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Abstract

We analyze the local-level demographic effects of the 1865 Italian "Lanza administrative reform". This reform established the skeleton and functioning of the entire public administration in the Kingdom of Italy, unified in 1861, by re-assigning administrative functions to municipalities throughout the country. We focus on municipality-level population dynamics over the period 1861-2011, while also providing evidence of more recent local-level economic performance. We rely on 'generalized' difference-in-differences and matching techniques, and find that municipalities that emerged from the reform with new or increased administrative functions at supra-municipal level gained a population growth premium, persistent over time. Moreover, local labor market productivity increased during the early 2000s.

Keywords

Administrative reforms; local population growth; nation-building process; Italy.

JEL Codes

C31; N13; R11.

1. Introduction

The determinants of city formation and the processes driving urbanization, urban concentration, and changes in city size have been extensively studied in economic geography and urban economics. Since the pioneering work of Marshall (1890), scholars have emphasized the growth-enhancing powers of the geographic concentration of population and economic activities in urban agglomerations. Unsurprisingly, cities have been seen traditionally as one of the most important drivers of economic growth (e.g., Duranton, 2015).

Historically, the location of early cities was influenced by first-nature geographical factors such as soil fertility and proximity to rivers or coasts (e.g., de Vries, 1984; Bairoch, 1988; Konishi, 2000; Motamed et al., 2014). In the modern age, in many Western countries, economic development and structural change – in particular, industrialization and growth in services – have played a key role in driving urban concentration and shaping the role of individual cities within the urban hierarchy (e.g., Henderson, 2003; Michaels et al., 2012; Gollin et al., 2016; Zeng et al., 2016; Accetturo et al., 2019). Indeed, as a country undergoes economic development, people and workers tend to move from rural to urban areas, where they are generally employed in manufacturing and service activities (e.g., Henderson, 2003; Michaels et al., 2012). This means that urbanization is generally accompanied by industrialization, which, in turn, incentivizes the co-location of other firms – and the establishment of new ones – in a city through mechanisms such as knowledge spillover, labor market pooling, proximity to suppliers, increasing returns to scale, reduction of transport costs, the availability of infrastructure and market accessibility (e.g., Duranton and Puga, 2001; Duranton and Puga, 2004; Rosenthal and Strange, 2004). These factors have been broadly identified as determinants of a productivity premium for large and high-density cities compared to small and low-density cities, peripheral towns and rural areas (e.g., Glaeser et al., 1992; Henderson et al., 1995; Ciccone and Hall, 1996; Fujita et al., 1999; Henderson, 2010; Puga, 2010; Camagni et al., 2014, 2016).

Besides industrialization, urbanization and the role of cities are shaped by other market-related forces, very often in tandem with geographical factors. Indeed, spatial inhomogeneity has been

recognized as a key feature determining the economic geography of a country (e.g., Anas et al., 1998; Krugman, 1991a; Behrens, 2007; Nunn and Puga, 2012). In this respect, a key role is played by the spatial concentration of natural resources and skills in specific locations (e.g., Glaeser et al., 1995; Black and Henderson, 1999; Gollin et al., 2016), as well as by the presence of trading facilities (e.g., harbors and railroads) in periods of national trade growth (e.g., Beeson et al., 2001; da Mata et al., 2007). In addition, differences in transport costs considerably influence the spatial structure of a country in terms of location, density, network, and hierarchy of cities. On the one hand, theory predicts higher urban concentration when transport is more costly, so firms tend to locate close to each other in order to overcome these costs, and this leads to increases in city size and density and, consequently, to stronger roles of cities as economic centers in a country (e.g., Krugman, 1991b; Ades and Glaeser, 1995). On the other hand, high transport costs and city locations in countries with unfavorable geographical endowments for trade can lead to the formation of 'city hubs', which increase their importance in the national urban hierarchy by becoming central markets for trade (e.g., Krugman, 1993; Fujita and Mori, 1996; Konishi, 2000).[1]

In many Western countries, the role of the state (i.e., national governments) in the process of urban development has generally been limited to activities such as public transport, social services and public security (Liu et al., 2012; Zeng et al., 2016). However, the growth of a city and its role in a national urban hierarchy may also be established – or substantially reshaped – by administrative reforms that promote decentralization policies and increased governance at the local level (da Mata et al., 2007). Central governments may identify the administrative functions of each city, defining their role in the urban hierarchy of the country. Clearly, changes in the status of cities and, consequently, in their administrative functions may significantly affect the urbanization process. In other words, national governments can intervene by designing and shaping urbanization and city-

[1] For example, European cities such as Venice, Barcelona, Seville, Marseille, Amsterdam, and London, among others, exploited their advantageous locations to grow as either inter-regional or inter-continental harbor cities in the Early Modern Age, increasing their centrality in the national urban hierarchy by acting as commercial 'hubs' (e.g., Konishi, 2000; Antunes, 2010). Similarly, in the nineteenth century, in the United States, transport cost advantages made Chicago a 'gateway city' (Cronon, 1991).

making processes with positive effects on local development (e.g., Andini et al., 2017; Yin and Liu, 2017).

This process of state-oriented urbanization is generally defined in the recent urban economics and planning literature as 'administrative urbanization' (Liu et al., 2012). Recent scholarly work has investigated 'administrative urbanization' processes, particularly in China after the 1978 economic reforms. For example, Liu et al. (2012) analyze the process of city-making for Chinese small and medium-sized cities. Focusing on the inland city of Hebi in Henan province, they show that China's recent urban transformation process has been strongly shaped by the central government through both national urban policies and local administrative interventions. Similarly, Zeng et al. (2016) investigate the process of urbanization and administrative restructuring in the urban agglomeration of Wuhan in Central China. They analyze the influence of the administrative status of the city on urbanization, and find that changes in the administrative status at county level have had a significant role in shaping the process of urban development. Finally, Yin and Liu (2017), analyzing the case of Ordos city in the Inner Mongolia Autonomous Region, show that the local government has played a fundamental role in promoting the process of urbanization and local development through a set of administrative measures.

This suggests that the urban administrative hierarchy and its changes have had a positive effect on the processes of urbanization and local development in post-reform China. Indeed, since the 1980s, the country's decentralization policy has given greater autonomy to local governments, with additional administrative authority and flexibility, and more powers in terms of fiscal responsibility, land acquisition, and urban planning (Yin and Liu, 2017). The processes of local government-led administrative urbanization have had positive effects on population growth and local economic development.

While modern urbanization in post-reform China – as an example of 'administrative urbanization' – has been studied extensively, other cases are less well-known. An interesting case is provided by the birth of European nation-states in the mid-nineteenth century. Indeed, many European

countries, including Italy and Germany, went through a process of unification and the gradual formation of a national identity during the nineteenth century. This process of nation-building was accompanied by administrative reforms that established *ex novo* the functions of the public administration in the new country, from central government to local municipalities. Some of the administrative reforms affected the functional geography and urban hierarchy of the country, which, in turn, played a role in determining long-term population growth and local economic development.

