds that many of the lines built in this period generated little operating revenues. According to Fenoaltea, the Left's lines did decrease transport costs more than main, North-South lines constructed by the Right: while facilitating defence, the latter were largely unable to compete with sea transport.

[10]The construction of category 1 lines was entirely financed by the State, while category 2-4 lines only attracted a 90%-60% state contribution (the rest being shouldered by the affected provinces and municipalities). Category 5 lines, to which here we add 581 km of Sardinian lines approved by a 1885 law, were entirely financed by the relevant provinces or municipalities, or by private companies. Profits from operating category 2-4 lines would be shared between the State and the other investors according to their initial contributions, while profits from category 5 lines would be entirely appropriated by non-State investors.

[11]For example, the law would say that a category 1 line connecting the cities of Faenza and Pontassieve should be built, a category 2 line connecting the cities of Bassano and Primolano, and so on. The lists remained essentially unaltered in the following two decades.

[12]The limit for category 4 lines includes an additional 1,000 km that were added by a 1885 law. Maggi

A.3 draws the two groups of railways in two separate maps.[13]

This feature of the law naturally suggests a two-step empirical approach. There are two distinct stages at which politics may have affected the allocation of category 1-3 lines, the ones on which we focus in this paper. The first stage was the shaping of the Baccarini Law itself. As explained above, the Law provided lists of city pairs that should serve as start and end point of a new line. The politics of the 1876-1879 period may have shaped decisions on which city pairs to include in these lists. We study whether this was the case, by analysing whether electoral districts that were aligned with the government in the 1876 election were more likely to be crossed by a least cost path connecting some of the city pairs listed in the Baccarini Law (full details on identification and the construction of the least cost paths are provided in later sections).

The second stage in which politics may have mattered was the construction stage. The Baccarini Law did not specify the exact route to be followed by the new lines, or the order of construction. Thus, before a line connecting cities A and D could be built, a feasibility study would have to identify the technical challenges to be overcome, and the exact route to be followed between A and D (e.g. passing through city B as opposed to city C); the State bureaucracy would have to approve this study; and finally, the government would have to contract out the construction of the line. The latter stage was typically done by trunks: in the example above, the A-B trunk could be contracted out at a different date than the B-D trunk. Presumably, this procedure left some leeway for the post-1879 governments to influence the exact routes that would emerge from the feasibility studies produced under their remit. Thus, for each trunk contracted out after 1879, our hypothesis is that political factors at play in the legislature in which the trunk was contracted out may have shaped both the decision to contract it out, and its exact location.

We test for this hypothesis by using variation at the municipality level. In particular, we ask whether municipalities located in a corridor around a least cost path connecting some of the Baccarini Law city pairs were more likely to receive a railway during a post-1879 legislature, if they had aligned with the government at the start of that legislature. By "receiving a railway", we mean that the construction of a trunk cutting through the municipality's territory was contracted out during the legislature under consideration. Table 1 reports the cumulative km of lines contracted out during each post-1879 legislature. The focus

(2003), p. 65, argues that demand for category 4 lines largely exceeded supply. According to this author, this category was introduced in order to give members of parliament, whose district would not be connected by category-1-3 lines, the hope (but no firm commitment) that they could still be connected by a category 4 line. The government's assumption was that, without such a provision, the law would never have passed.

[13]All category 1-3 lines would be built "by the State" (though the actual constructions was contracted out to private companies), while the construction of category 4-5 lines could be outsourced to the relevant provinces or municipalities, or to the private sector.

Table 1. Km. of railways contracted out and completed, as compared to predicted by Baccarini Law (1879)

	$1^{st} - 3^{rd}$ category	4^{th} category	5^{th} category	Total
Km. contracted out during legislature:				
1876 - 1880	275	0	0	275
1880 - 1882	1,041	531	94	1,666
1882 - 1886	1,166	538	180	1,885
1886 - 1890	1,604	207	882	2,693
Total (1876-1890)	4,086	1,276	1156	6,519
Total km. completed (1876-1913):	4,360	1,276	1,156	6,794
Total km. predicted by Baccarini Law:	4,490	2,530	-	6,620

Notes: The 2530 km of predicted category-4 lines include the 1000 km added to this category by the Legge 27 aprile 1885 n. 3048. Authors' elaborations based on the data by Ciccarelli and Groote (2017).

of our analysis will be on the three legislature spanning the period between 1880 and 1890. We disregard the 1876-80 legislature since very few lines were contracted out in this period. We also disregard the post-1890 legislatures, for two reasons. First, the near-bankruptcy of the Italian State meant that the official publications on which we rely become much more patchy after 1890, calling into question the reliability of the data. Second, as already mentioned, 96% of the Baccarini Law lines were contracted out for construction before 1890.

In summary, we will be studying how election results in the 1876, 1880, 1882 and 1886 elections determined, first, the choice made in 1879 on which city pairs to connect, and second, the choices on the exact routes that these railways should follows, which we assume were made shortly before the lines were contracted out for construction in 1880-1890. To better understand the politics of this period, we now turn to reviewing the existing electoral rules.

2.2. Electoral systems

The Italian Constitution during the Kingdom of Italy envisioned a bicameral system, with a House or Representatives elected by the population and a Senate whose members were appointed for life by the King. The two chambers had similar powers, and legislation had to clear both in order to be enacted by the King. Our focus will be on the House of Representatives, whose electoral system evolved quite significantly across the four elections we consider (1876, 1880, 1882 and 1886), in terms of both electoral rules and the extent of the franchise. In the 1876 and 1880 elections, representatives were chosen according to a standard majoritarian rule, with single-member electoral districts and runoff voting. There were 508 districts and in each of them the candidate who obtained the most votes was elected, as long as he had been supported by at least one third of the eligible voters, and one half of the votes cast (excluding invalid votes). If no candidate satisfied these requirements, then the two candidates with the most votes proceeded to a second round, in which the winner was selected by simple majority. Second rounds were frequent under this electoral rule: they occurred, on average, in 30% of the electoral districts in the 1876 and 1880 elections.

In 1882, a major reform introduced a majoritarian rule with *multi*-member districts and runoff voting. Districts became fewer and larger: there were 135 of them, electing a number of representatives varying between 2 and 5.[14] In each n-seat electoral district, voters could cast n preferences (at most one per each candidate), with the exception of 5-seat districts where voters could only cast 4 preferences.[15] The n candidates with the most votes were elected, provided they had obtained at least as many votes as one eighth of the eligible voters. Where some seats had remained unfilled, the unelected candidates with the most votes (in a number equal to twice the number of seats to be filled) proceeded to a second and final round. There were very few second rounds under this rule: they occurred in only 2% of the electoral districts in the 1882 and 1886 elections.

The extent of the franchise was very low throughout the period, but increased significantly with the reform of 1882. Both before and after the reform, only males could vote. Before the reform, the franchise was strictly based on income: only individuals older than 25 years and declaring an annual income of at least 40 Lire were allowed to vote (with a few exceptions made for high-skills professions). As a result, only about 2% of the population was allowed to vote in 1876 and 1880. The 1882 reform reduced the age requirement to 21 years and the income requirement to 19.8 Lire, and abolished the income requirement for individuals holding the mandatory elementary school degree (2 years of schooling), as well as for an extended number of high-skills professions. As a result, the franchise rose to more than 7% of the population (see Appendix Table A.2).

[14]The law specified the number of seats to be attributed to each province. Such number was proportional to the province's population, and was to be updated in the first parliamentary session after the publication of each population census. The law went on to subdivide provinces into electoral districts, in a number varying between 1 and 5.

[15]The rationale for 5-seat districts was to make it easier for important minority group to elect at least one representative (see the discussion in Brunialti 1882, pp. 250 onwards).

3. Data

We assembled a novel dataset covering approximately 7,000 Italian municipalities, including data on railway development, electoral outcomes and a wealth of socio-economic characteristics observed at various points in time between 1863 and 1991. One issue that we face is that municipalities did not remain identically defined over this period. For example, some of them merged to form larger municipalities, others split to form smaller ones, some acquired territory from others, and there were denomination changes and transfer of municipalities across larger administrative units (e.g. provinces, regions).

To address this issue, we used information from *Sistema Informativo Storico delle Amministrazioni Territoriali* (SISTAT) to adjust the territories of the municipalities to be at constant 1991 borders.[16] SISTAT is a database maintained by the Italian National Institute of Statistics (ISTAT) reporting any territorial or administrative changes that municipalities have gone through since 1861. Its data allows us to keep track of denomination changes, and any territorial changes involving municipalities as a whole. The most frequent case is mergers, e.g. municipalities A and B merging to form municipality C at time $t < 1991$. In this case, when collecting historical data for time $t_1 < t$, we separately collected data for A and B, and then aggregated up so that only C appears in our dataset at time t_1. In a much smaller number of instances, municipalities split, e.g. C splitting into A and B at time $t < 1991$.[17] In this case, for any $t_1 < t$ for which we have access to data, we first collect the observation referring to C, and we then use population weights in 1991 to split this observation into A and B, so that these municipalities also exist in our dataset in $t_1 < t$. This procedure does not allow us to track territorial changes at the level below the municipality. For example, if municipality A incorporated 10% of the former territory of municipality B, then we can not take care of this, since our minimal unit of observation is the municipality. This kind of changes in territory were minor and infrequent, however.

3.1. Railways and Elections

Our analysis focuses on the railway expansion plan laid out by Baccarini Law of 1879. The vast majority of these railways were contracted out for construction in 1880-1890, and opened by 1895 (see Table 1 and Appendix Table A.1). Our starting point is the database by

[16]For consistency, we use constant 1991 borders also for provinces, another administrative unit considered in the analysis.

[17]Municipalities were mostly aggregated during this period, as evidenced by the fact that there were 8,400 municipalities in 1871, but only 7,700 in 1991, at constant 1871 national territory. The decades immediately after World War II were exceptional in this respect, since many mergers that had occurred during the Fascist era were reversed afterwards. For this period, we only use population data which was independently adjusted to be at constant 1991 municipal boundaries by Sistema Statistico Nazionale (1994).

Ciccarelli and Groote (2017), which is based on historical sources and maps and provides a georeferenced reconstruction of the development of the Italian railway network spanning the period 1839-1913. In this GIS dataset, the authors digitise railway segments as line features, and provide additional information such as year of opening, main/secondary line classification and a distinction between standard and narrow gauges. Since our municipalities are defined at constant 1991 boundaries, we combined this database with the 1991 shapefile of Italian municipalities, which is also the earliest provided by ISTAT.[18] This procedure allowed us to determine the list of municipalities that each new railway trunk cut through.

We begin by constructing measures of the stock of railways (if any at all) present on each municipality's territory in 1876, the date of the first election in our sample. Next, we identify the Baccarini Law lines in our GIS dataset, and proceed to determine the date in which the construction of each trunk was started. To this end, we have located detailed reports summarizing information on procurement contracts, at the trunk level, reporting the contract award date (see Ministero dei Lavori Pubblici (1885), Ministero dei Lavori Pubblici (1889) and Ministero dei Lavori Pubblici (1891)).[19] Appendix Figure A.4 presents an example of the information available in the reports we have used.

Next, we have matched the contract award date with the corresponding legislature and the elections that determined its composition. Data on parliamentary election outcomes have been obtained from Corbetta and Piretti (2009). This source provides digitised data on Italian parliamentary elections from 1861 to modern times, at the district and municipality level. Our elections of interest are 1876, 1880, 1882 and 1886.

The district-level data contains the name of the district, the number of registered voters, the number of voters who cast a ballot and the name and political affiliation of the elected candidate(s). For the 1876 and 1880 elections, in which representatives were chosen in single-member districts, we also have information on the number of votes obtained in the district by the winning candidate. For the 1882 and 1886 elections, in which a variable number of representatives (between 2 and 5) were elected in districts at large, we have information on the number of preferences obtained by each elected candidate. Since Corbetta and Piretti (2009) do not provide data on the number of votes or preferences obtained by the losing candidates in the district, we obtained this information digitising data from Nuvoloni (1898). These sources allowed us to collect the same information for run-off elections, which took place on average in 30% of the districts in the 1876 and 1880 elections, and in 2% of the districts in the 1882 and 1886 elections. Appendix Table A.2 provides summary statistics on

[18]We exclude from the analysis the North-Eastern parts of the country that were only annexed after World War I

[19]We decided not to use the completion date by Ciccarelli and Groote (2017) for this purpose, since completion could lag the start of construction by up to several years.

district-level population, franchise and turnout in the four elections in our sample.

Corbetta and Piretti (2009) also provide municipality-level electoral outcomes.[20] For the 1876 and 1880 elections, for all municipalities located in a district, they report the votes obtained by all candidates in the district. This gives us the total number of votes cast in the municipality, and hence the share of votes obtained by candidates who were elected in the district as well as those who were not. For the 1882 and 1886 elections, the municipality-level data of Corbetta and Piretti (2009) only reports the number of preferences obtained by the candidates who were elected in the district. To complement this data, we collect and digitize information on registered voters and number of voters who cast a ballot at the municipality level for the 1882 and 1886 elections from original archival sources, e.g. the *Archivio della Camera Regia*. Based on the number of voters who cast a ballot and the number of allowed preferences in the district to which the municipality belongs, we estimate the share of preferences obtained in the municipality by each elected candidate.[21]

3.2. Additional socio-economic characteristics

The existing literature has highlighted the role played by a number of additional socio–economic factors in determining whether a locality is connected by a railroad. To account for them, we assemble a rich set of municipality-level characteristics from a variety of historical sources.

We obtain population figures spanning the period 1861–1991 by digitizing data from Sistema Statistico Nazionale (1994).[22] Importantly, these data refer to municipalities boundaries as defined in 1991 and thus matches the information we have on the presence of railroads and political outcomes. We additionally employ this population data to construct a municipality-level measure of market access.[23]

We have then digitized information on other indicators of initial economic development, e.g. the presence of a post office, telegraph office, railway station or sea port in 1871 (from Ministero

[20]More precisely, the electoral outcomes for municipalities reported by Corbetta and Piretti (2009) are based on data at the level of *sezione*, an electoral division whose relation to the municipality depended on the latter's size and on the extent of the franchise. For small municipalities in the early part of our sample a "sezione" would often encompass multiple municipalities, in which case we assign to each of municipality the electoral result of the "sezione" they belong to.

[21]Specifically, we compute the share of preferences obtained by each elected candidate as the ratio between the number of preferences cast in favor of the candidate in the municipality and the number of total number of voters who cast a ballot in the municipality multiplied by the number of allowed preferences.

[22]Censuses were held every ten years except for 1891 and 1941, when they were not held, and 1936, when an additional census was held.

[23]We follow the standard approach in the literature to obtain our measure of market access, where for each municipality i we compute $MA_i = \sum_{i \neq j} P_j D_{ij}^{-1}$, with P being the population of municipality j, and D the geodesic distance between municipalities i and j. In the calculation of MA_i we employ the population of all municipalities, with the exception of municipality i's own population.

dell'Interno 1874), and the number of secondary schools and libraries of municipalities in 1863 (from Ministero dell'Educazione Nazionale 1866 and Ministero dell'Educazione Nazionale 1865). For our long-run analysis we have also collected information on a series of additional municipality-level characteristics, which have been digitized from a series of inquiries carried out in the 1880s. In particular, we obtained data on hygienic and sanitary conditions in 1885 from Direzione Generale della Statistica (1886), covering quality and quantity of water available, percentage of roads with sewage system, percentage of houses with toilets, number of doctors, number of pharmacies, number of hospital beds and number of years with registered cases of cholera. We supplement this information digitizing data on public revenues and expenditures in 1884 from Ministero di Agricoltura, Industria e Commercio (1887), including total municipal revenues as well as revenues from real estate and land taxes and expenditures on public education, to capture local investment in human capital acquisition.

We additionally collected information on a series of time-invariant geographic characteristics. Using the FAO-GAEZ database, we have constructed ten separate municipality-level indexes on suitability for growing agricultural crops.[24] To account for the role played by difficult terrains, particularly in obstructing railway passage, we used data on terrain ruggedness from Nunn and Puga (2012) to construct a municipality-level Terrain Ruggedness Index (TRI). Finally, we compute measures of land area, elevation and an indicator for municipalities situated on the sea coast.

Table 2 and Appendix Table A.3 provide summary statistics on the various municipality-level characteristics we collected.

4. Elections and Railway Constructions

In this section, we study the role of electoral competition in shaping the development of the Baccarini Law lines. We start by analysing the decision to include a line in the law, and then turn to explain the actual route followed in its construction.

4.1. Identification

The decision to build the railroads considered in our analysis can be articulated in two steps. The first involves the choice of including a railway line in the Baccarini Law of 1879. As already mentioned, the law specified the initial and end (focal) points of each line, but no additional detail was provided on the route to be followed. The second step involves instead the choice of the path of the various trunks which were subsequently built, and whose

[24] In particular, we have information on barley, bean, cereals, citrus, cotton, oat, olive, rice, rye and wheat – with suitability varying between 0 (lowest) and 1 (highest).

Table 2. Summary Statistics on Municipality-Level Characteristics

	Mean	*S.D.*	*Min*	*Max*
Pre-1879 and geographic characteristics				
Log population density in 1871	4.5751	0.8106	0.6530	9.9889
Post office in 1871	0.3551	0.4786	0	1
Telegraph office in 1871	0.1491	0.3562	0	1
Railway station in 1871	0.0922	0.2893	0	1
Sea port in 1871	0.0059	0.0765	0	1
Number of secondary schools and libraries in 1863	0.1030	0.6234	0	22
Market access	0.3757	0.1326	0	1
Wheat suitability	0.3594	0.2081	0	1
Cereals suitability	0.2943	0.2528	0	1
Rice suitability	0.0707	0.1805	0	1
Cotton suitability	0.1755	0.2162	0	1
Barley suitability	0.3634	0.2089	0	1
Rye suitability	0.3713	0.1989	0	1
Olive suitability	0.3047	0.1899	0	1
Citrus suitability	0.1751	0.2521	0	1
Oat suitability	0.3605	0.2089	0	1
Bean suitability	0.3397	0.1926	0	1
Terrain ruggedness	0.1823	0.1799	0	1
Log land area	3.0807	1.0064	-2.1295	6.3868
Elevation (m)	429	422	0	2,699
Coast	0.0806	0.2723	0	1
Additional characteristics (post-1879)				
Quantity of water	2.6924	0.5960	1	3
Quality of water	2.7811	0.7765	1	4
% of roads with sewage	0.1292	0.2693	0	1
% of houses with toilets	0.4452	0.2952	0	1
Number of farmacies (per capita)	0.0003	0.0004	0	0.0045
Number of medics (per capita)	0.0005	0.0005	0	0.0112
Number of years with colera epidemics	1.4847	1.5089	0	11
Number of hospital beds (per capita)	0.0008	0.0063	0	0.4491
Revenue tax on terrains (log per capita)	1.4675	0.5017	0	4.0726
Revenue tax on buildings (log per capita)	0.4847	0.2911	0	1.9581
Municipal surtax (log per capita)	1.4492	0.6224	0	4.1623
Total tax revenues (log per capita)	2.2397	0.4235	0.4686	5.2679
Education ordinary expenses (log per capita)	0.7649	0.2013	0	3.0933
Education extraordinary expenses (log per capita)	0.0903	0.3189	0	4.0723
Education optional expenses (log per capita)	0.1161	0.2074	0	2.4050

Notes: Authors' elaborations. Data sources described in Section 3.

construction was contracted out between 1880-1890. We are interested in understanding the role of politics in shaping both these decisions. In particular, if representatives in the ruling majority are in a better position to reward their constituency with public investments, then constituencies aligned with the government are more likely to receive railway infrastructure.

The key identification challenge in our context is that, according to models of distributive politics, electoral outcomes are endogenous with respect to the allocation of transport infrastructure.[25] We address this concern by deploying a regression discontinuity design focusing on close races, where the choice of one candidate over another can be thought of as being as good as random. In other words, our analysis uses randomized variation which derives from the candidates' inability to precisely control the assignment variable (e.g. which candidate wins the election) near the 50% cutoff (Lee and Lemieux 2010).

This assumption would be violated if candidates were able to manipulate the margin of victory, with a resulting discontinuity at the 50% vote share cutoff. We rule out the presence of sorting around the threshold by implementing a McCrary test (McCrary, 2008) (see Appendix Figure A.5) showing the absence of discontinuities around the 50% vote share threshold. Another concern could be omitted variable bias: the observed empirical correlation between alignment and railway allocation could be driven by socio-economic determinants influencing both outcomes. To verify that our RD design addresses this issue, we study whether all other relevant features aside from the treatment do not systematically differ at the 50% vote share threshold, e.g. that observations just below the threshold serve as an appropriate counterfactual for those just above it. In particular, we examine whether socio-economic and geographic characteristics are balanced across electoral districts that were marginally won or lost by government party candidates. Our results in Appendix Table A.5, indicate that there are no systematic differences in the covariates around the 50% vote share threshold.

While implementing our RD design one, an important caveat applies. As pointed out in Section 2, while in the 1876 and 1880 elections representatives were chosen in single member districts (SMD), by 1882 a new electoral law prescribed the creation of districts at large (AL), in which a variable number of representatives (between 2 and 5) were elected. In the SMD system, the definition of a close race is based on the gap between the vote shares received by the winner and the runner up, whereas in the AL system, we focus on the (normalized) gap in the vote share received by the last of the elected candidates and the first of the non-elected ones.[26]

In the first step of the process, representatives elected to the 1876-80 legislature compete for inclusion in the Baccarini Law of 1879 of a railway line cutting through their electoral districts. If alignment matters, we expect those supporting the existing government to be in

[25]For example Voigtlaender and Voth (2014) show that the construction of the German Autobahn network in the 1930's was crucial to consolidate the Nazi party's grip on power.

[26] In particular, let W_d be the vote share received by the least popular of the elected candidates, and let L_d be the vote share received by the most popular of the non–elected candidates. The normalized gap is then given by $\frac{W_d - L_d}{W_d + L_d}$.

a better position to exert influence. To assess whether this is the case, we focus on electoral outcomes at the district level and implement a sharp regression discontinuity design where we compare districts in which the government candidate marginally won to those in which he marginally lost. More formally, we estimate the following specification:

$$y_{md} = \beta_0 + \beta_1 GovWin_d + f(Margin_d) + \beta_2 X_{md} + \sigma_p + e_{md} \quad (1)$$

where m denotes the municipality and d the electoral district.

The dependent variable, y_{md}, captures the proximity of the municipality to the railways planned for construction by the Baccarini Law of 1879. We measure this in two alternative ways. First, we consider the log of the distance in km of the municipality's centroid from the nearest planned railway. Second, we define two indicator variables, taking a value of one if the municipality falls respectively within a distance of 10 km or 5 km from a planned railway. We map a planned railway as the least cost path connecting the focal points of the line as specified on the Baccarini Law, which we simulate based on the cost estimates related to distance, slope and river crossings (See Appendix Figure A.1 for an illustration of how the least cost paths are constructed).[27]

The regressor of interest is $GovWin_d$. It is an indicator taking a value of one, if the government carried the district in the 1876 election, and zero otherwise. The term $f(Margin_d)$ is the RD polynomial, which allows us to flexibly control for the impact of the distance between the share of the government party and the 50 percent threshold. Finally, σ_p is a vector of province fixed effects and X_{md} is a vector of pre–determined municipality level characteristics, including log population density, presence of post office, telegraph, port, railways or railway station on the territory, total number of secondary schools and libraries, market access, terrain ruggedness, agricultural suitability, log land area, elevation and location on the coast. Our coefficient of interest is β_1, capturing the effect of a government's party victory at the discontinuity point (i.e. the 50 percent threshold) on the relevant outcome variable.

Turning now to the actual realization of the railroads, our hypothesis is that once a line has been authorized by the Baccarini Law, different municipalities compete to shape the actual path that will be followed. We thus focus on municipalities located in close proximity to the planned railway lines (i.e. at a distance of either 10 km or 5 km from the least cost paths connecting start to end) and consider the role played by local – i.e.

[27] We experimented with alternative ways to specify the least cost paths, namely: varying the cost parameters associated with slopes and river crossings; employing "per-capita construction costs" weighting cost parameters by population; and using simple straight lines connecting the focal points of the planned railways. All these different specifications provide similar simulated corridors and comparable estimation results.

municipality level – political outcomes. We posit that municipalities, more strongly supporting candidates that end up winning the district, are in a better position to see railroad lines constructed on their territory. To identify this effect, we focus once again on close races, i.e. on districts in which the elected candidate won by a small margin. Under the assumption that municipality electoral outcomes – on average – do not systematically affect district-level ones, the assignment of municipalities to treatment is as good as random and thus we can causally estimate the effect of siding with the winner on receiving a railway project. We thus estimate the following model:

$$Rail_{mdj} = \gamma_0 + \gamma_1 WinShare_{mdj} + \gamma_2 X_{md} + \sigma_p + e_{mdj} \tag{2}$$

where $Rail_{mdj}$ is an indicator variable taking a value of one if a railroad whose construction was contracted out during legislature j crosses the territory of the municipality m in district d and zero otherwise; $WinShare_{mdj}$ is the share of votes received in the municipality by the candidate who carried the district in that legislature and σ_p and X_{md} denote once again province fixed effects and pre–determined municipality level characteristics.[28] Our coefficient of interest is γ_1 and captures the effect of greater support in the municipality for the marginal winner of the election compared to the marginal loser.

4.2. Constituency representation and Baccarini Law lines

The first step of our analysis consists in determining whether the inclusion of a railway line in the Baccarini Law of 1879 was driven by the lobbying of members of parliament on behalf of their own constituents. In particular, we focus on district-level electoral outcomes for the 1876 election, which determined the composition of the parliament that passed the aforementioned law in 1879.

Our estimates are based on equation (1), where we regress a series of municipality-level outcomes – capturing the geographic proximity to railways planned by the Baccarini Law – on an indicator for whether the government carried the district to which the municipality belongs. Through this part of the analysis, we adopt a sharp regression discontinuity design where we study our outcomes of interest at the 50% vote share threshold, comparing municipalities belonging to district where the government party marginally lost to those where the government party marginally won.[29] To account for potential correlation in the

[28] In a robustness check reported in Appendix Tables A.17 and A.18 we also deploy a richer set of controls, with the caveat that the relevant information is available only for the 1880s, i.e. after the enactment of the Baccarini Law. These additional socio-economic measures, capturing hygienic and sanitary conditions, and the amount of public revenues and expenditures, allow us to more precisely account for the municipal development level when the the railway construction plans were implemented.

[29] Marginality is defined using the election round in which the winner is selected.

estimated relationship across nearby municipalities, we employ spatially-adjusted standard errors, following the methodology of Conley (1999), based on a window of 20 km around the municipality's centroid.

Table 3 reports the results from the RD estimates. In odd-numbered columns, we employ the full sample of almost 7,000 municipalities across 458 electoral districts.[30] These estimates include a third-order RD polynomial on the distance of the government party vote share from the 50% threshold, fitted separately on each side of the threshold.[31]

Table 3. Baccarini Law's Railway Projects and 1876 District-Level Elections: Regression Discontinuity Estimates

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable:	*log(km) dist. from projects*		*10 km proximity to projects*		*5 km proximity to projects*	
RD polynomial order:	3rd	2nd	3rd	2nd	3rd	2nd
Margin:	-	± 5%	-	± 5%	-	± 5%
Government-party win in district	-0.3578***	-0.3594**	0.1977**	0.2690**	0.2206***	0.3581***
	(0.1263)	(0.1804)	(0.0797)	(0.1199)	(0.0694)	(0.0972)
Adjusted R^2	0.517	0.746	0.262	0.531	0.204	0.465
Observations	6,957	1,471	6,957	1,471	6,957	1,471
Number of electoral district	458	102	458	102	458	102
Municipality-level controls	✓	✓	✓	✓	✓	✓
Province FE	✓	✓	✓	✓	✓	✓

Notes: The table reports reports RD estimates. The unit of observation is a municipality. The dependent variable is the distance in log(km) from the railway projects in columns (1)-(2); a binary indicator for being in a 10 km proximity to the railway projects in columns (3)-(4); a binary indicator for being in a 5 km proximity to the railway projects in columns (5)-(6). The distance and proximity measures are based on least cost paths connecting the focal points indicated by the Baccarini Law. The explanatory variable indicates a government-party win in the electoral district, with 3rd-order polynomials on the margin of victory being employed in odd-numbered columns and 2nd order polynomials in even-numbered columns. In even-numbered columns, the sample is limited to electoral districts where the government-party candidate's vote share was within a 5% distance of the 50% threshold needed for election. Municipality-level controls include: log population density in 1871, presence of post office, telegraph, port, railway or railway station on the territory in 1871, total number of secondary schools and libraries in 1863, market access, terrain ruggedness, agricultural suitability, log land area, elevation and presence of a coast. All specifications employ province fixed effects. Standard errors adjusted for spatial correlation, based on a 20 km window, in parenthesis. ***, **, and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

Across all three dependent variables, the estimates present a clear discontinuity at the 50% threshold. In particular, column (1) shows a negative discontinuity in the distance of the municipality from the planned railways (represented as a least cost path connecting the destination points indicated on the Baccarini Law) in districts secured by the government party. Similarly, columns (3) and (5) show a positive discontinuity in the likelihood of a

[30]Our sample does not include 50 districts representing very large municipalities incorporating multiple electoral districts because in this case the electoral district is smaller than our unit of analysis, e.g. the municipality. Furthermore, these very large municipalities were already reached by the main railway network by 1879.

[31]While in Table 3 we only show the coefficient on the main explanatory variable for reasons of space, in Appendix Table A.4 we also report the coefficients on the control variables.

municipality being in a 10 or 5 km proximity, respectively, to the planned railways, when comparing municipalities in districts where the government party won with ones in districts where the government party lost.

While the results reported in odd-numbered columns of Table 3 are helpful in providing a general overview of the patterns in the data, the estimated effects might not be properly identified. This is because employing the whole sample of municipalities, even those in electoral districts where the winning candidate's vote share is far above the 50% threshold, might cause our estimates to capture some unobservable variation in the data, potentially biasing the results. For this reason, we repeat our analysis focusing on municipalities belonging to districts where the election was determined by a close margin. To determine the optimal bandwidth, we follow the selection procedure proposed by Calonico et al. (2014), yielding margins between 5% and 10%. While these might appear "large", it is worth noting that the restricted extent of the franchise in 1876 resulted in only 800 votes cast in the average district in that election, implying that a 5% margin involved on average a distance of only 40 votes between the candidate and the election threshold. Following the most conservative approach (e.g. 5% margin) reduces the sample size to 1,471 municipalities across 102 electoral districts. Our results are reported in the even-numbered columns of Table 3 and include municipality-level controls, province fixed effects and a second-order polynomial on the margin of victory. The district's alignment with the government has a statistically significant and economically meaningful effect across all three dependent variables, namely a lower distance of the municipality from a planned railway in columns (2) and a higher likelihood of the municipality being in a 10 or 5 km proximity to a planned railway in columns (4) and (6), respectively. The estimated effects are quite large as alignment with the winner increases the likelihood of a municipality being in close proximity to a railway planned by the Baccarini Law between 22%–36%.[32]

Our results are robust when we control for additional contemporary socio-economic characteristics, including measures on hygienic and sanitary conditions as well as public revenues and expenditures (see Appendix Table A.6). The same holds for alternative treatments of standard errors. In our baseline approach, we employ spatially-adjusted standard errors based on a window of 20 km around the municipality centroid. Since other types of correlations in observed and unobserved characteristics may potentially affect our

[32] In Appendix Figure A.6 we assess the sensitivity of our main results to alternative bandwidth choices focusing on the specifications reported in columns (2)-(4)-(6) of Table 3, using different vote share margins to restrict the sample. The plotted coefficients show a consistent estimated effect of a government-party win. Moreover, in line with the margins suggested by the optimal bandwidth selection procedure proposed by Calonico et al. (2014), we can observe a disappearing effect once the margins increase above 10%, and unstable estimates, due to the resulting greatly reduced sample size, once the margins fall below 5%.

results, in Appendix Table A.7 we deploy alternative clustering structures, showing that our results are robust to clustering by electoral district, double-clustering by electoral district and railway line and spatially-clustering based on a bigger window of 50 km around the municipality centroid.

4.3. Competition among municipalities and railroad construction

The next step in our analysis studies the implementation of the railway expansion set out by the Baccarini Law. In other words, after studying whether politics influenced the inclusion of railway lines in this piece of legislation, we turn to the analysis of pork-barrel in shaping the actual path followed by the realized railway lines.

4.3.1 Single member districts

We start with the second legislature in our timeline, which was elected in 1880 under a majoritarian system with single-member districts. In the following set of regressions, our dependent variable indicates whether a railway – contracted out for construction during the 1880 legislature – crossed the municipality's territory.

Studying the political influence on the construction path of the railway expansion pre-determined by the Baccarini Law begs the question of what level of electoral outcomes were crucial in this context. When studying the inclusion of a railway line in the planned expansion, it is natural to focus on electoral results at the district level, given that the planned railway lines could span long distances and were therefore likely to be affected by electoral results only at an aggregate level. On the other hand, when it comes to the implementation of the projects, i.e. the construction of the railways, it is not immediately obvious whether this kind of outcome can be affected by electoral results at the district level or only at local level.

In Appendix Table A.8, we study the implementation of the projects by first associating it with district-level electoral outcomes. As before, we focus on "close" districts, where the elected candidate won by a margin within 5% of the vote share. Additionally, knowing the location of the planned railways, we further restrict our analysis to the sample of municipalities that are in close proximity to the projects, i.e. that lie within 10 km (columns (1)-(2)) and 5 km (columns (3)-(4)) from them. All specifications include our set of municipality-level pre-determined and geographic controls, province fixed effects and a polynomial on the margin of victory. All reported coefficients show a statistically insignificant effect of government party win in the electoral district, implying that electoral outcomes at this level did not play a relevant role in the implementation of the railway projects.

In Table 4, we turn our attention to electoral results at the municipal level. These estimates, based on equation (2), employ the share of votes obtained in the municipality by the candidate elected in the district. In particular, we study whether *within a district* municipalities aligning with the elected candidate saw a new railway crossing their territory. Following our earlier approach, the analysis restricts the sample to municipalities in a 10 or 5 km proximity to the railway projects, represented by the least cost paths connecting the focal points of the planned railway, and focus on districts where the elected candidate won by a vote share margin below 5%. All estimates come from regressions employing the set of municipality-level pre-determined and geographic controls, together with province fixed effects. Additionally, we employ district fixed effects, allowing us to compare only municipalities belonging to the same electoral district and employ spatially-adjusted standard errors based on a window of 20 km around the municipality's centroid. The results reported in Panel A of Table 4 indicate a positive effect for the elected candidate's vote share in the municipality on the probability of the municipality obtaining a railway. In particular, our estimates imply that a standard deviation increase in the share of votes received by elected candidate in the municipality is associated with an increase in the likelihood of obtaining a railway between 3.7% and 4.7%.

These findings do not consider the political alignment of the elected candidate, concealing a potentially important source of heterogeneity in the estimates. In fact, an elected candidate's ability to reward municipalities for their support may crucially depend on his relationship with the government. To study this question, we decompose the effect of the share of votes obtained by the winner into two separate effects, distinguishing between candidates affiliated with the government and those affiliated with the opposition. The results in Panel B of Table 4 reveal a positive and significant effect of alignment with the winning candidate if he belongs to the government, while the effect is negative and insignificant when he belongs instead to the opposition.[33] Specifically, our results imply that a standard deviation increase in the share of votes given in the municipality to an elected candidate supporting the government is associated with an increase in the likelihood of the municipality obtaining a railway between 5.7% and 7.3%.[34]

[33]For the coefficients of the control variables, see Appendix Table A.9.