This paper focuses on this under-researched yet significant factor in the urbanization process of Western countries by looking at the administrative reform that established the territorial organization of Italy immediately after unification in 1861. Specifically, we investigate the effect of Law No. 2248, passed by the Italian Parliament on 20 March 1865, on population growth in municipalities after the unification of the country in 1861 until 2011. The so-called "Lanza administrative reform", after the name of its proponent, established the framework of the Italian public administration in terms of local government bodies, and laid down the rules governing the functioning of the various territorial administrative units in the newly created Kingdom of Italy – i.e., provinces, districts, and municipalities. It assigned specific functions to the main administrative geographic units of the time – in 1861 there were 59 provinces, 193 districts, and about 7,000 municipalities. These functions concerned crucial aspects of citizens' lives, including public education, public health, safety, transport, and public works.[2]

The consequences of the Lanza reform on the administrative functions of cities and their population growth were not neutral. Some cities – whose endowment of facilities such as train stations, courthouses, hospitals, schools, prisons, and military barracks increased – rose in the Italian urban hierarchy. Moreover, by providing new services, these urban areas were able to attract people from the countryside and nearby smaller towns. The result was a significant growth in their population.

[2] Post-unification Italy was at the beginning of the demographic transition. The population was growing rapidly – from 25 million people in 1861 to 35 million 50 years later – and the urbanization rate increased from 19.6% in 1861 to 32.2% in 1921 (Carozzi and Mioni, 1970).

We rely on 'generalized' difference-in-differences and matching econometric techniques, and find that municipalities that emerged from the reform with new or increased administrative functions at supra-municipal level gained in population persistently over time. Moreover, we find a productivity premium at local labor market (LLM) level during the early 2000s.

By testing the effects of the 1865 administrative reform on the population growth of municipalities, we provide not only a complementary reading and better understanding of the dynamics of the Italian economy since the unification of the country, but also a historical example of 'administrative urbanization' and its effects on local development. Our analysis has significant policy implications for country- and local-level economic development strategies in transitioning and developing nation-states where the process of administrative (re-)organization is not yet completed, and where internal economic and functional geographies are still evolving.

The rest of the paper is organized as follows. Section 2 describes the 1865 Lanza administrative reform. Section 3 presents the data and empirical modeling. Section 4 sets out the results. Section 5 concludes by discussing the main findings and drawing some policy implications for local economic development.

2. The 1865 administrative reform and the allocation of city functions

In the early decades of the nineteenth century Italy was extremely politically fragmented.[3] Since the end of Napoleonic dominance in 1815, and until the creation of the Kingdom of Italy in 1861, the pre-unification states – see Figure 1 – were based on different institutional set-ups and socio-

[3] Centuries of rivalry and fighting among cities in the Peninsula are documented in the abundant literature (e.g., Mancuso, 1978; Sanfilippo, 1978). Dante's *Divina Commedia* describes the thirteenth century battle of Montaperti between Florence and Siena in Tuscany. However, until the mid-nineteenth century, Italy had a polycentric structure like no other country in Europe. In other words, cities were – battles and skirmishes apart – relatively independent of each other, and each city exercised an influence on its own countryside (Rombai, 2002). Consequently, a proper urban network was not developed, and cities were not hierarchically ordered – compared to the territory of unified Italy in 1861. Indeed, Italy was made up of 'one hundred cities', according to Cattaneo's famous motto. The national urban complex was a mishmash of cities, without hierarchy or specialization. This was the especially true of Southern Italy. This network of juxtaposed units, each with its own urban nucleus, suggests the exclusive domination of the urban bourgeoisie over its rural territories. It was a kind of natural monopoly guaranteed by proximity, in an era in which most economic activities, together with the dense web of social and cultural relations, were confined within a radius of ten or twenty kilometers (Dematteis, 1997). At the same time, however, it was possible to distinguish between small, intermediate and large centers, with high-level city functions (Rombai, 2002).

economic policies, as well as highly heterogeneous in terms of economic development (e.g., Federico and Tena, 2014; Ciccarelli and Weisdorf, 2019; Chilosi and Ciccarelli, 2021).

Figure 1: Italian pre-unification states (1815-1860).

Source: "The Unification of Italy, 1815-1870", *Historical Atlas*, p. 161, William R. Shepherd, 1926.

During the first half of the nineteenth century, the northwestern Italian region of Piedmont – representing the 'core' of the Kingdom of Sardinia – led the political process culminating in the political unification of Italy in 1861.[4] The process of nation-building was gradual and heterogeneous, in line with the heterogeneous socio-economic conditions of the country' regions at the time. Among many other institutional innovations brought on by the birth of a new country, unification involved

[4] The Kingdom of Sardinia included the regions of Piedmont, Liguria, and Sardinia. The unification process – after three wars of independence – was led by the Piedmont region and the House of Savoy. The first king of Italy, Victor Emmanuel II, was the previous ruler of the Kingdom of Sardinia during the period 1849-1861. The House of Savoy ruled Italy until the end of World War II, when Italy became a Republic in 1946.

the introduction of mandatory recruitment to the army, a free and mandatory primary school system and a new set of rules governing the public administration at the various levels of territorial units. For the first time, the rules governing these institutions applied to the whole country.

The political elite of Piedmont, so influential on the strategic political decisions taken by the Italian Parliament in the aftermath of unification, decided to extend the bulk of the rules governing the Piedmont administrative system to the rest of the country. Law No. 2248 of 20 March 1865 (i.e., the Lanza reform), entitled "Toward the administrative unification of the Kingdom of Italy", established the rules governing the functioning of the various territorial administrative units of the newly created Kingdom of Italy – above all, provinces and municipalities.[5] The Lanza reform introduced a centralized administrative system; alternatives based on a decentralized system of local autonomies or a federalist structure were deemed unsuitable for Italy.[6] Policymakers at the time considered the sense of belonging to the national community too fragile. The use of administrative institutions to maintain political unity was not restricted to Italy and is heavily documented in the literature (e.g., Johnson, 1976). Central government established firm control of the provinces and municipalities through the appointment of handpicked and powerful prefects, who represented the executive throughout the province[7]. In addition to heading the forces responsible for keeping public order, prefects monitored the functioning of the public administration and, more generally, the socio-economic life of the provinces under their jurisdiction (Sandulli and Vesperini, 2011).[8]

A detailed account of the hundreds of articles in the 1865 law is beyond the scope of this paper, but the institutional mechanism for assigning city functions to municipalities can be summarized.[9]

[5] The full text of Law No. 2248 of 20 March 1865 is available at the institutional website "https://www.gazzettaufficiale.it/eli/id/1865/04/27/065U2248/sg".

[6] Based on the extensive historical archive of the Italian Chamber of Deputies, Ballini (2016), surveys the Italian political debate that resulted in the decision to rule out any form of regional autonomy and federalism in favor of a highly centralized state. See also Zarisky (1983).

[7] The power given by the law to prefects can be seen by the fact that city mayors were appointed and dismissed by the King but could also be suspended by the prefects. In particular circumstances, prefects could also dissolve municipal and provincial councils and veto municipal resolutions involving significant expenditure.

[8] According to Romanelli (2000), the prevailing literature has probably exaggerated the repressive role of prefects. While certainly limiting the autonomy of municipalities and provinces, they also maintained complex bidirectional relations between the center and periphery.

[9] The text of the 1865 reform was rather terse, with six lengthy annexes (*allegati*) providing details concerning: (i) the municipal and provincial administration (*allegato A*); (ii) public/internal security (*allegato B*); (iii) public health (*allegato C*); (iv) the Council of State (*allegato D*); (v) administrative litigation (*allegato E*); and (vi) Public Works (*Allegato F*).

The functions of the municipalities were identified indirectly through the introduction of certain categories of 'compulsory expenditure' to be included in the budget of both municipalities and provinces. In the case of municipalities, the reform introduced twenty categories of compulsory expenditure, including the administration of municipal institutions and assets, the provision of demographic services, the local police, justice, traffic, new construction and maintaining public works. Also included were a variety of social services, regarding roads, cemeteries, aqueducts, public health and safety, primary schools, solidarity and charity. Through the mechanism of compulsory expenses, the central government sought to overcome the inertia of municipal administrations – especially in the South of Italy – that were still reluctant to allocate sufficient resources to the construction of crucial social infrastructure (Barone, 1989).

Clearly, the 1865 administrative reform contributed greatly to the formation of a new urban hierarchy and reshaped the geography of territorial powers by appointing provincial capitals with various functions (e.g., judicial, military, fiscal, postal and in education and health) assigned to municipalities (Gambi, 1974). The relevant literature highlights the effect of the reform on the characteristics of villages and minor urban centers, especially in the South of Italy, by giving them medium-level bureaucratic functions, creating from scratch an articulated structure of offices in what had previously been considered the domain of peasants, leading to the emergence and expansion of the tertiary sector (Gambi, 1974; Ballini, 2016). Schools, hospitals, prisons, barracks, courthouses, and financial offices took on unprecedented administrative roles, and raised many municipalities to the rank of 'service cities', so as to outline a first elementary urban hierarchy (Barone, 1989).[10]

Finally, the 1865 reform not only had crucial effects on the formation and functioning of the Italian state, but also established the framework of the Italian public administration with rules

The reform was so far-reaching that experts considered it to have completed "the construction of the Italian state" (Ballini, 2016, p. 129).

[10] Other factors contributed to the definition of the Italian urban hierarchy after political unification. For example, Gambi (1974) and Barone (1989) underscore the role of the development of the railway network. Gambi (1974) cites Rimini, Pescara, and Terni as urban centers that benefitted particularly from railway development.

governing local territorial bodies lasting for more than a century.[11] In this respect, the Lanza reform had long-lasting effects on local demographic and socio-economic dynamics (Dematteis, 1997; Romanelli, 2000).

3. Data and Methodology

3.1. The Dataset

We use municipality-level population data drawn from population censuses carried out every 10 years starting in 1861, and add geographical data on the size (i.e., land area), altitude, and coastal features of the municipalities.[12] We examine the period from 1861 (i.e., the year of Italian unification) to 2011 (i.e., the last available census year). The dataset covers the entire Italian territory, except for municipalities in the current province of Mantua (Lombardy region) and the current regions of Friuli-Venezia Giulia, Latium, Trentino-South Tyrol, and Veneto, which became part of the Kingdom of Italy between 1866 and the end of World War I.[13]

We further enrich the dataset by drawing from Gambi (1974, pp. 744-745), who developed a quantitative indicator of the administrative functions of Italian cities for the years 1850 and 1875. It is important to note that Gambi (1974) focused on 149 cities that in 1850 and/or 1875 were 'centers of administrative powers', i.e., municipalities with administrative functions and an influence – in terms of services provided to citizens – beyond their own territory: in other words, municipalities with administrative functions at the supra-municipal level. Following Gambi (1974), therefore, when referring to the change in administrative functions due to the 1865 reform, we consider as treatment municipalities those that changed their administrative functions at the supra-municipal level

[11] Bassanini (2003, p.5), a former Italian Cabinet Minister for the Public Administration, noticed that "from 1865 to 1990, no government-wide reform had been accomplished in Italy".
[12] There are two exceptions to the 10-year population census. First, no census was carried out in 1891 due to financial difficulties (Ciccarelli and Fenoaltea, 2013). Population data for 1891 were therefore obtained by linear interpolation. Second, the census was carried out in 1936 rather than 1941 under Royal Decree No. 1503/1930, in an attempt to reduce the intervals between censuses to 5 years. However, no census took place in 1941 due to the state of war and the next census was in 1951, returning to the 10-year gap.
[13] Some municipalities of the current Latium region became part of Italy in 1861, and are accounted for in our dataset.

compared to a merely municipal level.[14] Building on a wealth of historical sources, Gambi's (1974) indicator is based on the functions carried out by the various administrative centers considered – fiscal, juridical, military and so on – in the years 1850 and 1875. Specifically, Gambi (1974) underscores how the 1865 reform modified the pre-unification urban hierarchy of the country by reducing the number of 'core' cities, increasing the administrative functions of some municipalities, and downsizing others. The centralist reform led to a 'quantitative contraction' of the urban centers with medium-level functions for the dissemination and coordination of government powers at the provincial level, with the consequent downgrading of some municipalities to a subordinate role. In particular, Gambi (1974) highlights both a reduction in the number of urban centers with medium-level functions in the urban hierarchy between 1850 and 1875, and an increase in the number of urban centers with minor functions in Italian regions – especially in the South of Italy – where, due to the particular administrative structure of the pre-unification states, they were essentially lacking. In this regard, the reform reshaped considerably the historical and pre-unification sub-national geography of administrative and public service activities.

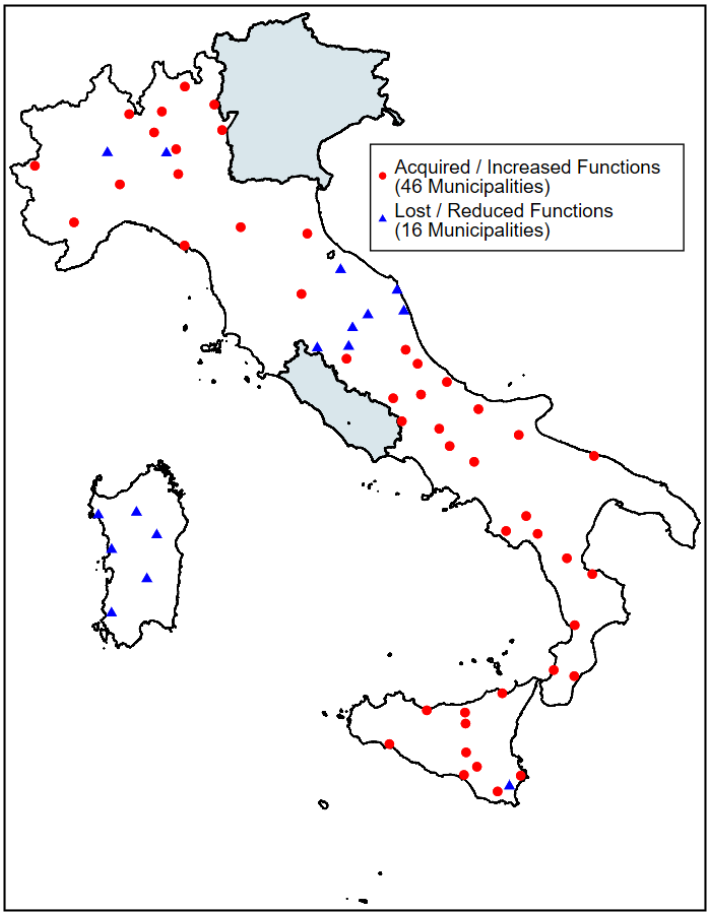
We use Gambi's (1974) indicator of administrative functions to identify the municipalities that underwent either a reduction or an increase in functions from the 1865 reform. Specifically, 16 out of the total of 6,589 municipalities existing in Italy in 1861 underwent either the loss or a reduction of their supra-municipal administrative functions: 7 municipalities moved from low-level functions (i.e., functions at sub-provincial level) to 'no functions' (i.e., municipal-level functions only); 1 municipality moved from mid-level functions (i.e., provincial-level functions) to 'no functions'; and 8 municipalities moved from mid- to low-level functions. Conversely, 46 out of the 6,589 municipalities acquired higher – either *ex novo* or increased – supra-municipal administrative functions compared to the pre-unification period: 36 municipalities moved from 'no functions' status