[34]These results also help dispel a potential endogeneity concern. It could be that municipalities whose economy was, for whatever reason, doing well, were both supportive of the government, and particularly likely to receive a railway line. If this was driving our results, however, we would expect alignment with the government to increase the likelihood of receiving the railway, independently on whether the government won in the district. In contrast, we see that alignment with government only mattered in districts in which the government actually won.

Table 4. Implementation of Baccarini Law's Railway Projects and 1880 Municipality-Level Electoral Outcomes

	(1)	(2)
Dependent variable:	*Municipality obtains rail during legislature*	
Proximity to projects:	10 km	5 km
Margin of victory:	≤ 5%	≤ 5%
	Panel A	
Winner share in municipality	0.0367***	0.0467***
	(0.0140)	(0.0174)
Adjusted R^2	0.319	0.358
	Panel B	
Winner share in municipality × Opposition-party win in district	-0.0172	-0.0416
	(0.0239)	(0.0317)
Winner share in municipality × Government-party win in district	0.0568***	0.0732***
	(0.0153)	(0.0187)
Adjusted R^2	0.325	0.368
Observations	609	420
Number of electoral district	75	61
Municipality-level controls	✓	✓
Province FE	✓	✓
District FE	✓	✓

Notes: The table reports reports OLS estimates. The unit of observation is a municipality. The dependent variable indicates the passage of a railway on the municipality territory, which construction was contracted out during the 1880 legislature. In Panel A the explanatory variable indicates the share of votes obtained in the municipality by the candidate elected in the electoral district. In Panel B the share of votes obtained in the municipality is interacted with the party of the elected candidate. Column (1) employs the sample of municipalities in a 10 km proximity to the railway projects, while column (2) employs the sample of municipalities a 5 km proximity to the railway projects. The proximity measures are based on least cost paths connecting the focal points indicated by the Baccarini Law. The sample is restricted to municipalities belonging to districts where the candidate was elected with a margin of victory below 5%. Municipality-level controls include: log population density in 1871, presence of post office, telegraph, port, railway or railway station on the territory in 1871, total number of secondary schools and libraries in 1863, market access, terrain ruggedness, agricultural suitability, log land area, elevation and presence of a coast. All specifications employ province and district fixed effects. Standard errors adjusted for spatial correlation, based on a 20 km window, in parenthesis. ***, **, and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

4.3.2 Districts at large

We continue our analysis by studying the elections of 1882 and 1886. By 1882 a new electoral system introduced districts at large, in which a number of representatives, varying between 2 and 5, were elected. This requires a change in our definition of marginal districts to the normalized gap in the vote share received by the last of the elected candidates and the first of the non elected ones.[35] For consistency and ease of comparability with our previous analysis under the single-member district system, our exercise of restricting the sample of municipalities to those in marginal districts is based on the top quintile of our normalised

[35] For more details see the discussion in footnote 26.

marginality measure, closely corresponding to the 5% victory margin employed with the single-member district electoral system.

Estimates are still based on equation (2). The dependent variable is an indicator variable capturing whether the municipality receives a railway, which is regressed on the vote share obtained in the municipality by the last of the candidates elected in the district. Controls include the set of municipality-level pre-determined and geographic controls previously deployed, together with province and electoral district fixed effects.

Table 5 reports estimation results employing electoral outcomes from the 1882 and 1886 elections. In Panel A, we initially focus on the effect of the vote share obtained in the municipality by the marginal winner. The estimated coefficient reports that a standard deviation increase in the vote share obtained by the last elected candidate is associated with an increase in the likelihood of the municipality obtaining a railway varying between 3.5% and 3.7%.

Similar to our previous set of results focusing on the 1880 elections, in Panel B we decompose the impact of the vote share obtained in the municipality by the marginal winner based on whether the elected candidate is affiliated with the government or the opposition. Despite a different electoral system and our focus on the last of the elected candidates, the results paint a picture consistent with that of the 1880 elections, with a positive and significant effect for municipalities supporting a winning candidate affiliated with the government and a statistically non-significant effect for municipalities supporting winning candidates affiliated with the opposition.[36] Specifically, estimation results in Panel B indicate that a standard deviation increase in the share of votes given in the municipality to a winning candidate affiliated with the government is associated with an increase in the likelihood of the municipality obtaining a railway between 3.2% and 3.3%, an effect comparable to that uncovered for the 1880 elections in Table 4.

4.3.3 Threats to identification and robustness

We now consider potential threats to identification and further explore the robustness of our results, focusing on the implementation of the Baccarini Law railway expansion.

One of our key identifying assumptions is that individual municipalities' electoral outcomes do not systematically affect district-level ones. This assumption is likely to be satisfied for the vast majority of the municipalities in our sample, as in 1871 about 80% of the population lived in rural areas (Malanima and Zamagni (2010)). Moreover, the Baccarini Law lines connected small towns that were not yet reached by the main railways going through the largest cities that, as already discussed, are excluded from our analysis. Still, to assuage this

[36] For the coefficients on the control variables, see Appendix Table A.10.

TABLE 5. IMPLEMENTATION OF BACCARINI LAW'S RAILWAY PROJECTS AND 1882-1886 MUNICIPALITY-LEVEL ELECTORAL OUTCOMES

	(1)	(2)
Dependent variable:	*Municipality obtains rail during legislature*	
Proximity to projects:	10 km	5 km
Marginality percentile:	≤ 20th	≤ 20th
	Panel A	
Last winner's share in municipality	0.0369***	0.0346**
	(0.0116)	(0.0158)
Adjusted R^2	0.289	0.312
	Panel B	
Last winner's share in municipality	0.0558	0.0493
× Opposition party	(0.0361)	(0.0489)
Last winner's share in municipality	0.0333***	0.0323**
× Government party	(0.0116)	(0.0162)
Adjusted R^2	0.288	0.311
Observations	1,045	678
Number of electoral district	49	46
Municipality-level controls	✓	✓
Province FE	✓	✓
District FE	✓	✓

Notes: The table reports reports OLS estimates. The unit of observation is a municipality. The dependent variable indicates the passage of a railway on the municipality territory, which construction was contracted out during the 1882 and 1886 legislatures. Panel A employs the share of total votes obtained in the municipality by the candidate elected in the last seat of the district. In Panel B the share of votes obtained in the municipality is interacted with the party of the elected candidate. Column (1) employs the sample of municipalities in a 10 km proximity to the railway projects, while column (2) employs the sample of municipalities a 5 km proximity to the railway projects. The proximity measures are based on least cost paths connecting the focal points indicated by the Baccarini Law. The sample is restricted to municipalities in districts belonging to the top quintile of the marginality measure. Municipality-level controls include: log population density in 1881, presence of post office, telegraph, port, railway or railway station on the territory in 1871, total number of secondary schools and libraries in 1863, market access, terrain ruggedness, agricultural suitability, log land area, elevation and presence of a coast. All specifications employ province and district fixed effects. Standard errors adjusted for spatial correlation, based on a 20 km window, in parenthesis. ***, **, and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

identification concern, we estimate equation (2) excluding the largest municipalities in our sample, i.e. those in the top 5% of the distribution by population. The findings reported in Appendix Tables A.11 (focusing on the 1880 election) and A.12 (1882 and 1886 elections) show that our results are robust.

The second concern is that despite our focus on close elections, incumbent politicians may hold a structural advantage and thus be in a better position to win close races. Eggers et al. (2015) show that this is not generally the case, since the assumptions behind the RD design are typically met in a wide variety of electoral settings. Nevertheless, to address this concern, we use data from Corbetta and Piretti (2009) to match the names of candidates across different elections to identify incumbents. Starting with the 1880 election, we find that while 283 out of 508 representatives were re-elected in the same district, only for 15 of them this occurred in close races. Turning to the 1882 election, the electoral reform completely changed the design of districts and introduced multi-member districts, making it hard to exploit political rents from a previous election. Finally, considering the 1886 election, there were 26 candidates re-elected in the last seat of the district, but only for 6 of them the election was close. Overall, these numbers indicate that incumbents were much more likely to be re-elected with a large margin of victory than in close races and, as a result, they tend to be excluded by construction in our analysis focusing on marginal elections. Nonetheless, as evident from Appendix Tables A.15 (1880 election) and A.16 (1882 and 1886 elections), excluding districts, where the elected candidate of interest is an incumbent, leads to very similar results.

Our analysis so far has focused on whether alignment with the district's elected member of parliament made a municipality more likely to see a Baccarini Law line crossing its territory. We have instead abstracted away from explicitly considering the timing of the construction, which may also be affected by political factors. In other words, while in first instance elected representatives compete to bring a rail line to a given municipality, they may also compete to get the project implemented sooner rather than later. To address this concern, we re-estimate equation (2) using railway line fixed effects instead of province fixed effects, noting that trunks of the same line were approved for construction within similar time frames. The results from this alternative specification are presented in Appendix Tables A.13 (1880 election) and A.14 (1882 and 1886 elections) and are very similar to our benchmark findings.

Finally, allowing for different clustering structures (i.e. clustering by electoral district, double-clustering by electoral district and railway line, and spatial clustering based on a 50 km window around the municipality centroid) also does not affect the significance of our main results (see Appendix Tables A.19 and A.20).

5. Railways and Long-Run Growth

A long-standing literature has highlighted the important contribution played by railroad construction on long-run development. Up to this point our analysis has shown that political alignment had an important effect on the pattern followed in the construction of the railroad network promoted by the Baccarini law. Hence, an important question is whether the political conditions prevailing in 1880-1890 had long-lasting consequences on the economic development of the country. To tackle this question, we employ detailed municipality-level data from both the population and industrial censuses covering the period up to 1991.

We start our empirical analysis by reporting some correlations patterns to illustrate the relationship between the long-run population level and access to the railways introduced by the Baccarini Law.[37] Specifically, we consider the following baseline model:

$$ln(P_{mpdt}) = \delta Rail_{mpd} + \beta X_{mpd} + \sigma_{pt} + \phi_{dt} + \epsilon_{mpdt}. \quad (3)$$

In this model, P_{mpdt} indicates the population of municipality m, located in province p and district d, observed in census year t, between 1901–1991.[38] Given the structure of our population panel, 1901 is the first census year by which the effect of railway access can be expected to appear, as the previous census is the one from 1881, when the railway constructions were just getting underway.[39] As apparent from Table A.1, the vast majority of Baccarini Law railways had been completed by 1901. $Rail_{mpd}$ is an indicator variable taking a value of one for municipalities reached by the Baccarini Law railways, and zero otherwise. σ_{pt} and ϕ_{dt} indicate, respectively, province-year and district-year fixed effects. X_{mpd} is a vector of municipality-level controls. In the above specification, δ represents the effect of the Baccarini Law railways on the average level of population over the period 1901-1991. To account for spatial correlation in patterns of local economic development, we consider robust standard errors clustered by *circondario* and year, with the circondario being an administrative unit grouping multiple municipalities but smaller than provinces.

Table 6 reports the results. We start in column (1) with a parsimonious specification including only year fixed effects. In column (2), we additionally control for a rich set of municipality-level characteristics summarized in Table 2.[40] Adding province-year fixed effects in column (3) allows us to further improve the comparison of municipalities with similar characteristics. Results indicate a strong positive correlation between population and railway access: municipalities reached by the Baccarini Law railways were on average 9.3% larger over the period 1901-91, according to the estimates in column (3). In column (4), we focus on the sample of municipalities that are in a 10 km corridor, obtaining similar results.

Next, we further restrict the sample to districts that were won by a close margin when the

[37] Our population data at 1991 constant municipal boundaries are taken from Sistema Statistico Nazionale (1994).

[38] Censuses are carried out every 10 years, with the exception of the decade 1932-1941, when the census took place in 1936.

[39] Due to budgetary problems, the 1891 census was not carried out. As in previous sections, we only use the railways contracted out by 1890, which were a vast majority of the total.

[40] These include log population in 1871, presence of post office, telegraph, port, railway or railway station on the territory, total number of secondary schools and libraries, terrain ruggedness, agricultural suitability, log land area, elevation, presence of a coast, quality and quantity of water available, percentage of roads with sewage system, percentage of houses with toilets, per capita number of doctors, per capita number of pharmacies, per capita number of hospital beds, number of years with registered cases of cholera, total tax revenues (log per capita), revenues obtained by taxing terrains and buildings (log per capita) and expenditure on public education (log per capita).

Table 6. Long-Run Impact of Baccarini Law's Railway Expansion on Municipalities' Population: Panel Estimates

	Dependent variable: *Log population*						
	OLS						IV
Proximity to railways:	-	-	-	10 km	10 km	10 km	10 km
Marginal districts	-	-	-	-	Yes	Yes	Yes
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Railway access	0.6492***	0.1024***	0.0931***	0.0850***	0.1486***	0.1543***	0.2281**
	(0.0701)	(0.0266)	(0.0215)	(0.0228)	(0.0344)	(0.0328)	(0.1139)
Observations	68,159	63,309	63,309	27,010	5,450	5,450	5,370
Adjusted R^2	0.048	0.838	0.883	0.899	0.890	0.909	0.909
KP F-stat							11.80
Year FE	✓	✓					
Municipality-level controls		✓	✓	✓	✓	✓	✓
Province × year FE			✓	✓	✓	✓	✓
District × year FE						✓	✓

Notes: Table presents panel estimates regressing population on railway access. The unit of observation is a municipality. The dependent variable is the log of municipality population for periods between 1901 and 1991 (census years are 1901, 1911, 1921, 1931, 1936, 1951, 1961, 1971, 1981 and 1991). The explanatory variable is a dummy denoting municipalities reached by one of the Baccarini Law railways. Municipality-level controls include: log population in 1871, presence of post office, telegraph, port, railway or railway station on the territory, total number of secondary schools and libraries, terrain ruggedness, agricultural suitability, log land area, elevation, presence of a coast, quality and quantity of water available, percentage of roads with sewage system, percentage of houses with toilets, per capita number of doctors, per capita number of farmacies, per capita number of hospital beds, number of years with registered cases of cholera, per capita municipal budget measures on tax revenue and expenditures. Robust standard errors, clustered by circondario and year, are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

relevant railway trunks were contracted out, so that we focus only on municipalities where railway allocations were affected by quasi–random political factors. To this end, we proceed as follows. For each trunk of each line, we identify the legislature in which it was contracted out, and include in the sample municipalities that were located in a 10 km proximity of the trunk, and belonged to districts that were marginal in that legislature. Our favorite specification using this restricted sample is reported in column (6), where we also include district-year fixed effects. The larger coefficient in this column, compared to column (3), suggests that our earlier estimates were downward biased due to the non-random placement of the railways: in particular, these were more likely to be awarded to municipalities whose population would grow *less*.

To rule out that the patterns we have uncovered could be due to pre–trends, in Appendix Table A.21 we carry out a counterfactual analysis, in which we regress pre-Baccarini Law population (e.g. between 1861–1881) on subsequent access to lines constructed under the railway expansion program. Our results indicate that, prior to the advent of the rail, towns that were subsequently connected do not show different population patterns compared to those that did not. In other words, we find no pre–trends in population growth for towns that subsequently gained access to the railroads.

The specification in column (6) of Table 6 is very demanding, since it only compares similar municipalities located in districts were the allocation of the railways was influenced by quasi-random political factors. Nevertheless, we cannot rule out that the allocation of the railways was endogenous: to the extent that it could depend on unobserved local characteristics affecting population, our results could still be biased upward or downward.

To address this concern, we next instrument for the placement of the railway, using our measure of random alignment with the winning candidate in the legislature when the railway was approved. As a reminder, our measure captures the share of votes obtained in the municipality by the winning candidate (for the 1880-1882 legislature), or by the last candidate elected (for the 1882-86 and 1886-90 legislatures). We still focus on the sample of municipalities belonging to marginal districts employed in columns (5) and (6). Our IV specification is based on the following first and second stages:

$$Rail_{mpd} = \gamma S_{mpd} + \beta X_{mpd} + \mu_{pt} + \nu_{dt} + \varepsilon_{mpdt} \tag{4}$$

$$ln(P_{mpdt}) = \delta \widehat{Rail}_{mpd} + \beta X_{mpd} + \sigma_{pt} + \phi_{dt} + \epsilon_{mpdt} \tag{5}$$

where S_{mpd} is the instrument, and μ_{pt} and ν_{dt} are respectively province-year and district-year fixed effects.

For our instrument to satisfy the exclusion restriction, alignment with the winning candidate should not have a direct effect on population growth, other than through the railways. This assumption could be violated if support for the winner could affect other relevant contemporary public policies or if political conditions prevailing at the end of the 19th century were persistent over time, thus affecting subsequent patterns of public investment. Both concerns are unlikely to be relevant over the time period considered in our analysis. Starting with the first, note that the railway construction program was by far the largest public investment initiative of the period.[41] As for other policies, transfers to municipalities were very limited, representing only a small fraction of what was being spent on the railroad construction program.[42] Hence, it is implausible that politics might have affected local growth

[41]The Italian State allocated in excess of 2 billion Lire to the railway constructions in 1879–1899 (Ferrucci 1898), the bulk of which was spent in the 1880s. By comparison, State investment in the construction of roads (the second most expensive public work) stood at an average 17 million Lire in 1880, 1884 and 1885 (Ministero di Agricoltura, Industria e Commercio 1884, p. 607; Ministero di Agricoltura, Industria e Commercio 1886, p. 383.) This reflected the approach to public transport which was prevalent in the second half of the 19th century, putting the railways at center stage and relegating the roads to the role of local feeders to the railways (see Maggi 2009, pp. 81-2).