[14] The full list of the 149 municipalities considered by Gambi (1974) is set out in Tables A1 to A3 (Appendix A). Table A1 lists the 16 municipalities that underwent either the loss or reduction in administrative functions compared to the pre-unification period, and provides their geographic location defined at level 1 of the *Nomenclature des Unités Territoriales Statistiques* (NUTS). Table A2 lists the 46 municipalities that acquired new or increased administrative functions compared to the pre-unification period. Table A3 lists 87 municipalities with supra-municipal level functions before the Lanza reform, which retained the same functional level after 1865.

to low-level functions; 2 municipalities moved from ‘no functions’ status to mid-level functions; 7 municipalities moved from low- to mid-level functions; and 1 municipality moved from mid- to high-level functions (i.e., functions at pluri-provincial or pluri-regional level). Finally, the remaining 6,527 municipalities underwent no change to their administrative functions.

Figure 2 maps the spatial distribution of municipalities with lost/reduced and acquired/increased functions after the approval of Law No. 2248/1865. Most of the ‘winners’ were in the mainland South of Italy. Indeed, the only ‘loser’ was Noto (Sicily), which lost its provincial status, switched to Syracuse. Sardinia only lost administrative functions. Once the home of the House of Savoy, the role of Sardinia was considerably reduced by the 1865 reform.

Figure 2: Spatial distribution of municipalities that saw a change in administrative functions after the approval of Law No. 2248/1865.



Notes: Red circles denote municipalities that were attributed *ex novo* or increased administrative functions with the adoption of Law No. 2248/1865, while blue triangles denote municipalities that saw either the loss or a reduction of administrative functions with the Lanza reform. Light-blue polygons denote territories that were not part of the Kingdom of Italy in 1861, and that were annexed to it between 1866 and the end of World War I.

Of the 6,589 municipalities, the 16 municipalities that underwent either the loss or a reduction of their supra-municipal administrative functions and the 46 municipalities that acquired *ex novo* or increased supra-municipal administrative functions in 1865 comprise our 'treatment groups', while the remaining 6,527 municipalities whose administrative functions – at either municipal or supra-municipal level – did not change are our 'control group'.[15]

Table 1 shows the percentage of the population by type of municipality in the pre-reform census year 1861 and in the post-reform census year 1871, and indicates that the 149 municipalities identified

[15] Table A4 (Appendix A) details the distribution of municipalities by level of administrative functions before and after the Lanza reform. Table A5 (Appendix A) details the distribution of treatment and control municipalities by NUTS-1 geographical area.

by Gambi (1974) with administrative functions at supra-municipal level in 1850 and/or 1875 covered about 21% of the Italian population – almost 5 million citizens out of about 22 million. Table 2 shows the population distribution in the years 1861 and 1871 by type of municipality, and indicates how the average population size of cities is far larger in municipalities with administrative functions at supra-municipal level in 1850 and/or 1875 than in municipalities that never had functions at the supra-municipal level. Moreover, municipalities with unchanged administrative functions at the supra-municipal level after the 1865 reform include the Italian major cities of Milan, Turin, Florence, and Naples, among others – see also Table A3 (Appendix A).

Table 1: Percentage of population by type of municipality in 1861 and 1871.

Change in Functions	No. Municipalities	Population in Year			
		1861		1871	
		No.	%	No.	%
Loss or Reduction of Functions	16	204,139	0.93	216,735	0.93
Acquisition or Increase of Functions	46	780,014	3.56	844,199	3.61
Unchanged Functions					
Same Level of Functions in 1850 and 1875	87	3,684,604	16.80	3,988,327	17.06
'No Functions' in 1850 and 1875	6,440	17,263,056	78.71	18,333,216	78.41
Italy	6,589	21,931,813	100.00	23,382,477	100.00

Notes: Authors' elaboration on Gambi (1974) and Italian Population Censuses (years1861 and 1871). Percentage values are defined on the Italian total. 'No Functions' refers to municipalities with municipal-level administrative functions only.

Table 2: Population distribution in 1861 and 1871 by type of municipality.

Change in Functions	No. Municipalities	Population in 1861		
		Minimum	Mean	Maximum
Loss or Reduction of Functions	16	2,494	12,758.69	26,054
Acquisition or Increase of Functions	46	2,838	16,956.83	50,872
Unchanged Functions				
Same Level of Functions in 1850 and 1875	87	2,421	42,351.77	484,026
No Functions in 1850 and 1875	6,440	56	2,680.60	49,584
Change in Functions	No. Municipalities	Population in 1871		
		Minimum	Mean	Maximum
Loss or Reduction of Functions	16	2,380	13,545.94	27,101
Acquisition or Increase of Functions	46	3,252	18,352.15	61,541
Unchanged Functions				
Same Level of Functions in 1850 and 1875	87	2,394	45,842.84	489,008
No Functions in 1850 and 1875	6,440	59	2,846.77	54,825

Notes: Authors' elaboration on Gambi (1974) and Italian Population Censuses (years1861 and 1871). Percentage values are defined on the Italian total. 'No Functions' refers to municipalities with municipal-level administrative functions only.

3.2. Empirical Modeling

We test whether the Lanza reform influenced municipality population dynamics through the following empirical equation based on a 'two-level' treatment status:

$$Population_{m,t} = \alpha + \beta Reduced\ Function_{m,t} + \gamma Increased\ Function_{m,t} + \\ + \mu_m + \nu_t + \varepsilon_{m,t} \quad (1)$$

where $Population_{m,t}$ denotes population in municipality m in census year $t = 1861, \ldots, 2011$; α is a constant term; $Reduced\ Function_{m,t}$ is a binary variable with value zero in the pre-reform census year 1861 for all municipalities, and in the post-reform census years from 1871 to 2011 for all municipalities both in the control group (i.e., municipalities with unchanged functions after the Lanza reform) and that acquired *ex novo* or increased functions at the supra-municipal level due to the 1865 reform, while value 1 in all post-reform census years (from 1871 to 2011) for all municipalities that underwent either the loss or a reduction of administrative functions at the supra-municipal level in 1865; $Increased\ Function_{m,t}$ is a binary variable with value zero in the pre-reform census year 1861 for all municipalities, and in the years from 1871 to 2011 for all municipalities both in the control group and that underwent either the loss or a reduction of functions at the supra-municipal level with the 1865 reforms, while value of 1 in all the post-reform years for all municipalities that acquired *ex novo* or increased functions at the supra-municipal level in 1865; μ_m and ν_t denote municipality and year fixed effects (FE), respectively; $\varepsilon_{m,t}$ is the error term.