[42]For example, subsidies from the State and provinces to the municipalities (to cover things such as local

through other channels. To further corroborate these arguments, in Appendix Figure A.7 we study the relationship between population and support for marginal winners in municipalities not reached by the Baccarini Law railways both within and outside the 10 km corridors. If political support in marginal districts had an effect through channels other than railway access, we should observe a positive relationship. Our results indicate that this is not the case across all elections whether we consider all municipalities, those included in the corridors or those outside of them.

Turning to the persistence of political conditions over time, this is unlikely since fundamental changes occurred between the late 19th century and the post WWII period, including major extensions to the franchise (Larcinese (2021)), culminating in universal suffrage in 1948, the switch to a proportional system and the emergence of political parties with strong grassroots presence.

The results of our IV specification are reported in column (7) of Table 6. The point estimate for δ rises even more (to 22.8%), confirming that our earlier estimates were downward biased.

Up to this point, the analysis has focused on the impact of the Baccarini Law railways on the average population *levels* between 1901-1991. We next investigate their impact on population *growth* over the same period. We estimate the following model,

$$ln(P_{mpdt}) = \delta tRail_{mpd} + \beta tX_{mpd} + \alpha_m + \sigma_{pt} + \phi_{dt} + \epsilon_{mpdt}, \quad (6)$$

where α_m are municipality fixed effects (which absorb the average 1901-91 population level), and where the railway dummy $Rail_{mpd}$ – as well as the controls in X_{mpd} – is interacted with a time trend t=(1901...1991). The coefficient δ now captures any differential average 1901-91 population growth, in municipalities that obtained the railways compared to those that did not.[43]

Such a specification also allows us to employ an IV-FE estimation strategy, based on the following model:

$$tRail_{mpd} = \gamma tS_{mpd} + \rho tX_{mpd} + \mu_m + \nu_{pt} + \upsilon_{dt} + \varepsilon_{mpdt} \quad (7)$$

roads, other public works and public education) stood at a meagre 20 million Lire in 1897 (Ministero di Agricoltura, Industria e Commercio 1899, p. XII).

[43] To interpret δ note that:

$$\frac{\hat{\delta}\,(t_1 - t_0)}{10} = E\left[ln\left(\frac{P_{mpd,t_1}}{P_{mpd,t_0}}\right)|Rail_{mpd} = 1\right] - E\left[ln\left(\frac{P_{mpd,t_1}}{P_{mpd,t_0}}\right)|Rail_{mpd} = 0\right]$$

where $t_1 > t_0$ are sample years, and we divide by 10 because the interval between one observation and the other is on average 10 years.

$$ln(P_{mpdt}) = \delta t\widehat{Rail_{mpd}} + \beta t X_{mpd} + \alpha_m + \sigma_{pt} + \phi_{dt} + \epsilon_{mpdt}. \quad (8)$$

Table 7 reports the results based on the restricted sample of municipalities in a 10 km proximity of the railways and belonging to marginal electoral districts. We first present the results for OLS and IV without municipality fixed effects in columns (1) and (2), and we then include them in columns (3) and (4). Results with and without fixed effects are broadly comparable. In particular, the coefficient in column (4) implies that – between 1901 and 1991 – the population of municipalities connected by a Baccarini Law railway grew 52.8% faster than those that were not connected.[44]

Importantly, we find that the IV estimates of δ are larger than OLS. These results are in line with earlier findings in the literature, which has pointed out that "The OLS coefficients might be biased downward in the case of an omitted variable - cities with lower growth prospects might have *influenced* routing in order to become connected." (Hornung 2015, page 714). Our research design, using quasi–random variation in assignment to treatment due to political factors, allows us to show that secondary railroads in Italy were indeed allocated to disadvantaged towns, and that these towns were able to gain influence in shaping the railroad paths through pork barrel politics.

5.1. Railways and the patterns of economic activity

So far we have studied the causal impact of railway access on local population dynamics, showing that towns connected to the network grew faster than those that did not. These results are in line with earlier studies in the literature for other countries focusing on population dynamics, which is typically available at the municipal level. Studies of the patterns of economic activity at more aggregate geographic levels (e.g. U.S. county – see Margo and Haines (2008), Donaldson and Hornbeck (2016)) have shown sectorial differences in the effect of railway access.[45] In this section, we use unique data on economic activity at the municipal level to investigate the long-run effects of the Baccarini Law railways on different sectors.

To this end, we have digitized data from the Industrial Censuses of 1911 and 1927,[46] and combined this information with that available in Lorenzini (1998) for 1951–1991. As a result, in all years we have information on the number of establishments and number of employees at

[44] The coefficient implies that the connected municipalities grew 4.71% faster in the average 10-year period. The growth differential over the period 1901-91 was then $e^{0.047(1991-1901)/10} - 1 = 0.528$.

[45] For Italy, Ciccarelli et al. (2020) investigate the impact of the railway expansion of 1861-1913 on contemporary industrial growth at the regional level. They find modest average effects, which are however considerably higher for northern regions. A similar analysis, but at the province level, is conducted by Pontarollo and Ricciuti (2020), who find a more homogenous positive effect of the railways.

[46] E.g. the 1911 *Censimento degli Opifici e delle imprese industriali* and the 1927 *Censimento Industriale e Commerciale*. Unfortunately information on the agricultural sector at the municipality level is only available starting with the 1961 *Censimento Generale dell'Agricoltura* and thus is not included in our analysis.

Table 7. Long-Run Impact of Baccarini Law's Railway Expansion on Municipalities' Population: Comparing Specifications

	Dependent variable: *Log population*			
	OLS	IV	FE	IV-FE
	(1)	(2)	(3)	(4)
Railway access × year	0.0293***	0.0436**	0.0243***	0.0471*
	(0.0041)	(0.0186)	(0.0055)	(0.0255)
First stage:				
Winner share in municipality		0.0778***		0.0775***
		(0.0208)		(0.0214)
diff. in population growth in 1901-1991	30.17%	48.05%	24.44%	52.79%
Observations	5,370	5,370	5,370	5,370
Adjusted R^2	0.913	0.912	0.533	0.521
KP F-stat		13.97		13.10
Municipality-level controls × year	✓	✓	✓	✓
Municipality FE			✓	✓
Province × year FE	✓	✓	✓	✓
District × year FE	✓	✓	✓	✓

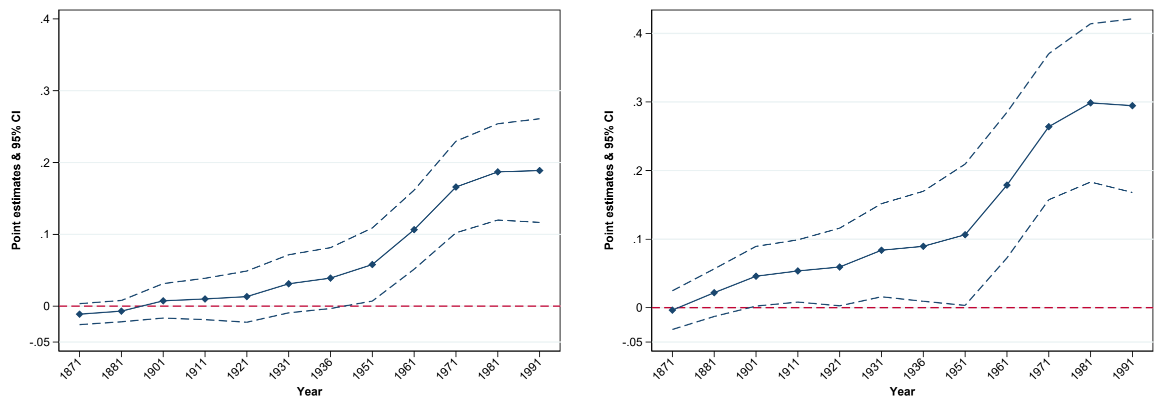
Notes: Table presents panel estimates regressing population on railway access. The unit of observation is a municipality. The dependent variable is the log of municipality population for periods between 1901 and 1991 (census years are 1901, 1911, 1921, 1931, 1936, 1951, 1961, 1971, 1981 and 1991). The explanatory variable is a dummy denoting municipalities reached by one of the Baccarini Law railways, interacted with year. All specification limit the sample to municipalities in a 10 km proximity of the railways trunks belonging to marginal electoral districts when the railway trunk construction was contracted out. Municipality-level controls include: log population in 1871, presence of post office, telegraph, port, railway or railway station on the territory, total number of secondary schools and libraries, terrain ruggedness, agricultural suitability, log land area, elevation, presence of a coast, quality and quantity of water available, percentage of roads with sewage system, percentage of houses with toilets, per capita number of doctors, per capita number of pharmacies, per capita number of hospital beds, number of years with registered cases of cholera, per capita municipal budget measures on tax revenue and expenditures. Robust standard errors, clustered by circondario and year, are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

the municipality level for manufacturing – starting in 1911 – and additionally for commercial activities starting in 1927.[47]

Similarly to Table 7, we estimate the effect of railway access on sectorial patterns of economics activity using both OLS and IV models. Table 8 reports our findings for commercial activities (panels A and B) and industry (panels C and D). Our results indicate that railway access has a positively and significant effect both on the number of commercial establishments and employees (columns (1)-(2)) and their growth (columns (3)-(4)). In particular, according to the IV-FE estimate, the number of commercial establishments in municipalities reached by a Baccarini Law railways grew 7.5% faster in the average ten-year period, compared to those without access. The effect on growth in commercial sector employment is even larger at 9.8%. In contrast, we do not find evidence of a significant positive impact of railway access on the industrial sector. These results – in line with previous findings by Margo and Haines

[47] Commercial activities are defined consistently over time using the 1927 classification.

Figure 2. Long-Run Impact of Baccarini Law's Railway Expansion on Municipalities' Population: Event Study 1871-1991



(A) 10 km proximity of railways

(B) 10 km proximity and marginal districts

Notes: Figures plot coefficients from fixed effects estimates, with connected solid lines corresponding to point estimates and dashed lines to 95% confidence intervals based on robust standard errors clustered at the circondario level. The dependent variable is the log of municipality population. The explanatory variable is a dummy denoting municipalites reached by one of the Baccarini Law railways, interacted with year fixed effects. All specifications include municipality fixed effects, municipality-level controls interacted with year, province-year fixed effects and electoral district-year fixed effects. Figure 2-(A) employs the sample of municipalities that are in a 10 km proximity of the railways. Figure 2-(B) further restricts the sample to municipalities that belonged to electoral districts characterized by marginal elections when the railway trunk construction was contracted out. Municipality-level controls include: log population in 1861, presence of post office, telegraph, port, railway or railway station on the territory, total number of secondary schools and libraries, terrain ruggedness, agricultural suitability, log land area, elevation, presence of a coast, quality and quantity of water available, percentage of roads with sewage system, percentage of houses with toilets, per capita number of doctors, per capita number of pharmacies, per capita number of hospital beds, number of years with registered cases of cholera, per capita municipal budget measures on tax revenue and expenditures.

(2008) for the American Midwest – indicate that Baccarini Law railways turned the connected municipalities into commercial centres. This is perhaps not surprising, given that the towns connected to the railroad network by the Baccarini Law are typically small, and a fall in internal trade costs may facilitate the concentration of industrial activities in larger cities.

5.2. The differential impact of railways over time

So far in our analysis we have assumed the impact of railway access to be constant across the periods we consider. We now employ the following more flexible specification to allow this effect to vary over time:

$$ln(P_{mpdt}) = \delta_t Rail_{mpd} + \beta_t X_{mpd} + \alpha_m + \sigma_{pt} + \phi_{dt} + \epsilon_{mpdt} \quad (9)$$

with t=(1861...1991) and 1861 being the base year omitted in the estimates. In this specification, δ_t captures the difference in average population growth in $1861 - t$ time interval, between municipalities reached by the railways and those that were not.

The results of our event study are reported in Figure 2. Panel (A) illustrates the pattern

Table 8. Long-Run Impact of Baccarini Law's Railway Expansion on Municipalities' Industrial and Commercial Activity

	OLS	IV	FE	IV-FE
	(1)	(2)	(3)	(4)
	Panel A: *Log commercial establishments*			
Railway access × year	0.0316***	0.0814***	0.0414**	0.0748*
	(0.0070)	(0.0315)	(0.0169)	(0.0440)
Observations	3,220	3,220	3,220	3,220
Adjusted R^2	0.819	0.805	0.178	0.172
KP F-stat		12.60		15.83
	Panel B: *Log commercial employees*			
Railway access × year	0.0311***	0.0806**	0.0342*	0.0916**
	(0.0070)	(0.0317)	(0.0190)	(0.0370)
Observations	3,221	3,221	3,221	3,221
Adjusted R^2	0.821	0.807	0.233	0.219
KP F-stat		12.60		15.83
	Panel C: *Log industrial establishments*			
Railway access × year	0.0219***	0.0160	0.0101	0.0920
	(0.0067)	(0.0271)	(0.0134)	(0.0776)
Observations	3,755	3,755	3,755	3,755
Adjusted R^2	0.691	0.691	0.425	0.418
KP F-stat		13.32		13.39
	Panel D: *Log industrial employees*			
Railway access × year	0.0203***	0.0278	-0.0080	0.0470
	(0.0069)	(0.0273)	(0.0184)	(0.1022)
Observations	3,757	3,757	3,757	3,757
Adjusted R^2	0.590	0.590	0.119	0.115
KP F-stat		13.27		13.04
Municipality-level controls × year	✓	✓	✓	✓
Municipality FE			✓	✓
Province × year FE	✓	✓	✓	✓
District × year FE	✓	✓	✓	✓

Notes: Table presents panel estimates regressing commercial and industrial activity on railway access. The unit of observation is a municipality. The dependent variable is the log number of commercial establishments in Panel A and employees in Panel B (census years are 1927, 1951, 1961, 1971, 1981 and 1991), and the log number of industrial establishments in Panel C and employees in Panel D (census years are 1911, 1927, 1951, 1961, 1971, 1981 and 1991). The explanatory variable is a dummy denoting municipalities reached by one of the Baccarini Law railways, interacted with year. All specification limit the sample to municipalities in a 10 km proximity of the railways trunks belonging to marginal electoral districts when the railway trunk construction was contracted out. Municipality-level controls include: log population in 1871, presence of post office, telegraph, port, railway or railway station on the territory, total number of secondary schools and libraries, terrain ruggedness, agricultural suitability, log land area, elevation, presence of a coast, quality and quantity of water available, percentage of roads with sewage system, percentage of houses with toilets, per capita number of doctors, per capita number of farmacies, per capita number of hospital beds, number of years with registered cases of cholera, per capita municipal budget measures on tax revenue and expenditures. Robust standard errors, clustered by circondario and year, are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

of population growth for all municipalities within 10 km of the railways. The results suggest that the positive impact of railways can be only observed starting in the post-WWII period. Note though that the insignificant coefficients in the short and medium run could be due to the non-random placement of the railways, which we have found evidence of earlier in this section. To the extent that the railways were disproportionately allocated to municipalities which would grow less, our estimated coefficients would be downward biased. In Figure 2-(B) we alleviate this concern by restricting our attention to municipalities that belonged to a marginal electoral district at the time of approval of the railway. Our estimates in this case indicate that the positive effect of railroad access on population growth starts earlier – it is already visible in 1901 – and is larger. In fact, for municipalities with railroad access we can observe differences in population growth around 5% by 1901, increasing to almost 30% by 1991 (in line with the coefficient in Table 7, column (1)).

Table 9. Long-Run Impact of Baccarini Law's Railway Expansion on Municipalities' Population: IV Estimates by Period

	Dependent variable: *Log population*			
	1901-1991	1901-1936	1936-1951	1951-1991
	(1)	(2)	(3)	(4)
	Panel A: IV			
Railway access	0.2281**	0.1190*	0.1022	0.3380**
	(0.1139)	(0.0707)	(0.0742)	(0.1684)
Observations	5,370	2,685	1,074	2,685
Adjusted R^2	0.909	0.962	0.951	0.891
KP F-stat	11.80	11.34	11.07	11.34
Municipality-level controls × year	✓	✓	✓	✓
Province × year FE	✓	✓	✓	✓
District × year FE	✓	✓	✓	✓
	Panel B: IV-FE			
Railway access × year	0.0471*	0.0042	-0.0279	0.1101***
	(0.0255)	(0.0181)	(0.0472)	(0.0424)
Observations	5,370	2,685	1,074	2,685
Adjusted R^2	0.521	0.561	0.160	0.362
KP F-stat	13.10	14.22	11.83	14.11
Municipality FE	✓	✓	✓	✓
Municipality-level controls × year	✓	✓	✓	✓
Province × year FE	✓	✓	✓	✓
District × year FE	✓	✓	✓	✓

Notes: Table presents panel estimates regressing population on railway access. The unit of observation is a municipality. The dependent variable is the log of municipality population for periods between 1901 and 1991 (census years are 1901, 1911, 1921, 1931, 1936, 1951, 1961, 1971, 1981 and 1991). The explanatory variable is a dummy denoting municipalities reached by one of the Baccarini Law railways. All specification limit the sample to municipalities in a 10 km proximity of the railways trunks belongING to marginal electoral districts when the railway trunk construction was authorized. Municipality-level controls include: log population in 1871, presence of post office, telegraph, port, railway or railway station on the territory, total number of secondary schools and libraries, terrain ruggedness, agricultural suitability, log land area, elevation, presence of a coast, quality and quantity of water available, percentage of roads with sewage system, percentage of houses with toilets, per capita number of doctors, per capita number of pharmacies, per capita number of hospital beds, number of years with registered cases of cholera, per capita municipal budget measures on tax revenue and expenditures. Robust standard errors, clustered by circondario and year, are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

To further investigate the timing of the effect, we repeat the IV regressions of Tables 6 and 7 on restricted time periods: 1901-1936, 1936-1951, and 1951-1991. Panel A of Table 9 reports the estimates for the specification without municipality fixed effects (for comparison, column (1) reports the specification in column (7), Table 6). While the effect in the first two periods is only around 10% (and not surprisingly it is only significant for the period 1901-1936), it becomes substantially larger in the post-WWII period, growing to 34%. Panel B of the Table 9 adds municipality fixed effects (as in column (4) of Table 7, also reported in the current table as column (1)). The observed pattern is very similar. The effect on population growth in the first two periods is not significantly different from zero, while in the post-WWII period the connected municipalities grew 11.01% faster in the average 10-year period.