Equation (1) is estimated through a two-way FE estimator. We also modify Equation (1) to evaluate the time-varying effect (if any) of the 1865 reform on population. We replace the variables $Reduced\ Function_{m,t}$ and $Increased\ Function_{m,t}$ with two lead dummy variables ($Reduced\ Function_{m,t}^{\tau-1}$ and $Increased\ Function_{m,t}^{\tau-1}$) referring to the pre-reform year 1861, with τ denoting the reform year 1865, and two sets of lag dummy variables ($Reduced\ Function_{m,t}^{\tau+h}$ and

$Increased\ Function_{m,t}^{\tau+h}$) referring to each post-reform census year from 1871 to 2011, with $h = 1, \ldots, 15$ (e.g., Autor, 2003). Formally, the equation is modified as follows:

$$Population_{m,t} = \alpha + \delta Reduced\ Function_{m,t}^{\tau-1} + \sum_{h=1}^{15} \zeta_{\tau+h} Reduced\ Function_{m,t}^{\tau+h} +$$

$$+\theta Increased\ Function_{m,t}^{\tau-1} + \sum_{h=1}^{15} \vartheta_{\tau+h} Increased\ Function_{m,t}^{\tau+h} +$$

$$+\mu_m + \nu_t + \varepsilon_{m,t} \qquad (2)$$

Equation (2) is estimated through a two-way FE estimator by specifying the two lead dummy variables as the reference category.

We also rely on a one-to-one exact matching procedure with random sampling of one matched control municipality for each matched treatment municipality (e.g., Gustafsson et al., 2016). The rationale is to increase the similarity between treatment and control municipalities, and to check for any bias related to the non-random removal or attribution of functions at supra-municipal level to treatment municipalities. Specifically, we match municipalities in the control group (i.e., with unchanged functions after the passing of Law No. 2248/1865) with municipalities that underwent either a loss/reduction or an acquisition/increase of functions at the supra-municipal level with the 1865 reform – considered together as the treatment group in the matching procedure. Exact matching is based on the variables for population in 1861 (divided into 17 quantiles), altitude (divided into 17 quantiles), land area (divided into 17 quantiles), coastal features (binary variable), and NUTS-1 geographical area (categorical variable for North, Centre, South, Islands). The matching procedure identifies 10 treatment municipalities with lost/reduced functions, 29 treatment municipalities with

acquired/increased functions, and 39 control municipalities with unchanged functions, which are used to estimate both Equations (1) and (2).[16]

4. Empirical Results

4.1. The Population Effects of the Lanza Reform

Table 3 reports the results of the two-way FE estimation of Equation (1) for the un-matched and matched samples. The estimated elasticities obtained from the un-matched sample – see Specification (1) – suggest that the Lanza reform stimulated population growth in those municipalities that were attributed *ex novo* or increased functions at the supra-municipal level compared to those with unchanged functions, and that municipalities undergoing either the loss or reduction of supra-municipal functions experienced population growth compared to municipalities in the control group – although the estimated premium is 4.2 times lower than in the case of municipalities that acquired *ex novo* or increased functions. However, the results obtained for the matched sample suggest that only treatment municipalities that acquired *ex novo* or increased supra-municipal functions benefitted from the growth premium compared to municipalities with unchanged functions. By contrast, municipalities that underwent either the loss or a reduction of supra-municipal functions due to the Lanza reform did not record any population growth compared to the control municipalities. In this case, we estimate that municipalities that were attributed *ex novo* or increased supra-municipal functions recorded population growth about 423.7 times larger than those with lost or reduced supra-municipal functions compared to control municipalities.

[16] The number of quantiles defined for the distribution of the continuous variables is the number that maximizes the similarity between treatment and control municipalities. Table B1 (Appendix B) shows the balance test for the matching procedure: differences in mean values between treatment and control municipalities are heavily reduced in the matched sample.

Table 3: Elasticity of lost/reduced and acquired/increased administrative functions on population.

Estimation method	FE	
Sample	Un-matched	Matched
	(1)	(2)
$\text{Reduced Function}_{m,t}$	0.0012****	0.0003
	(0.0002)	(0.0155)
$\text{Increased Function}_{m,t}$	0.0050****	0.1298***
	(0.0003)	(0.0472)
Municipality FE	Yes	Yes
Year FE	Yes	Yes
No. Observations	105,424	1,248
No. Municipalities	6,589	78
No. Treatment Municipalities		
Reduced Functions	16	10
Increased Functions	46	29
No. Control Municipalities	6,527	39
No. Years	16	16
R^2	0.02	0.27

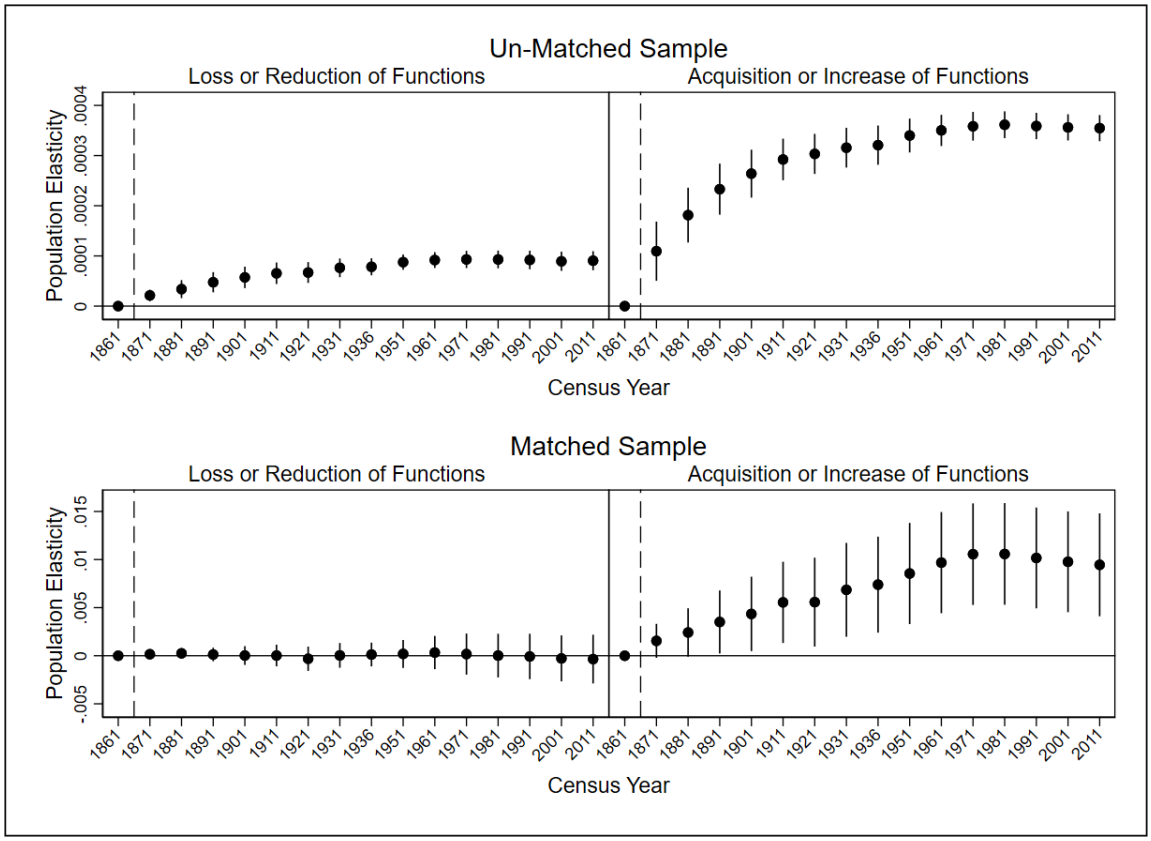
Notes: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$; **** $p < 0.001$. Robust standard errors in parentheses. $Reduced\ Function_{m,t}$ is the dummy variable capturing the loss/reduction of administrative functions that affected municipality m with the approval of Law No. 2248/1865. $Increased\ Function_{m,t}$ is the dummy variable capturing the acquisition/increase of administrative functions that affected municipality m with the approval of Law No. 2248/1865. Both variables take a value of one for treatment municipalities from census year 1871 onwards; they take a value of zero otherwise. Control units are those municipalities with unchanged administrative functions after the approval of Law No. 2248/1865.