How can we make sense of the fact that the Baccarini Law railways seem to have born most of their impact only 60-70 years after they were built? One plausible explanation is that the initial effect of the railways was later compounded by the economic boom of 1951-1973, when GDP grew at an average 5.3% per year (as compared to less than 2% in the period 1900-1939 – see Malanima and Zamagni 2010), large internal migration occurred, and there was a great expansion in roads and road traffic.[48] It is possible that the municipalities reached by the railways, thanks to their better connections to the big cities, acquired some kind of advantage early-on, for example as distribution centers for the surrounding regions.[49] When the economic boom came, they stood to gain from it more than the others: they attracted more new economic activities, and were more likely to be connected to the new roads.

6. Conclusions

In this paper, we have shown that electoral politics has heavily influenced the allocation of secondary railways in Italy in 1879-1890. Politics mattered at two distinct levels. First, the initial choice, as to which city pairs to connect, was tilted in favour of connections which cut across districts that had voted for the government in the 1876 election. Second, once it was decided that a city pair would be connected, the actual route followed by the railway was tilted in favour of municipalities that had voted with the government in the election just

[48]In Italy as elsewhere, railways and roads experience a sharp reversal of fortunes in this period, with roads acquiring priority status in public investment programs. There was a massive investment in roads and motorways in the 1950s, which accelerated in the 1960s. By the 1970s, Italy had more km of motorways than France, a country twice as large (Maggi 2009, p. 117-8). This was also the period in which cars and mopeds first became affordable to the average Italians, and were sold in the millions.

[49]Basile et al. (2021) argue that, in provinces that were better connected to the railways, literacy spread more uniformly from the provincial capital city to the hinterland (they consider the period 1871-1911). These early advantages in terms of human capital may also help to explain why the connected municipalities stood to gain more from the post-WWII economic boom.

preceding the construction of the railway. Our identification strategy allows us to attribute these effects to a causal impact of political alignment on the arrival of the railway. We interpret this as an example of pork-barrel politics.

We have also shown that, by influencing the allocation of the railways, political alignment in the late 19th century had important, long-run implications for growth and the spatial organisation of the Italian economy. Municipalities that voted for the government in the relevant election - and as a result obtained the railways - experienced considerably faster population growth in the century that followed (1901-1991). Growth differentials were already present at the beginning of this period, but widened after World War II, suggesting that the diverging trajectories created by political alignment were further pulled apart by the post-World War II "economic miracle". This seems a remarkable example of how even minor political events occurring at a "critical juncture" (Acemoglu and Robinson 2012) may be later compounded by unrelated events, and thus have a big effect on long-run development.

Our research could be extended in two directions. First, one could study whether the impact of political alignment differed systematically across Italian regions, depending on the quality of pre-unitarian institutions. Since our events occurred shortly after unification (1861), it is possible that pre-unitarian institutions still determined the functioning of politics at the local level. Thus, one might be able to gauge the role of political institutions in limiting the prevalence of pork-barrel politics. Second, one could go beyond our reduced form estimates and attempt the estimate the parameters of a structural model of politics, infrastructure allocation and economic development. The role of such model would be to quantify the welfare cost of having infrastructure decisions mediated by electoral politics (as opposed to determined by a benign planner), also depending on the quality of political institutions. Ultimately, such a model might reveal the "true" welfare gains of a large infrastructure investment, that is those to be expected when the infrastructure is allocated neither randomly nor optimally, but rather through the functioning of real-world political institutions.

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Appendix A

A.1 Construction of Least Cost Paths

In this section, we provide a description of the procedure employed to simulate least cost paths for the railways planned for construction by the Baccarini Law of 1879, using the ArcGIS software.

The first step requires identifying the starting and ending points for each railway line. We obtain this information directly by the aforementioned piece of legislation, which provides the list of city pairs that would have to be connected.

The second step involves the creation of a cost surface measuring hypothetical railway construction costs. We do so by considering three cost parameters: distance, slope and crossing of water bodies. Exploiting construction reports from Ministero dei Lavori Pubblici (1885, 1889, 1891) and drawing from the estimates produced by Büchel and Kyburz (2020) for the case of Switzerland in a similar time period, we obtain the following cost parameters: 200,000 lire per kilometre, 18,000 additional lire per degree climbed and 450,000 lire per 100 meters of bridge built, which we linearly scale based on the size of the water body. Combining these cost parameters with the elevation model and hydrological map of Italy, we produce a 100×100 meters cost raster. We then employ the "cost distance" ArcGIS tool to calculate, based on the cost raster, the cumulative cost of the alternative routes branching out from the starting point of the railway line.

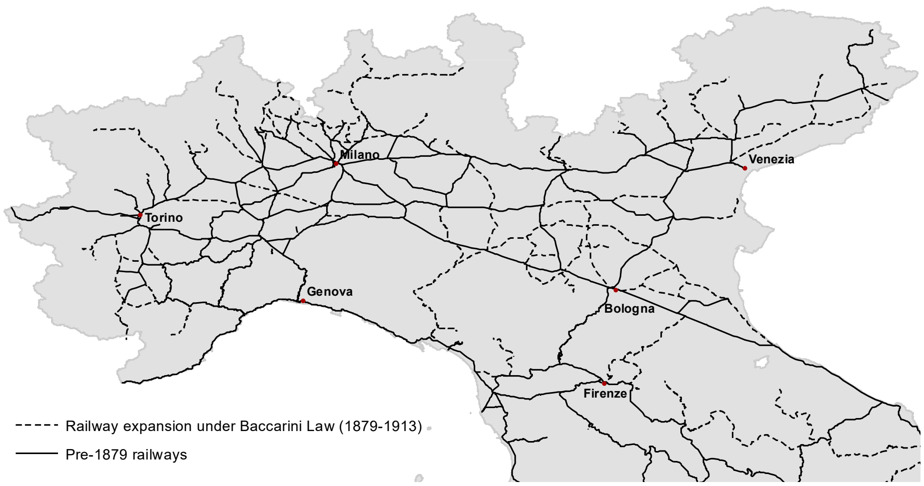
The final step of the procedure utilizes the "cost path" ArcGIS tool and the output from the previous step to determine the least cost paths connecting the starting and ending points of the railway lines. These paths are shown in Figure A.1.

A.2 Figures

Figure A.1. Baccarini Law Least Cost Paths

Notes: Extent of the Italian railway network before 1879 and least cost paths connecting the focal points indicated by the Baccarini Law.

Figure A.2. Railways Expansion in Northern Italy, Pre- and Post-1879



Notes: Extent of the northern Italian railway network before 1879 and lines constructed between 1879 and 1913 under the Baccarini Law. Authors' elaborations based on the data by Ciccarelli and Groote (2017).

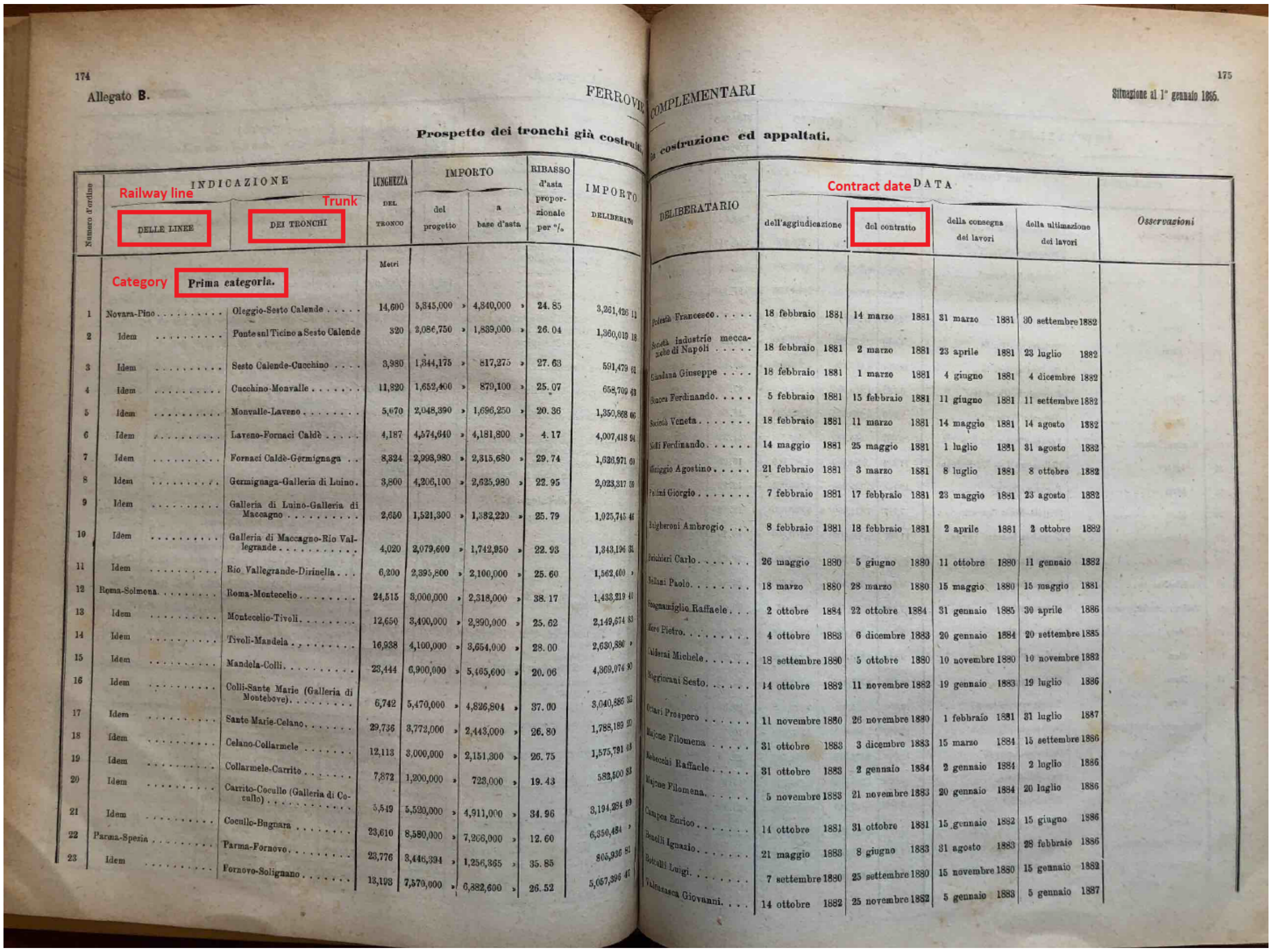
Figure A.3. Railways Expansion in Italy under Baccarini Law

(A) Railway expansion 1879-1913, category 1-3 lines

(B) Railway expansion 1879-1913, category 4-5 lines

Notes: Railways constructed between 1879 and 1913 under the Baccarini Law, divided between category 1-3 lines and category 4-5 lines. Authors' elaborations based on the data by Ciccarelli and Groote (2017).

Figure A.4. Construction Reports



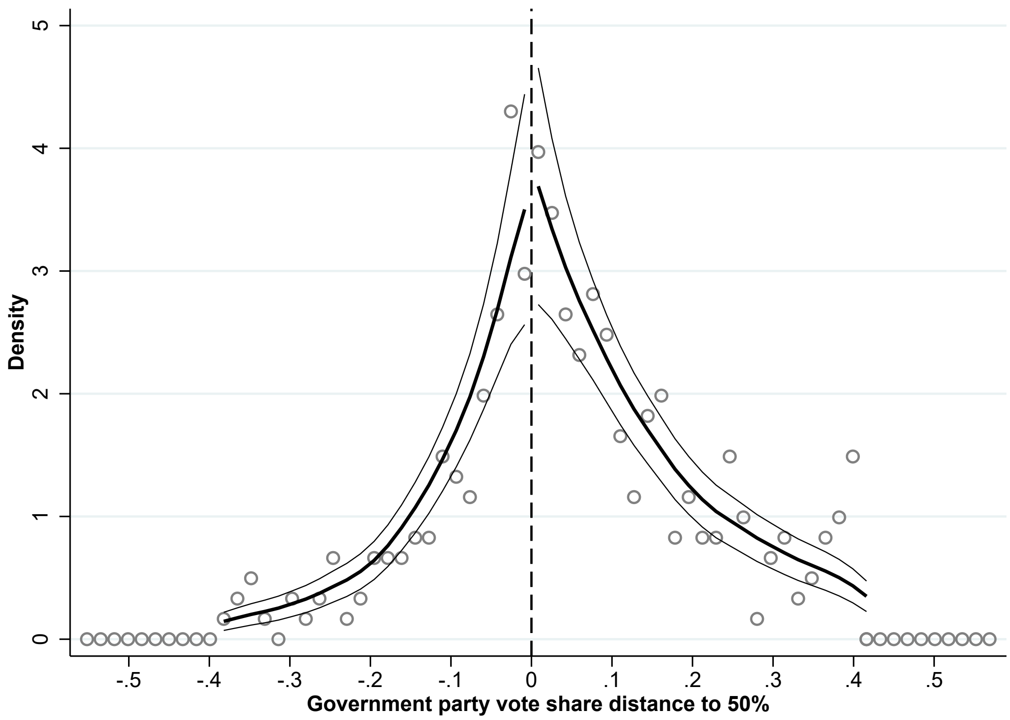
174 Allegato B. FERROVIE COMPLEMENTARI 175 Situazione al 1° gennaio 1885.

Prospetto dei tronchi già costruiti in costruzione ed appaltati.

Numero d'ordine	INDICAZIONE delle linee	INDICAZIONE dei tronchi	Lunghezza del tronco	Importo del progetto	Importo a base d'asta	Ribasso d'asta proporzionale per %	Importo deliberato	Deliberatario	Data dell'aggiudicazione	Data del contratto	Data della consegna dei lavori	Data della ultimazione dei lavori	Osservazioni
			Metri										
	Prima categoria.												
1	Novara-Pino	Oleggio-Sesto Calende	14,600	5,345,000 »	4,340,000 »	24. 85	3,261,426 11	Podestà Francesco	18 febbraio 1881	14 marzo 1881	31 marzo 1881	30 settembre 1882	
2	Idem	Ponte sul Ticino a Sesto Calende	320	2,086,750 »	1,839,000 »	26. 04	1,360,019 18	Società industrie meccaniche di Napoli	18 febbraio 1881	2 marzo 1881	23 aprile 1881	23 luglio 1882	
3	Idem	Sesto Calende-Cucchino	3,980	1,344,175 »	817,275 »	27. 63	591,479 61	Giandana Giuseppe	18 febbraio 1881	1 marzo 1881	4 giugno 1881	4 dicembre 1882	
4	Idem	Cucchino-Monvalle	11,820	1,652,400 »	879,100 »	25. 07	658,709 61	Buora Ferdinando	5 febbraio 1881	15 febbraio 1881	11 giugno 1881	11 settembre 1882	
5	Idem	Monvalle-Laveno	5,670	2,048,390 »	1,696,250 »	20. 36	1,350,868 06	Società Veneta	18 febbraio 1881	11 marzo 1881	14 maggio 1881	14 agosto 1882	
6	Idem	Laveno-Fornaci Caldè	4,187	4,574,640 »	4,181,800 »	4. 17	4,007,418 94	Nelli Ferdinando	14 maggio 1881	25 maggio 1881	1 luglio 1881	31 agosto 1882	
7	Idem	Fornaci Caldè-Germignaga	8,324	2,993,980 »	2,315,680 »	29. 74	1,626,971 60	Maggio Agostino	21 febbraio 1881	3 marzo 1881	8 luglio 1881	8 ottobre 1882	
8	Idem	Germignaga-Galleria di Luino	3,800	4,206,100 »	2,625,980 »	22. 95	2,023,317 59	Palmi Giorgio	7 febbraio 1881	17 febbraio 1881	23 maggio 1881	23 agosto 1882	
9	Idem	Galleria di Luino-Galleria di Maccagno	2,650	1,521,300 »	1,382,220 »	25. 79	1,025,745 46	Bulgheroni Ambrogio	8 febbraio 1881	18 febbraio 1881	2 aprile 1881	2 ottobre 1882	
10	Idem	Galleria di Maccagno-Rio Vallegrande	4,020	2,079,600 »	1,742,950 »	22. 93	1,343,196 31	Brichieri Carlo	26 maggio 1880	5 giugno 1880	11 ottobre 1880	11 gennaio 1882	
11	Idem	Rio Vallegrande-Dirinella	6,200	2,395,800 »	2,100,000 »	25. 60	1,562,400 »	Bellani Paolo	18 marzo 1880	28 marzo 1880	15 maggio 1880	15 maggio 1881	
12	Roma-Solmona	Roma-Montecelio	24,515	3,000,000 »	2,318,000 »	38. 17	1,433,219 41	Scognamiglio Raffaele	2 ottobre 1884	22 ottobre 1884	31 gennaio 1885	30 aprile 1886	
13	Idem	Montecelio-Tivoli	12,650	3,400,000 »	2,890,000 »	25. 62	2,149,674 83	Toro Pietro	4 ottobre 1883	6 dicembre 1883	20 gennaio 1884	20 settembre 1885	
14	Idem	Tivoli-Mandela	16,938	4,100,000 »	3,654,000 »	28. 00	2,630,880 »	Calderai Michele	18 settembre 1880	5 ottobre 1880	10 novembre 1880	10 novembre 1882	
15	Idem	Mandela-Colli	23,444	6,900,000 »	5,465,600 »	20. 06	4,369,074 90	Maggiorani Sesto	14 ottobre 1882	11 novembre 1882	19 gennaio 1883	19 luglio 1886	
16	Idem	Colli-Sante Marie (Galleria di Montebove)	6,742	5,470,000 »	4,826,804 »	37. 00	3,040,886 32	Ottavi Prospero	11 novembre 1880	26 novembre 1880	1 febbraio 1881	31 luglio 1887	
17	Idem	Sante Marie-Celano	29,736	3,772,000 »	2,443,000 »	26. 80	1,788,189 20	Majone Filomena	31 ottobre 1883	3 dicembre 1883	15 marzo 1884	15 settembre 1886	
18	Idem	Celano-Collarmele	12,113	3,000,000 »	2,151,300 »	26. 75	1,575,791 43	Rebecchi Raffaele	31 ottobre 1883	2 gennaio 1884	2 gennaio 1884	2 luglio 1886	
19	Idem	Collarmele-Carrito	7,872	1,200,000 »	723,000 »	19. 43	582,500 83	Majone Filomena	5 novembre 1883	21 novembre 1883	20 gennaio 1884	20 luglio 1886	
20	Idem	Carrito-Cocullo (Galleria di Cocullo)	5,549	5,520,000 »	4,911,000 »	34. 96	3,194,284 99	Campos Enrico	14 ottobre 1881	31 ottobre 1881	15 gennaio 1882	15 giugno 1886	
21	Idem	Cocullo-Bugnara	23,610	8,580,000 »	7,266,000 »	12. 60	6,350,484 »	Benelli Ignazio	21 maggio 1883	8 giugno 1883	31 agosto 1883	28 febbraio 1886	
22	Parma-Spezia	Parma-Fornovo	23,776	3,446,394 »	1,256,365 »	35. 85	805,936 81	Botalli Luigi	7 settembre 1880	25 settembre 1880	15 novembre 1880	15 gennaio 1882	
23	Idem	Fornovo-Solignano	13,193	7,570,000 »	6,882,600 »	26. 52	5,057,396 47	Valsassina Giovanni	14 ottobre 1882	25 novembre 1882	5 gennaio 1883	5 gennaio 1887	

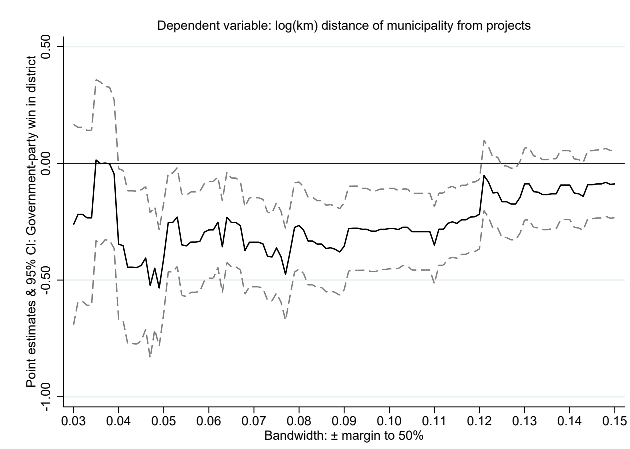
Notes: Construction reports from Ministero dei Lavori Pubblici (1885).

Figure A.5. Government Party Vote Share - McCrary Test

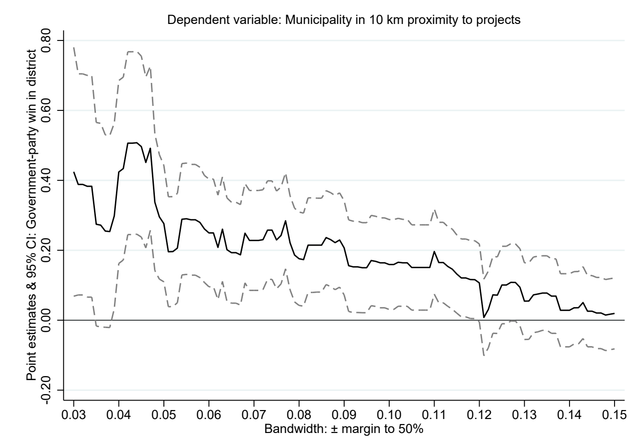


Notes: The figure implements the sorting test by McCrary (2008), plotting the density of observations in each government party vote share bin to test if there is a discountinuity at the 50% threshold.

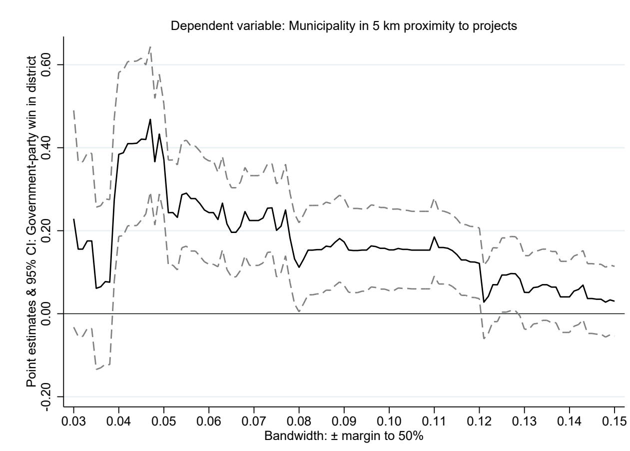
Figure A.6. Baccarini Law's Railway Projects and 1876 District-Level Elections: Sensitivity of RD Estimates to Margin



(A)



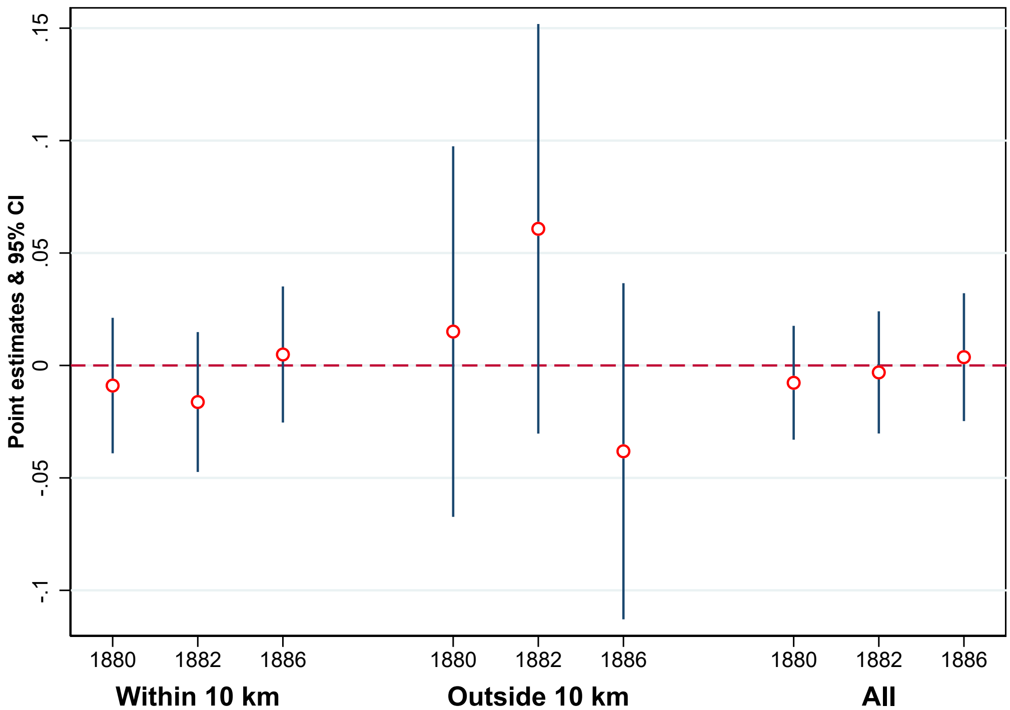
(B)



(C)

Notes: Figures plot coefficients from RD estimates, with solid lines corresponding to point estimates and dashed lines to 95% confidence intervals, based on different margin of victory bandwidths.

Figure A.7. Changes in population and political support: Marginal districts not reached by railways



Notes: Figures plot coefficients from OLS estimates with 95% confidence intervals bars based on robust standard errors clustered by circondario and year. The dependent variable is the log of municipality population for periods between 1901 and 1991 (census years are 1901, 1911, 1921, 1931, 1936, 1951, 1961, 1971, 1981 and 1991). The explanatory variable is the share of votes obtained in the municipality by the candidate elected in the electoral district if construction of the railway was contracted out in the 1880 parliament, and with the share of votes obtained in the municipality by the candidate elected in the last seat of the district if construction of the railway was contracted out in the 1882 or 1886 parliaments. From left to right, the plotted coefficients are based on regressions employing: municipalities that belonged to marginal electoral districts when the railway construction was contracted out and in a 10 km proximity of the railways ("Within 10 km"); municipalities in marginal districts and outside the 10 km proximity of the railways ("Outside 10 km"); municipalities in marginal districts both within and outside the 10 km proximity of the railways ("All"). All specifications include municipality-level controls, province-year fixed effects and electoral district-year fixed effects. Municipality-level controls include: log population in 1861, presence of post office, telegraph, port, railway or railway station on the territory, total number of secondary schools and libraries, terrain ruggedness, agricultural suitability, log land area, elevation, presence of a coast, quality and quantity of water available, percentage of roads with sewage system, percentage of houses with toilets, per capita number of doctors, per capita number of farmacies, per capita number of hospital beds, number of years with registered cases of cholera, per capita municipal budget measures on tax revenue and expenditures. ***, **, and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

A.3 Tables

TABLE A.1. BACCARINI LAW (1879), TOTAL KM PREDICTED AND TIMING OF CONSTRUCTION

	1^{st} category	2^{nd} category	3^{rd} category	4^{th} category	5^{th} category	Total
Km. completed by end of legislature:						
1876 - 1880	0	0	0	0	0	0
1880 - 1882	165	36	53	16	0	270
1882 - 1886	347	250	449	305	140	1,491
1886 - 1890	773	715	996	838	621	3,944
1890 - 1892	805	910	1,417	894	738	4,764
1892 - 1895	1,009	1,086	1,544	894	1,083	5,617
1895 - 1897	1,102	1,155	1,654	1,067	1,091	6,069
1897 - 1900	1,109	1,160	1,871	1,068	1,096	6,305
1900 - 1904	1,109	1,203	1,915	1,068	1,157	6,453
1904 - 1909	1,109	1,203	1,915	1,247	1,157	6,632
1909 - 1913	1,141	1,233	1,986	1,276	1,157	6,794
Km. predicted:	1,153	1,267	2,070	2,530	-	

Notes: The 2530 km of predicted category-4 lines include the 1000 km added to this category by the Legge 27 aprile 1885 n. 3048. Authors' elaborations based on the data by Ciccarelli and Groote (2017).

Table A.2. Summary Statistics on District-Level Voting

	Mean	*Standard Deviation*	*Number of districts*
1876 elections (2-12 November 1876)			
Population	50,579	11,544	508
Franchise	0.027	0.038	508
Turnout	0.637	0.137	508
1880 elections (16-23 May 1880)			
Population	52,098	12,156	508
Franchise	0.027	0.035	508
Turnout	0.651	0.130	508
1882 elections (29 October-5 November 1882)			
Population	206,823	62,485	135
Franchise	0.076	0.031	135
Turnout	0.624	0.123	135
1886 elections (23-30 May 1886)			
Population	212,181	65,621	135
Franchise	0.088	0.034	135
Turnout	0.604	0.135	135

Notes: Authors' elaborations based on the data by Corbetta and Piretti (2009).

Table A.3. Summary Statistics on Municipality-Level Population

Year	*Mean*	*S.D.*	*Min*	*Max*
1861	3,314	9,546	56	484,026
1871	3,539	10,113	59	489,008
1881	3,754	11,270	60	535,206
1901	4,273	14,425	56	621,213
1911	4,647	17,393	58	751,211
1921	4,990	20,440	58	859,629
1931	5,202	23,022	93	960,660
1936	5,376	25,794	116	1,150,338
1951	6,027	31,779	74	1,651,393
1961	6,420	39,942	90	2,187,682
1971	6,864	46,507	51	2,781,385
1981	7,174	46,269	32	2,839,638
1991	7,196	43,324	10	2,775,250

Notes: Authors' elaborations based on the data by Sistema Statistico Nazionale (1994).

Table A.4. Baccarini Law's Railway Projects and 1876 District-Level Elections
Regression Discontinuity Estimates: Controls' Coefficients

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable:	*log(km) dist. from projects*		*10 km proximity to projects*		*5 km proximity to projects*	
RD polynomial order:	3rd	2nd	3rd	2nd	3rd	2nd
Margin:	-	± 5%	-	± 5%	-	± 5%
Government-party win in district	-0.3578***	-0.3594**	0.1977**	0.2690**	0.2206***	0.3581***
	(0.1263)	(0.1804)	(0.0797)	(0.1199)	(0.0694)	(0.0972)
Log population density 1871	-0.1186***	-0.0089	0.0563***	-0.0511**	0.0578***	-0.0094
	(0.0200)	(0.0353)	(0.0119)	(0.0221)	(0.0111)	(0.0209)
Post office in 1871	0.0008	0.0316	0.0168	0.0115	-0.0067	-0.0040
	(0.0245)	(0.0332)	(0.0146)	(0.0259)	(0.0138)	(0.0240)
Telegraph office in 1871	-0.1746***	-0.0574	0.0455**	0.0237	0.0750***	0.0096
	(0.0381)	(0.0554)	(0.0202)	(0.0350)	(0.0194)	(0.0311)
Railway station in 1871	0.1442***	-0.0615	-0.0810***	0.0016	-0.0660***	0.0388
	(0.0448)	(0.0629)	(0.0262)	(0.0437)	(0.0238)	(0.0374)
Sea port in 1871	-0.3104*	-0.4270	0.1065	0.1849	0.1529**	0.1541
	(0.1774)	(0.3077)	(0.0682)	(0.1420)	(0.0732)	(0.1841)
N. secondary schools and libraries	-0.0236	-0.1034**	0.0091	0.0647***	0.0203**	0.0884***
	(0.0190)	(0.0418)	(0.0096)	(0.0186)	(0.0102)	(0.0204)
Terrain ruggedness	-0.1027	0.3581*	0.1475**	0.0552	0.1309*	-0.3394***
	(0.1219)	(0.1934)	(0.0716)	(0.1261)	(0.0694)	(0.1138)
Log land area	-0.0405**	-0.0036	0.0698***	0.0116	0.0575***	0.0157
	(0.0174)	(0.0269)	(0.0100)	(0.0181)	(0.0095)	(0.0164)
Coast	0.1565***	0.1516**	-0.1034***	-0.0876**	-0.0952***	-0.0399
	(0.0430)	(0.0694)	(0.0234)	(0.0400)	(0.0217)	(0.0391)
Elevation	0.9351***	0.5060**	-0.4457***	-0.2989*	-0.4779***	0.0395
	(0.1214)	(0.2021)	(0.0767)	(0.1778)	(0.0709)	(0.1359)
Market access	-1.0660***	-0.6742	0.7041***	0.2755	0.3790***	0.0295
	(0.2764)	(0.6536)	(0.1167)	(0.4346)	(0.1187)	(0.3904)
Adjusted R^2	0.517	0.746	0.262	0.531	0.204	0.465
Observations	6,957	1,471	6,957	1,471	6,957	1,471
Number of electoral district	458	102	458	102	458	102
Municipality-level controls	✓	✓	✓	✓	✓	✓
Province FE	✓	✓	✓	✓	✓	✓

Notes: The table reports reports RD estimates. The unit of observation is a municipality. The dependent variable is the distance in log(km) from the railway projects in columns (1)-(2); a binary indicator for being in a 10 km proximity to the railway projects in columns (3)-(4); a binary indicator for being in a 5 km proximity to the railway projects in columns (5)-(6). The distance and proximity measures are based on least cost paths connecting the focal points indicated by the Baccarini Law. The explanatory variable indicates a government-party win in the electoral district, with 3rd-order polynomials on the margin of victory being employed in odd-numbered columns and 2nd order polynomials in even-numbered columns. In even-numbered columns, the sample is limited to electoral districts where the government-party candidate's vote share was within a 5% distance of the 50% threshold needed for election. Municipality-level controls include: log population density in 1871, presence of post office, telegraph, port, railway or railway station on the territory in 1871, total number of secondary schools and libraries in 1863, market access, terrain ruggedness, agricultural suitability, log land area, elevation and presence of a coast. All specifications employ province fixed effects. Standard errors adjusted for spatial correlation, based on a 20 km window, in parenthesis. ***, **, and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

Table A.5. Balance Test across Marginal Districts in 1876

	(1) *Gov. win*	(2) *Gov. loss*	(3) *Difference*
Log population density in 1871	4.6714	4.7117	0.0403
Post office in 1871	0.4716	0.3805	-0.0911
Telegraph office in 1871	0.2371	0.1885	-0.0486
Railway station in 1871	0.1567	0.1132	-0.0435
Sea port in 1871	0.0113	0.0000	-0.0113
Number of secondary schools and libraries in 1863	0.1372	0.1835	0.0463
Market access	0.4607	0.5371	0.0765
Wheat suitability	0.3755	0.3483	-0.0273
Cereals suitability	0.3086	0.3177	0.0091
Rice suitability	0.0393	0.0653	0.0260
Cotton suitability	0.2541	0.2004	-0.0538
Barley suitability	0.3812	0.3527	-0.0285
Rye suitability	0.3957	0.3716	-0.0241
Olive suitability	0.4267	0.3136	-0.1130**
Citrus suitability	0.2752	0.0473	-0.2279***
Oat suitability	0.3810	0.3498	-0.0313
Bean suitability	0.3505	0.3214	-0.0291
Terrain ruggedness	0.2202	0.2279	0.0077
Log land area	3.3642	3.2655	-0.0987
Elevation (m)	312.4882	324.4631	11.9750
Coast	0.1091	0.0322	-0.0769

Notes: Balance test of municipality characteristics across marginal electoral districts. Column (1) reports mean values in electoral districts won by the government party with a vote share margin within 5%. Column (2) reports mean values in electoral districts lost by the government party with a vote share margin within 5%. Column (3) reports the difference in means, with significance stars based on a t-test on the equality of means. ***, **, and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