Figure 3 complements the previous evidence by plotting the estimated elasticities of the lead and lag dummy variables obtained from the two-way FE estimation of Equation (2), and provides further insights about the temporal persistence of the estimated effect of the Lanza reform. First, although the results obtained for the un-matched sample suggest a jump in population in 1871 (i.e., the first census year after the approval of Law No. 2248/1865) for both categories of treatment municipalities, clearly the population growth premium was larger for treatment municipalities that acquired *ex novo* or increased supra-municipal functions than for treatment municipalities that underwent either the loss or a reduction of supra-municipal functions compared to municipalities with unchanged functions. Second, evidence based on the matched sample corroborates the results presented in Table 3, and highlights the absence of a population growth premium for municipalities with either lost or reduced supra-municipal administrative functions compared to those with

unchanged functions. By contrast, we find a population growth premium for municipalities that acquired *ex novo* or increased supra-municipal administrative functions compared to municipalities with unchanged functions. In this case, the estimated population elasticity is positive and becomes statistically significant starting from census year 1891. Moreover, we find a temporal persistence effect of the administrative reform on the population growth of the treatment municipalities that acquired *ex novo* or increased supra-municipal functions compared to the control municipalities, with a slowdown occurring after census year 1981.[17]

[17] We carried out a series of exercises to test the robustness of the results presented in Table 3. First, we relied on a standard two-period difference-in-differences analysis by reducing the period of observation to only the pre-reform census year 1861 and the post-reform census year 1871. The results of the two-way FE estimation of Equation (1) on the un-matched and matched samples are shown in Table C1 (Appendix C), and confirm the findings in Table 3. Second, we replicated the analysis considering the entire period of observation from 1861 to 2011 on an alternative matched sample obtained by excluding the variable for population in the pre-reform census year 1861 as matching variable – see Table C2 (Appendix C) for the balance test on the matching procedure. Table C3 (Appendix C) shows the estimated elasticities, confirming the main results set out in Table 3. In addition, the results reported in Figure C1 (Appendix C) also confirm the evidence of time persistence of the population effects of the Lanza reform. Third, we replicated the analysis on the matched sample to check for potential spatial correlation of the error term by clustering standard errors at the level of currently-defined provinces (NUTS-3 level), regions (NUTS-2 level), and macro-areas (NUTS-1 level), respectively. The results of this exercise are set out in Table C4 (Appendix C), and confirm the main findings. Finally, we checked the robustness of the time-persistency analysis performed on the matched sample by assuming that the Lanza reform started to produce its effects on population dynamics a few years after the law was passed, namely starting from the census year 1871 rather than from the approval year 1865. Specifically, we modified Equation (2) by dropping the census year 1871 from the set of lag dummy variables, and by setting 1871 as the reference year in the analysis. This exercise has two implications. First, it allows us to test for pre-treatment effects of the Lanza reform by estimating the coefficient of the lead dummy variable referring to the census year 1861. Second, it allows us to relax the implicit assumption that the effects of the Lanza reform on population dynamics started to emerge immediately after it was passed. Indeed, it is reasonable to assume that the administrative reorganization of municipalities took some time to materialize. The results of this exercise are shown in Figure C2 (Appendix C): they broadly confirm the main results, and also show that the lead dummy variable referring to the census year 1861 is statistically insignificant.

Figure 3: Elasticity of lost/reduced and acquired/increased administrative functions on population – Time-persistency analysis.



Notes: Estimated elasticities of lead and lag dummy variables defined around the approval year of Law No. 2248/1865 (dashed line). Lead and lag dummy variables are defined with respect to the variables capturing the loss/reduction and acquisition/increase of administrative functions with the approval of Law No. 2248/1865. Control units are those municipalities with unchanged administrative functions after the approval of Law No. 2248/1865. The pre-reform census year 1861 is set as the reference period. Results are obtained through the two-way FE estimation of Equation (2). Un-matched sample model statistics: no. observations = 105,424; no. municipalities = 6,589; no. treatment municipalities with lost/reduced functions = 16; no. treatment municipalities with acquired/increased functions = 46; no. control municipalities = 6,527; no. years = 16; R^2 = 0.03. Matched sample model statistics: no. observations = 1,248; no. municipalities = 78; no. treatment municipalities with lost/reduced functions = 10; no. treatment municipalities with acquired/increased functions = 29; no. control municipalities = 39; no. years = 16; R^2 = 0.32.

4.2. Population Effects of Function Attribution

The baseline analysis presented in the previous sub-section clearly suggests that only municipalities that acquired *ex novo* or increased supra-municipal administrative functions with the approval of the Lanza reform recorded a statistically significant population growth premium compared to municipalities with unchanged functions. Conversely, our results highlight how municipalities that underwent either the loss or a reduction of supra-municipal functions did not perform significantly differently from municipalities in the control group.

Moving on from these results, this sub-section provides further analyses by explicitly focusing on the population effects related to the attribution of *ex novo* or increased supra-municipal functions. Specifically, we consider a reduced sample by excluding from the analysis the 16 municipalities that underwent either the loss or a reduction of supra-municipal functions with the Lanza reform. Thus, we rely on a more standard difference-in-differences approach by considering the 46 municipalities that acquired *ex novo* or increased supra-municipal functions as the treatment group, and the 6,527 municipalities with unchanged functions as the control group. For this aim, we first modify Equation (1) as follows:

$$Population_{m,t} = \alpha + \gamma Increased\ Function_{m,t} + \mu_m + \nu_t + \varepsilon_{m,t} \quad (3)$$

where the binary variable $Increased\ Function_{m,t}$ has value zero in the pre-reform year 1861 for all municipalities, and in the years from 1871 to 2011 for all municipalities in the control group (i.e., municipalities with unchanged functions after the Lanza reform), and has a value of 1 in all the post-reform years for all municipalities that acquired *ex novo* or increased supra-municipal functions in 1865; all the other terms are defined as for Equation (1). Second, we modify Equation (2) as follows:

$$Population_{m,t} = \alpha + \theta Increased\ Function_{m,t}^{\tau-1} + \sum_{h=1}^{15} \vartheta_{\tau+h} Increased\ Function_{m,t}^{\tau+h} + \\ + \mu_m + \nu_t + \varepsilon_{m,t} \quad (4)$$

where all the terms are defined as for Equation (2). Both Equations (3) and (4) are estimated through a two-way FE estimator, also relying on a one-to-one exact matching procedure with random sampling of one matched control municipality (i.e., a municipality with unchanged functions after the approval of Law No. 2248/1865) for each matched treatment municipality (i.e., a municipality with new or increased supra-municipal functions after the Lanza reform). The matching procedure is based

on the variables for population in 1861 (divided into 17 quantiles), altitude (divided into 17 quantiles), land area (divided into 17 quantiles), coastal features (binary variable), and NUTS-1 geographical area (categorical variable for North, Centre, South, Islands), and identifies 28 treatment municipalities with acquired/increased supra-municipal functions and 28 control municipalities with unchanged functions.[18]

Table 4 and Figure 4 show the results of the two-way FE estimation of Equations (3) and (4), respectively. As expected, the results corroborate the previous findings with a positive population growth premium for municipalities with acquired/increased supra-municipal functions compared to the control municipalities. In particular, we find temporal persistence for the effect of the Lanza reform on population dynamics, peaking in census year 1981.[19]

[18] Table B2 (Appendix B) shows the balance test on the matching procedure: differences in mean values between treatment and control municipalities are heavily reduced in the matched sample. In addition, after-match differences in mean values between treatment and control municipalities are never statistically significant, except for the variable capturing population in 1861 – the p-value of the t-test is 0.085.