Table A.6. Baccarini Law's Railway Projects and 1876 District-Level Elections
Regression Discontinuity Estimates: Contemporary Controls

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable:	*log(km) dist. from projects*		*10 km proximity to projects*		*5 km proximity to projects*	
RD polynomial order:	3rd	2nd	3rd	2nd	3rd	2nd
Margin:	-	± 5%	-	± 5%	-	± 5%
Government-party win in district	-0.3210***	-0.3841**	0.1820**	0.2870**	0.2066***	0.3706***
	(0.1241)	(0.1804)	(0.0780)	(0.1163)	(0.0688)	(0.0961)
Adjusted R^2	0.523	0.747	0.262	0.535	0.200	0.465
Observations	6,801	1,464	6,801	1,464	6,801	1,464
Number of electoral district	458	102	458	102	458	102
Municipality-level controls	✓	✓	✓	✓	✓	✓
Province FE	✓	✓	✓	✓	✓	✓

Notes: The table reports reports RD estimates. The unit of observation is a municipality. The dependent variable is the distance in log(km) from the railway projects in columns (1)-(2); a binary indicator for being in a 10 km proximity to the railway projects in columns (3)-(4); a binary indicator for being in a 5 km proximity to the railway projects in columns (5)-(6). The distance and proximity measures are based on least cost paths connecting the focal points indicated by the Baccarini Law. The explanatory variable indicates a government-party win in the electoral district, with 3rd-order polynomials on the margin of victory being employed in odd-numbered columns and 2nd order polynomials in even-numbered columns. In even-numbered columns, the sample is limited to electoral districts where the government-party candidate's vote share was within a 5% distance of the 50% threshold needed for election. Municipality-level controls include: log population density in 1871, presence of post office, telegraph, port, railway or railway station on the territory in 1871, total number of secondary schools and libraries in 1863, market access, terrain ruggedness, agricultural suitability, log land area, elevation, presence of a coast, quality and quantity of water available, percentage of roads with sewage system, percentage of houses with toilets, per capita number of doctors, per capita number of farmacies, per capita number of hospital beds, number of years with registered cases of cholera, per capita municipal budget measures on tax revenue and expenditures. All specifications employ province fixed effects. Standard errors adjusted for spatial correlation, based on a 20 km window, in parenthesis. ***, **, and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

Table A.7. Baccarini Law's Railway Projects and 1876 District-Level Elections
Regression Discontinuity Estimates: Different Clustering Methods

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable:	*log(km) dist. from projects*		*10 km proximity to projects*		*5 km proximity to projects*	
RD polynomial order:	3rd	2nd	3rd	2nd	3rd	2nd
Margin:	-	± 5%	-	± 5%	-	± 5%
Government-party win in district	-0.3578	-0.3594	0.1977	0.2690	0.2206	0.3581
District cluster s.e.	(0.1603)**	(0.2062)*	(0.0981)**	(0.1319)**	(0.0861)**	(0.1090)***
District-Line double-cluster s.e.	[0.1481]**	[0.1616]**	[0.0836]**	[0.0786]***	[0.1055]**	[0.1174]***
Spatially-adjusted s.e. - 50km	{0.1366}***	{0.2168}*	{0.0829}**	{0.1476}*	{0.0797}***	{0.1195}***
Adjusted R^2	0.517	0.746	0.262	0.531	0.204	0.465
Observations	6,957	1,471	6,957	1,471	6,957	1,471
Number of electoral district	458	102	458	102	458	102
Municipality-level controls	✓	✓	✓	✓	✓	✓
Province FE	✓	✓	✓	✓	✓	✓

Notes: The table reports reports RD estimates. The unit of observation is a municipality. The dependent variable is the distance in log(km) from the railway projects in columns (1)-(2); a binary indicator for being in a 10 km proximity to the railway projects in columns (3)-(4); a binary indicator for being in a 5 km proximity to the railway projects in columns (5)-(6). The distance and proximity measures are based on least cost paths connecting the focal points indicated by the Baccarini Law. The explanatory variable indicates a government-party win in the electoral district, with 3rd-order polynomials on the margin of victory being employed in odd-numbered columns and 2nd order polynomials in even-numbered columns. In even-numbered columns, the sample is limited to electoral districts where the government-party candidate's vote share was within a 5% distance of the 50% threshold needed for election. Municipality-level controls include: log population density in 1871, presence of post office, telegraph, port, railway or railway station on the territory in 1871, total number of secondary schools and libraries in 1863, market access, terrain ruggedness, agricultural suitability, log land area, elevation and presence of a coast. All specifications employ province fixed effects. In parenthesis are robust standard errors clustered by electoral district. In square brackets are robust standard errors double-clustered by electoral district and railway line. In curly brackets are standard errors adjusted for spatial correlation based on a 50 km window. ***, **, and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

Table A.8. Implementation of Baccarini Law's Railway Projects and 1880 District-Level Elections: Regression Discontinuity Estimates

	(1)	(2)	(3)	(4)
Dependent variable:	*Municipality obtains rail during legislature*			
Proximity to projects:	10 km		5 km	
RD polynomial order:	3rd	2nd	3rd	2nd
Margin:	-	± 5%	-	± 5%
Government-party win in district	-0.0391	0.2338	-0.0622	0.6238
	(0.0371)	(0.1598)	(0.0709)	(0.4354)
Adjusted R^2	0.268	0.282	0.287	0.325
Observations	2,774	650	1,727	439
Number of electoral district	298	75	243	61
Municipality-level controls	✓	✓	✓	✓
Province FE	✓	✓	✓	✓

Notes: The table reports reports RD estimates. The unit of observation is a municipality. The dependent variable indicates the passage of a railway on the municipality territory, which construction was contracted out during the 1880 legislature. The explanatory variable indicates a government-party win in the electoral district, with 3rd-order polynomials on the margin of victory being employed in odd-numbered columns and 2nd order polynomials in even-numbered columns. Columns (1)-(2) employ the sample of municipalities in a 10 km proximity of the railway projects, while columns (3)-(4) employ the sample of municipalities a 5 km proximity of the railway projects. The proximity measures are based on least cost paths connecting the focal points indicated by the Baccarini Law. In even-numbered columns, the sample is limited to electoral districts where the government-party candidate's vote share was within a 5% distance of the 50% threshold needed for election. Municipality-level controls include: log population density in 1871, presence of post office, telegraph, port, railway or railway station on the territory in 1871, total number of secondary schools and libraries in 1863, market access, terrain ruggedness, agricultural suitability, log land area, elevation and presence of a coast. All specifications employ province fixed effects. Standard errors adjusted for spatial correlation, based on a 20 km window, in parenthesis. ***, **, and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

Table A.9. Implementation of Baccarini Law's Railway Projects and 1880 Municipality-Level Electoral Outcomes: Controls' Coefficients

	(1)	(2)
Dependent variable:	*Municipality obtains rail during legislature*	
Proximity to projects:	10 km	5 km
Margin of victory:	$\leq$ 5%	$\leq$ 5%
Winner share in municipality	-0.0172	-0.0416
× Opposition-party win in district	(0.0239)	(0.0317)
Winner share in municipality	0.0568***	0.0732***
× Government-party win in district	(0.0153)	(0.0187)
Log population density 1871	0.0754**	0.1263***
	(0.0332)	(0.0432)
Post office in 1871	0.0195	-0.0005
	(0.0230)	(0.0349)
Telegraph office in 1871	0.0358	0.0344
	(0.0647)	(0.0770)
Railway station in 1871	-0.2180***	-0.1641*
	(0.0672)	(0.0900)
Sea port in 1871	-0.5599***	-0.5658***
	(0.1859)	(0.1976)
N. secondary schools and libraries	-0.0323	-0.0598
	(0.0476)	(0.0553)
Terrain ruggedness	0.0195	0.0201
	(0.1148)	(0.1328)
Log land area	0.0324	0.0664*
	(0.0281)	(0.0357)
Coast	-0.1047**	-0.1064*
	(0.0402)	(0.0534)
Elevation	0.1620	0.1566
	(0.1583)	(0.1867)
Market access	-1.1318	-1.1746
	(0.7477)	(0.8168)
Adjusted R^2	0.325	0.368
Observations	609	420
Number of electoral district	75	61
Municipality-level controls	✓	✓
Province FE	✓	✓
District FE	✓	✓

Notes: The table reports reports OLS estimates. The unit of observation is a municipality. The dependent variable indicates the passage of a railway on the municipality territory, which construction was contracted out during the 1880 legislature. The main explanatory variables indicate the share of votes obtained in the municipality by the candidate elected in the electoral district, interacted with the party of the elected candidate. Column (1) employs the sample of municipalities in a 10 km proximity to the railway projects, while column (2) employs the sample of municipalities a 5 km proximity to the railway projects. The proximity measures are based on least cost paths connecting the focal points indicated by the Baccarini Law. The sample is restricted to municipalities belonging to districts where the candidate was elected with a margin of victory below 5%. Municipality-level controls include: log population density in 1871, presence of post office, telegraph, port, railway or railway station on the territory in 1871, total number of secondary schools and libraries in 1863, market access, terrain ruggedness, agricultural suitability, log land area, elevation and presence of a coast. All specifications employ province and district fixed effects. Standard errors adjusted for spatial correlation, based on a 20 km window, in parenthesis. ***, **, and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

Table A.10. Implementation of Baccarini Law's Railway Projects and 1882-86 Municipality-Level Electoral Outcomes: Controls' Coefficients

	(1)	(2)
Dependent variable:	*Municipality obtains rail during legislature*	
Proximity to projects:	10 km	5 km
Marginality percentile:	≤ 20th	≤ 20th
Last winner's share in municipality	0.0558	0.0493
× Opposition party	(0.0361)	(0.0489)
Last winner's share in municipality	0.0333***	0.0323**
× Government party	(0.0116)	(0.0162)
Log population density 1881	0.0232	0.0176
	(0.0228)	(0.0334)
Post office in 1871	-0.0091	-0.0108
	(0.0200)	(0.0282)
Telegraph office in 1871	0.0850**	0.0972*
	(0.0383)	(0.0497)
Railway station in 1871	-0.1172**	-0.1426*
	(0.0513)	(0.0798)
Sea port in 1871	-0.1321	-0.2352
	(0.1364)	(0.1451)
N. secondary schools and libraries	-0.0326	-0.0198
	(0.0207)	(0.0214)
Terrain ruggedness	0.2314*	0.2161
	(0.1303)	(0.1820)
Log land area	-0.0055	-0.0254
	(0.0185)	(0.0267)
Coast	0.1760***	0.1880***
	(0.0430)	(0.0516)
Elevation	-0.4726***	-0.6175***
	(0.1466)	(0.2133)
Market access	-0.5954***	-0.8443***
	(0.1989)	(0.2609)
Adjusted R^2	0.288	0.311
Observations	1,045	678
Number of electoral district	49	46
Municipality-level controls	✓	✓
Province FE	✓	✓
District FE	✓	✓

Notes: The table reports reports OLS estimates. The unit of observation is a municipality. The dependent variable indicates the passage of a railway on the municipality territory, which construction was contracted out during the 1882 and 1886 legislatures. The main explanatory variables indicate the share of total votes obtained in the municipality by the candidate elected in the last seat of the district, interacted with the party of the elected candidate. Column (1) employs the sample of municipalities in a 10 km proximity to the railway projects, while column (2) employs the sample of municipalities a 5 km proximity to the railway projects. The proximity measures are based on least cost paths connecting the focal points indicated by the Baccarini Law. The sample is restricted to municipalities in districts belonging to the top quintile of the marginality measure. Municipality-level controls include: log population density in 1881, presence of post office, telegraph, port, railway or railway station on the territory in 1871, total number of secondary schools and libraries in 1863, market access, terrain ruggedness, agricultural suitability, log land area, elevation and presence of a coast. All specifications employ province and district fixed effects. Standard errors adjusted for spatial correlation, based on a 20 km window, in parenthesis. ***, **, and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

Table A.11. Implementation of Baccarini Law's Railway Projects and 1880 Municipality-Level Electoral Outcomes: Exclude Large Municipalities

	(1)	(2)
Dependent variable:	*Municipality obtains rail during legislature*	
Proximity to projects:	10 km	5 km
Margin of victory:	$\leq$ 5%	$\leq$ 5%
	Panel A	
Winner share in municipality	0.0403***	0.0495**
	(0.0154)	(0.0199)
Adjusted R^2	0.363	0.416
	Panel B	
Winner share in municipality	-0.0141	-0.0370
$\times$ Opposition-party win in district	(0.0247)	(0.0322)
Winner share in municipality	0.0636***	0.0798***
$\times$ Government-party win in district	(0.0170)	(0.0217)
Adjusted R^2	0.370	0.425
Observations	561	385
Number of electoral district	75	61
Municipality-level controls	✓	✓
Province FE	✓	✓
District FE	✓	✓

Notes: The table reports reports OLS estimates. The unit of observation is a municipality. The dependent variable indicates the passage of a railway on the municipality territory, which construction was contracted out during the 1880 legislature. In Panel A the explanatory variable indicates the share of votes obtained in the municipality by the candidate elected in the electoral district. In Panel B the share of votes obtained in the municipality is interacted with the party of the elected candidate. Column (1) employs the sample of municipalities in a 10 km proximity to the railway projects, while column (2) employs the sample of municipalities a 5 km proximity to the railway projects. The proximity measures are based on least cost paths connecting the focal points indicated by the Baccarini Law. The sample is restricted to municipalities belonging to districts where the candidate was elected with a margin of victory below 5%. Municipalities above the 95th percentile of population are excluded. Municipality-level controls include: log population density in 1871, presence of post office, telegraph, port, railway or railway station on the territory in 1871, total number of secondary schools and libraries in 1863, market access, terrain ruggedness, agricultural suitability, log land area, elevation and presence of a coast. All specifications employ province and district fixed effects. Standard errors adjusted for spatial correlation, based on a 20 km window, in parenthesis. ***, **, and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

Table A.12. Implementation of Baccarini Law's Railway Projects and 1882-1886 Municipality-Level Electoral Outcomes: Exclude Large Municipalities

	(1)	(2)
Dependent variable:	*Municipality obtains rail during legislature*	
Proximity to projects:	10 km	5 km
Marginality percentile:	≤ 20th	≤ 20th
	Panel A	
Last winner's share in municipality	0.0324***	0.0308*
	(0.0116)	(0.0162)
Adjusted R^2	0.291	0.313
	Panel B	
Last winner's share in municipality	0.0492	0.0207
× Opposition party	(0.0345)	(0.0467)
Last winner's share in municipality	0.0293**	0.0322*
× Government party	(0.0118)	(0.0169)
Adjusted R^2	0.290	0.312
Observations	972	622
Number of electoral district	49	46
Municipality-level controls	✓	✓
Province FE	✓	✓
District FE	✓	✓

Notes: The table reports reports OLS estimates. The unit of observation is a municipality. The dependent variable indicates the passage of a railway on the municipality territory, which construction was contracted out during the 1882 and 1886 legislatures. Panel A employs the share of total votes obtained in the municipality by the candidate elected in the last seat of the district. In Panel B the share of votes obtained in the municipality is interacted with the party of the elected candidate. Column (1) employs the sample of municipalities in a 10 km proximity to the railway projects, while column (2) employs the sample of municipalities a 5 km proximity to the railway projects. The proximity measures are based on least cost paths connecting the focal points indicated by the Baccarini Law. The sample is restricted to municipalities in districts belonging to the top quintile of the marginality measure. Municipalities above the 95th percentile of population are excluded. Municipality-level controls include: log population density in 1881, presence of post office, telegraph, port, railway or railway station on the territory in 1871, total number of secondary schools and libraries in 1863, market access, terrain ruggedness, agricultural suitability, log land area, elevation and presence of a coast. All specifications employ province and district fixed effects. Standard errors adjusted for spatial correlation, based on a 20 km window, in parenthesis. ***, **, and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

TABLE A.13. IMPLEMENTATION OF BACCARINI LAW'S RAILWAY PROJECTS AND 1880 MUNICIPALITY-LEVEL ELECTORAL OUTCOMES: RAILWAY LINE FE

	(1)	(2)
Dependent variable:	*Municipality obtains rail during legislature*	
Proximity to projects:	10 km	5 km
Margin of victory:	$\leq$ 5%	$\leq$ 5%
	Panel A	
Winner share in municipality	0.0379***	0.0436**
	(0.0134)	(0.0169)
Adjusted R^2	0.309	0.342
	Panel B	
Winner share in municipality	-0.0060	-0.0388
× Opposition-party win in district	(0.0297)	(0.0435)
Winner share in municipality	0.0494***	0.0608***
× Government-party win in district	(0.0148)	(0.0184)
Adjusted R^2	0.311	0.346
Observations	609	420
Number of electoral district	75	61
Municipality-level controls	✓	✓
Railway line FE	✓	✓
District FE	✓	✓

Notes: The table reports reports OLS estimates. The unit of observation is a municipality. The dependent variable indicates the passage of a railway on the municipality territory, which construction was contracted out during the 1880 legislature. In Panel A the explanatory variable indicates the share of votes obtained in the municipality by the candidate elected in the electoral district. In Panel B the share of votes obtained in the municipality is interacted with the party of the elected candidate. Column (1) employs the sample of municipalities in a 10 km proximity to the railway projects, while column (2) employs the sample of municipalities a 5 km proximity to the railway projects. The proximity measures are based on least cost paths connecting the focal points indicated by the Baccarini Law. The sample is restricted to municipalities belonging to districts where the candidate was elected with a margin of victory below 5%. Municipality-level controls include: log population density in 1871, presence of post office, telegraph, port, railway or railway station on the territory in 1871, total number of secondary schools and libraries in 1863, market access, terrain ruggedness, agricultural suitability, log land area, elevation and presence of a coast. All specifications employ railway line and district fixed effects. Standard errors adjusted for spatial correlation, based on a 20 km window, in parenthesis. ***, **, and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