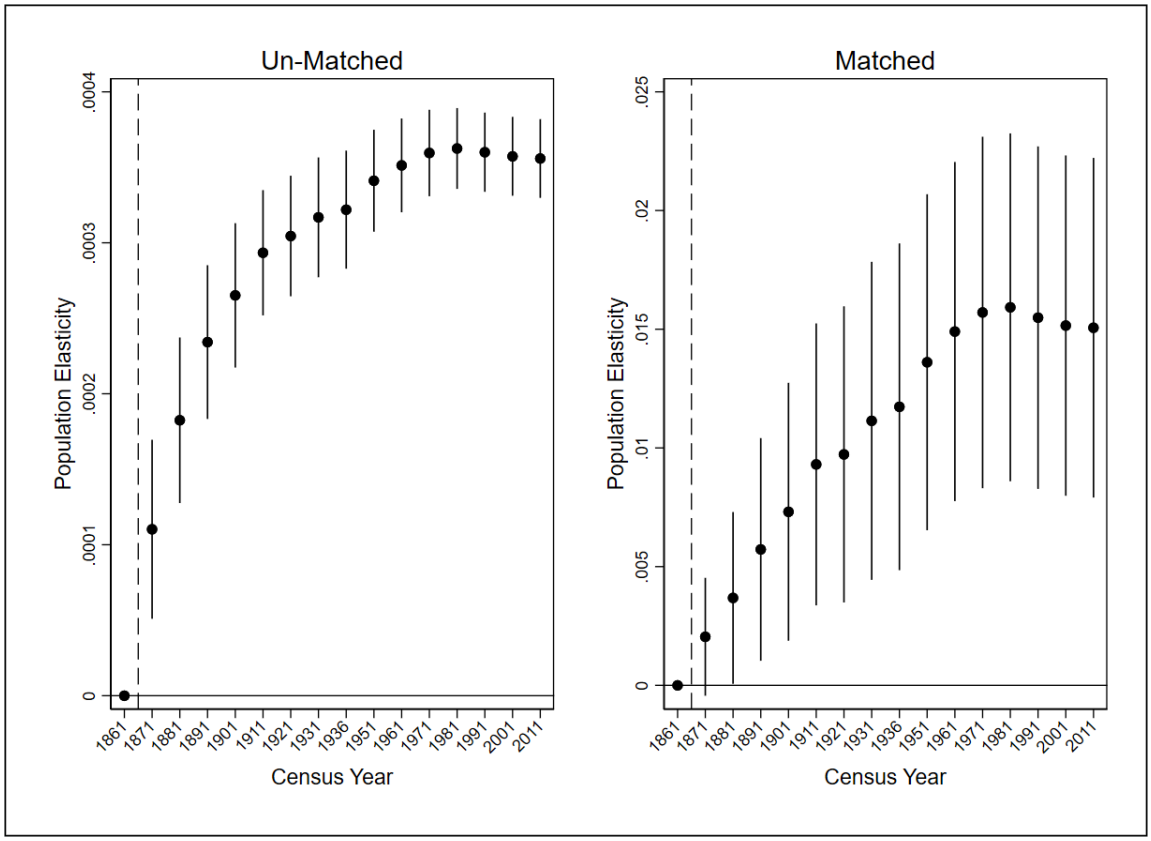
[19] We carried out a series of exercises to test the robustness of the results shown in Table 4 and Figure 4. First, we relied on a standard two-period difference-in-differences analysis by reducing the period of observation to consider only the pre-reform census year 1861 and the post-reform census year 1871. The results of the two-way FE estimation of Equation (3) on the un-matched and matched samples are set out in Table C5 (Appendix C), and confirm the findings of Table 4. Second, we replicated the analysis considering the entire period of observation from 1861 to 2011 on an alternative matched sample obtained by excluding the variable for population in the pre-reform census year 1861 as matching variable – see Table C6 (Appendix C) for the balance test on the matching procedure. The results shown in Table C7 and Figure C3 (Appendix C) confirm the main findings of Table 4 and Figure 4. Third, we tested the robustness of the matching analysis by relying on a one-to-one Propensity Score matching procedure without replacement, and based on a Probit regression model. We carried out the Propensity Score matching on the variables for population in 1861, altitude, land area, coastal features (binary variable), and geographical area (dummy variables for Centre, South, and Islands, with North set as the reference category). The Propensity Score matching procedure identifies 46 treatment municipalities with acquired/increased functions and 46 control municipalities with unchanged functions. Table C8 (Appendix C) shows the balance test on the matching procedure, and highlights an improvement in similarity between treatment and control municipalities: after-match differences in mean values between treatment and control municipalities are never statistically significant, except for the dummy variable referring to the Southern location – the p-value of the t-test is 0.062. Table C9 (Appendix C) shows the results of the two-way FE estimation of Equation (3), while Figure C4 provides evidence of time-persistency obtained from the two-way FE estimation of Equation (4). The results confirm the findings in Table 4 and Figure 4. Fourth, we estimated Equations (3) and (4) by relying on an Inverse Probability Weighting strategy, with weights obtained from a Probit regression of the treatment dummy variable on the variables for population in 1861, altitude, land area, coastal features (binary variable), and geographical area (dummy variables for Centre, South, and Islands, with North set as the reference category). The results are set out in Table C10 and Figure C5, and fully confirm the findings presented in Table 4 and Figure 4. Fifth, we replicated the analysis on the matched sample to check for potential spatial correlation of the error term by clustering standard errors at the level of currently-defined provinces (NUTS-3 level), regions (NUTS-2 level), and macro-areas (NUTS-1 level), respectively. The results of this exercise are shown in Table C11 (Appendix C), and confirm the main findings. Finally, we checked the robustness of the time-persistency analysis performed on the matched sample by assuming that the Lanza reform started to produce its effects on population dynamics a few years after it was passed, namely starting from the census year 1871 rather than 1865. Specifically, we modified Equation (4) by dropping the census year 1871 from the set of lag dummy variables, and by setting it as the reference year in the analysis. The results of this exercise are shown in Figure C6 (Appendix C) and broadly confirm the main findings. They also show that the lead dummy variable referring to the census year 1861 is statistically insignificant.

Table 4: Elasticity of acquired/increased administrative functions on population.