Table A.14. Implementation of Baccarini Law's Railway Projects and 1882-1886 Municipality-Level Electoral Outcomes: Railway Line FE

	(1)	(2)
Dependent variable:	*Municipality obtains rail during legislature*	
Proximity to projects:	10 km	5 km
Marginality percentile:	$\leq$ 20th	$\leq$ 20th
	Panel A	
Last winner's share in municipality	0.0367***	0.0325**
	(0.0141)	(0.0162)
Adjusted R^2	0.257	0.344
	Panel B	
Last winner's share in municipality	0.0551	0.0567
× Opposition party	(0.0339)	(0.0411)
Last winner's share in municipality	0.0336**	0.0288*
× Government party	(0.0151)	(0.0174)
Adjusted R^2	0.256	0.343
Observations	1,045	678
Number of electoral district	49	46
Municipality-level controls	✓	✓
Railway line FE	✓	✓
District FE	✓	✓

Notes: The table reports reports OLS estimates. The unit of observation is a municipality. The dependent variable indicates the passage of a railway on the municipality territory, which construction was contracted out during the 1882 and 1886 legislatures. Panel A employs the share of total votes obtained in the municipality by the candidate elected in the last seat of the district. In Panel B the share of votes obtained in the municipality is interacted with the party of the elected candidate. Column (1) employs the sample of municipalities in a 10 km proximity to the railway projects, while column (2) employs the sample of municipalities a 5 km proximity to the railway projects. The proximity measures are based on least cost paths connecting the focal points indicated by the Baccarini Law. The sample is restricted to municipalities in districts belonging to the top quintile of the marginality measure. Municipality-level controls include: log population density in 1881, presence of post office, telegraph, port, railway or railway station on the territory in 1871, total number of secondary schools and libraries in 1863, market access, terrain ruggedness, agricultural suitability, log land area, elevation and presence of a coast. All specifications employ railway line and district fixed effects. Standard errors adjusted for spatial correlation, based on a 20 km window, in parenthesis. ***, **, and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

Table A.15. Implementation of Baccarini Law's Railway Projects and 1880 Municipality-Level Electoral Outcomes: Exclude Incumbents

	(1)	(2)
Dependent variable:	*Municipality obtains rail during legislature*	
Proximity to projects:	10 km	5 km
Margin of victory:	≤ 5%	≤ 5%
	Panel A	
Winner share in municipality	0.0366**	0.0477**
	(0.0160)	(0.0209)
Adjusted R^2	0.286	0.326
	Panel B	
Winner share in municipality	-0.0232	-0.0551
× Opposition-party win in district	(0.0244)	(0.0347)
Winner share in municipality	0.0607***	0.0804***
× Government-party win in district	(0.0171)	(0.0217)
Adjusted R^2	0.294	0.341
Observations	543	370
Number of electoral district	60	48
Municipality-level controls	✓	✓
Province FE	✓	✓
District FE	✓	✓

Notes: The table reports reports OLS estimates. The unit of observation is a municipality. The dependent variable indicates the passage of a railway on the municipality territory, which construction was contracted out during the 1880 legislature. In Panel A the explanatory variable indicates the share of votes obtained in the municipality by the candidate elected in the electoral district. In Panel B the share of votes obtained in the municipality is interacted with the party of the elected candidate. Column (1) employs the sample of municipalities in a 10 km proximity to the railway projects, while column (2) employs the sample of municipalities a 5 km proximity to the railway projects. The proximity measures are based on least cost paths connecting the focal points indicated by the Baccarini Law. The sample is restricted to municipalities belonging to districts where the candidate was elected with a margin of victory below 5%. Municipalities belonging to districts carried by an incumbent are excluded. Municipality-level controls include: log population density in 1871, presence of post office, telegraph, port, railway or railway station on the territory in 1871, total number of secondary schools and libraries in 1863, market access, terrain ruggedness, agricultural suitability, log land area, elevation and presence of a coast. All specifications employ province and district fixed effects. Standard errors adjusted for spatial correlation, based on a 20 km window, in parenthesis. ***, **, and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

Table A.16. Implementation of Baccarini Law's Railway Projects and 1882-1886 Municipality-Level Electoral Outcomes: Exclude Incumbents

	(1)	(2)
Dependent variable:	*Municipality obtains rail during legislature*	
Proximity to projects:	10 km	5 km
Marginality percentile:	$\leq$ 20th	$\leq$ 20th
	Panel A	
Last winner's share in municipality	0.0367***	0.0343**
	(0.0116)	(0.0158)
Adjusted R^2	0.296	0.308
	Panel B	
Last winner's share in municipality	0.0536	0.0461
× Opposition party	(0.0359)	(0.0489)
Last winner's share in municipality	0.0335***	0.0325**
× Government party	(0.0116)	(0.0161)
Adjusted R^2	0.296	0.307
Observations	980	625
Number of electoral district	47	44
Municipality-level controls	✓	✓
Province FE	✓	✓
District FE	✓	✓

Notes: The table reports reports OLS estimates. The unit of observation is a municipality. The dependent variable indicates the passage of a railway on the municipality territory, which construction was contracted out during the 1882 and 1886 legislatures. Panel A employs the share of total votes obtained in the municipality by the candidate elected in the last seat of the district. In Panel B the share of votes obtained in the municipality is interacted with the party of the elected candidate. Column (1) employs the sample of municipalities in a 10 km proximity to the railway projects, while column (2) employs the sample of municipalities a 5 km proximity to the railway projects. The proximity measures are based on least cost paths connecting the focal points indicated by the Baccarini Law. The sample is restricted to municipalities in districts belonging to the top quintile of the marginality measure. Municipalities belonging to districts where the last seat is carried by an incumbent are excluded. Municipality-level controls include: log population density in 1881, presence of post office, telegraph, port, railway or railway station on the territory in 1871, total number of secondary schools and libraries in 1863, market access, terrain ruggedness, agricultural suitability, log land area, elevation and presence of a coast. All specifications employ province and district fixed effects. Standard errors adjusted for spatial correlation, based on a 20 km window, in parenthesis. ***, **, and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

Table A.17. Implementation of Baccarini Law's Railway Projects and 1880 Municipality-Level Electoral Outcomes: Contemporary Controls

	(1)	(2)
Dependent variable:	*Municipality obtains rail during legislature*	
Proximity to projects:	10 km	5 km
Margin of victory:	$\leq$ 5%	$\leq$ 5%
	Panel A	
Winner share in municipality	0.0407***	0.0482***
	(0.0142)	(0.0177)
Adjusted R^2	0.323	0.355
	Panel B	
Winner share in municipality	-0.0140	-0.0421
$\times$ Opposition-party win in district	(0.0252)	(0.0333)
Winner share in municipality	0.0623***	0.0776***
$\times$ Government-party win in district	(0.0153)	(0.0188)
Adjusted R^2	0.329	0.366
Observations	586	406
Number of electoral district	75	61
Municipality-level controls	✓	✓
Province FE	✓	✓
District FE	✓	✓

Notes: The table reports reports OLS estimates. The unit of observation is a municipality. The dependent variable indicates the passage of a railway on the municipality territory, which construction was contracted out during the 1880 legislature. In Panel A the explanatory variable indicates the share of votes obtained in the municipality by the candidate elected in the electoral district. In Panel B the share of votes obtained in the municipality is interacted with the party of the elected candidate. Column (1) employs the sample of municipalities in a 10 km proximity to the railway projects, while column (2) employs the sample of municipalities a 5 km proximity to the railway projects. The proximity measures are based on least cost paths connecting the focal points indicated by the Baccarini Law. The sample is restricted to municipalities belonging to districts where the candidate was elected with a margin of victory below 5%. Municipality-level controls include: log population density in 1871, presence of post office, telegraph, port, railway or railway station on the territory in 1871, total number of secondary schools and libraries in 1863, market access, terrain ruggedness, agricultural suitability, log land area, elevation, presence of a coast, quality and quantity of water available, percentage of roads with sewage system, percentage of houses with toilets, per capita number of doctors, per capita number of farmacies, per capita number of hospital beds, number of years with registered cases of cholera, per capita municipal budget measures on tax revenue and expenditures. All specifications employ province and district fixed effects. Standard errors adjusted for spatial correlation, based on a 20 km window, in parenthesis. ***, **, and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

Table A.18. Implementation of Baccarini Law's Railway Projects and 1882-1886 Municipality-Level Electoral Outcomes: Contemporary Controls

	(1)	(2)
Dependent variable:	*Municipality obtains rail during legislature*	
Proximity to projects:	10 km	5 km
Marginality percentile:	≤ 20th	≤ 20th
	Panel A	
Last winner's share in municipality	0.0399***	0.0352**
	(0.0118)	(0.0161)
Adjusted R^2	0.297	0.331
	Panel B	
Last winner's share in municipality	0.0527	0.0415
× Opposition party	(0.0359)	(0.0442)
Last winner's share in municipality	0.0372***	0.0342**
× Government party	(0.0118)	(0.0170)
Adjusted R^2	0.297	0.330
Observations	971	623
Number of electoral district	49	46
Municipality-level controls	✓	✓
Province FE	✓	✓
District FE	✓	✓

Notes: The table reports reports OLS estimates. The unit of observation is a municipality. The dependent variable indicates the passage of a railway on the municipality territory, which construction was contracted out during the 1882 and 1886 legislatures. Panel A employs the share of total votes obtained in the municipality by the candidate elected in the last seat of the district. In Panel B the share of votes obtained in the municipality is interacted with the party of the elected candidate. Column (1) employs the sample of municipalities in a 10 km proximity to the railway projects, while column (2) employs the sample of municipalities a 5 km proximity to the railway projects. The proximity measures are based on least cost paths connecting the focal points indicated by the Baccarini Law. The sample is restricted to municipalities in districts belonging to the top quintile of the marginality measure. Municipality-level controls include: log population density in 1881, presence of post office, telegraph, port, railway or railway station on the territory in 1871, total number of secondary schools and libraries in 1863, market access, terrain ruggedness, agricultural suitability, log land area, elevation, presence of a coast, quality and quantity of water available, percentage of roads with sewage system, percentage of houses with toilets, per capita number of doctors, per capita number of farmacies, per capita number of hospital beds, number of years with registered cases of cholera, per capita municipal budget measures on tax revenue and expenditures. All specifications employ province and district fixed effects. Standard errors adjusted for spatial correlation, based on a 20 km window, in parenthesis. ***, **, and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

Table A.19. Implementation of Baccarini Law's Railway Projects and 1880 Municipality-Level Electoral Outcomes: Different Clustering Methods

	(1)	(2)
Dependent variable:	*Municipality obtains rail during legislature*	
Proximity to projects:	10 km	5 km
Margin of victory:	$\leq$ 5%	$\leq$ 5%
	Panel A	
Winner share in municipality	0.0367	0.0467
District cluster s.e.	(0.0172)**	(0.0204)**
District-Line double-cluster s.e.	[0.0144]**	[0.0169]***
Spatially-adjusted s.e. - 50km	{0.0149}**	{0.0178}***
Adjusted R^2	0.319	0.358
	Panel B	
Winner share in municipality × Opposition-party win	-0.0172	-0.0416
District cluster s.e.	(0.0263)	(0.0346)
District-Line double-cluster s.e.	[0.0254]	[0.0334]
Spatially-adjusted s.e. - 50km	{0.0247}	{0.0333}
Winner share in municipality × Government-party win	0.0568	0.0732
District cluster s.e.	(0.0166)***	(0.0194)***
District-Line double-cluster s.e.	[0.0157]***	[0.0168]***
Spatially-adjusted s.e. - 50km	{0.0151}***	{0.0174}***
Adjusted R^2	0.325	0.368
Observations	609	420
Number of electoral district	75	61
Municipality-level controls	✓	✓
Province FE	✓	✓
District FE	✓	✓

Notes: The table reports reports OLS estimates. The unit of observation is a municipality. The dependent variable indicates the passage of a railway on the municipality territory, which construction was contracted out during the 1880 legislature. In Panel A the explanatory variable indicates the share of votes obtained in the municipality by the candidate elected in the electoral district. In Panel B the share of votes obtained in the municipality is interacted with the party of the elected candidate. Column (1) employs the sample of municipalities in a 10 km proximity to the railway projects, while column (2) employs the sample of municipalities a 5 km proximity to the railway projects. The proximity measures are based on least cost paths connecting the focal points indicated by the Baccarini Law. The sample is restricted to municipalities belonging to districts where the candidate was elected with a margin of victory below 5%. Municipality-level controls include: log population density in 1871, presence of post office, telegraph, port, railway or railway station on the territory in 1871, total number of secondary schools and libraries in 1863, market access, terrain ruggedness, agricultural suitability, log land area, elevation and presence of a coast. All specifications employ province and district fixed effects. In parenthesis are robust standard errors clustered by electoral district. In square brackets are robust standard errors double-clustered by electoral district and railway line. In curly brackets are standard errors adjusted for spatial correlation based on a 50 km window. ***, **, and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

Table A.20. Implementation of Baccarini Law's Railway Projects and 1882-1886 Municipality-Level Electoral Outcomes: Different Clustering Methods

	(1)	(2)
Dependent variable:	*Municipality obtains rail during legislature*	
Proximity to projects:	10 km	5 km
Marginality percentile:	≤ 20th	≤ 20th
	Panel A	
Last winner's share in municipality	0.0369	0.0346
District cluster s.e.	(0.0137)***	(0.0194)*
District-Line double-cluster s.e.	[0.0128]***	[0.0171]**
Spatially-adjusted s.e. - 50km	{0.0126}***	{0.0172}**
Adjusted R^2	0.289	0.312
	Panel B	
Last winner's share in municipality × Opposition party	0.0558	0.0493
District cluster s.e.	(0.0501)	(0.0676)
District-Line double-cluster s.e.	[0.0558]	[0.0736]
Spatially-adjusted s.e. - 50km	{0.0457}	{0.0611}
Last winner's share in municipality × Government party	0.0333	0.0323
District cluster s.e.	(0.0123)***	(0.0193)*
District-Line double-cluster s.e.	[0.0078]***	[0.0103]***
Spatially-adjusted s.e. - 50km	{0.0116}***	{0.0170}*
Adjusted R^2	0.288	0.311
Observations	1045	678
Number of electoral district	49	46
Municipality-level controls	✓	✓
Province FE	✓	✓
District FE	✓	✓

Notes: The table reports reports OLS estimates. The unit of observation is a municipality. The dependent variable indicates the passage of a railway on the municipality territory, which construction was contracted out during the 1882 and 1886 legislatures. Panel A employs the share of total votes obtained in the municipality by the candidate elected in the last seat of the district. In Panel B the share of votes obtained in the municipality is interacted with the party of the elected candidate. Column (1) employs the sample of municipalities in a 10 km proximity to the railway projects, while column (2) employs the sample of municipalities a 5 km proximity to the railway projects. The proximity measures are based on least cost paths connecting the focal points indicated by the Baccarini Law. The sample is restricted to municipalities in districts belonging to the top quintile of the marginality measure. Municipality-level controls include: log population density in 1881, presence of post office, telegraph, port, railway or railway station on the territory in 1871, total number of secondary schools and libraries in 1863, market access, terrain ruggedness, agricultural suitability, log land area, elevation and presence of a coast. All specifications employ province and district fixed effects. In parenthesis are robust standard errors clustered by electoral district. In square brackets are robust standard errors double-clustered by electoral district and railway line. In curly brackets are standard errors adjusted for spatial correlation based on a 50 km window. ***, **, and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

Table A.21. Long-Run Impact of Baccarini Law's Railway Expansion on Municipalities' Population: Placebo 1861-1881

	Dependent variable: *Log population*						
	OLS						IV
Proximity to railways:	-	-	-	10 km	10 km	10 km	10 km
Marginal districts	-	-	-	-	Yes	Yes	Yes
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Railway access	0.4718***	0.0032	0.0046	0.0033	0.0095	0.0089	0.0363
	(0.0513)	(0.0038)	(0.0039)	(0.0036)	(0.0088)	(0.0074)	(0.0270)
Observations	18,631	18,167	18,167	7,736	1,504	1,504	1,480
Adjusted R^2	0.040	0.993	0.994	0.993	0.992	0.993	0.992
KP F-stat							7.46
Year FE	✓	✓					
Municipality-level controls		✓	✓	✓	✓	✓	✓
Province × year FE			✓	✓	✓	✓	✓
District × year FE						✓	✓

Notes: Table presents panel estimates regressing population on railway access. The unit of observation is a municipality. The dependent variable is the log of municipality population from the 1861, 1871 and 1881 censuses. The explanatory variable is a dummy denoting municipalities reached by one of the Baccarini Law railways. Columns (1) and (2) employ year fixed effects. Column (2) adds municipality-level pre-determined controls. Column (3) adds province-by-year fixed effects. Column (4) restricts the sample to municipalities in a 10 km proximity of the railways. Column (5) further restricts the sample to municipalities that belonged to marginal electoral districts when the railway construction was contracted out. Column (6) adds district-by-year fixed effects. IV estimates in column (7) instrument railway access with the share of votes obtained in the municipality by the candidate elected in the electoral district if construction of the railway was contracted out in the 1880 parliament, and with the share of votes obtained in the municipality by the candidate elected in the last seat of the district if construction of the railway was contracted out in the 1882 or 1886 parliaments. Municipality-level controls include: log population in 1871, presence of post office, telegraph, port, railway or railway station on the territory, total number of secondary schools and libraries, terrain ruggedness, agricultural suitability, log land area, elevation, presence of a coast, quality and quantity of water available, percentage of roads with sewage system, percentage of houses with toilets, per capita number of doctors, per capita number of farmacies, per capita number of hospital beds, number of years with registered cases of cholera, per capita municipal budget measures on tax revenue and expenditures. Robust standard errors, clustered by circondario and year, are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.