Estimation method	FE	
Sample	Un-matched	Matched
	(1)	(2)
$\text{Increased Function}_{m,t}$	0.0050****	0.2044***
	(0.0003)	(0.0677)
Municipality FE	Yes	Yes
Year FE	Yes	Yes
No. Observations	105,168	896
No. Municipalities	6,573	56
No. Treatment municipalities	46	28
No. Control municipalities	6,527	28
No. Years	16	16
R^2	0.02	0.26

Notes: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$; **** $p < 0.001$. Robust standard errors in parentheses. $Increased\ Function_{m,t}$ is the dummy variable capturing the acquisition/increase of administrative functions that affected municipality m with the approval of Law No. 2248/1865. It takes a value of one for treatment municipalities from census year 1871 onwards; it takes a value of zero otherwise. Control units are those municipalities with unchanged administrative functions after the approval of Law No. 2248/1865.

Figure 4: Elasticity of acquired/increased administrative functions on population – Time-persistency analysis.



Notes: Estimated elasticities of lead and lag dummy variables defined around the approval year of Law No. 2248/1865 (dashed line). The pre-reform census year 1861 is set as the reference period. Results are obtained through the two-way FE estimation of Equation (4). Un-matched sample model statistics: no. observations = 105,168; no. municipalities = 6,573; no. treatment municipalities = 46; no. control municipalities = 6,527; no. years = 16; $R^2 = 0.03$. Matched sample model statistics: no. observations = 896; no. municipalities = 56; no. treatment municipalities = 28; no. control municipalities = 28; no. years = 16; $R^2 = 0.32$.

Moving on from these results, we further analyze the 'net' effect associated with the *ex novo* acquisition of administrative functions at supra-municipal level by considering a reduced sample where treatment units are identified exclusively with municipalities that acquired *ex novo* supra-municipal administrative functions (i.e., by excluding those with some functions at the supra-municipal level before 1865 which underwent an increase in their functions with the Lanza reform), and control units are identified exclusively with municipalities not endowed with supra-municipal administrative functions before 1865, and which did not acquire supra-municipal functions with the approval of Law No. 2248/1865 (i.e., by excluding municipalities with supra-municipal functions before 1865 which maintained the same functional level after the 1865 reform). This alternative

definition of treatment and control units leads to a reduced sample of 6,478 municipalities, with 38 treatment municipalities and 6,440 control municipalities. The aim of this exercise is to evaluate the net premium (if any) related to the attribution *ex novo* of administrative functions at the supra-municipal level. Thus, the variable $Increased\ Function_{m,t}$ in Equation (3) is replaced by the variable $Acquired\ Function_{m,t}$ – with corresponding changes in Equation (4) –, i.e., a binary variable with value zero in the pre-reform year 1861 for all municipalities – now with municipal-level functions only – and in the years from 1871 to 2011 for all municipalities in the control group, and a value of 1 in all the post-reform years (from 1871 to 2011) for all municipalities that acquired *ex novo* functions at the supra-municipal level in 1865. We also rely on a one-to-one exact matching procedure with random sampling of one matched control municipality for each matched treatment municipality. The matching procedure identifies 18 treatment and 18 control municipalities.[20]

The results of the two-way FE estimation of the modified versions of Equations (3) and (4) are shown in Table 5 and Figure 5, respectively. Overall, the main findings are confirmed. Looking at the results obtained on both the un-matched and the matched samples, we find a population growth premium for treatment municipalities that acquired *ex novo* supra-municipal functions compared to control municipalities with municipal-level functions only; the estimated population growth premium is persistent over time. However, it is worth noting that, first, the estimated elasticities decrease in magnitude compared to Table 4 and Figure 4, and, second, that the population effects of the Lanza reform became evident from census year 1891 rather than from census year 1881.[21]

[20] Table B3 (Appendix B) reports the balance test on the matching procedure.

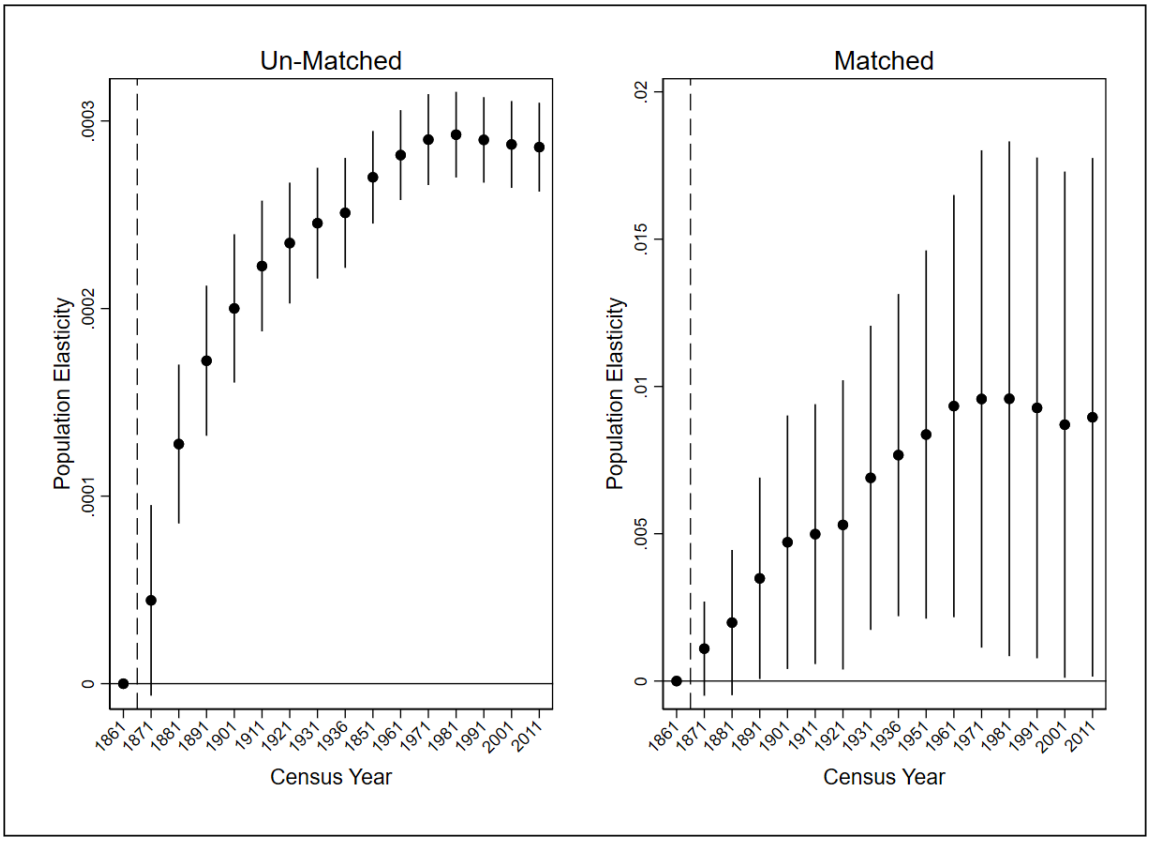
[21] We tested the robustness of the results shown in Table 5 and Figure 5 by, first, replicating the analysis on an alternative matched sample obtained by excluding the variable for population in the pre-reform census year 1861 as matching variable – see Table C12 (Appendix C) for the balance test on the matching procedure. The results shown in Table C13 and Figure C7 (Appendix C) broadly confirm the main findings. Second, we replicated the analysis on the matched sample to check for potential spatial correlation of the error term by clustering standard errors at the level of currently-defined provinces (NUTS-3 level), regions (NUTS-2 level), and macro-areas (NUTS-1 level), respectively. The results of this exercise are set out in Table C14 (Appendix C), and confirm the main findings. Finally, we checked the robustness of the time-persistency analysis performed on the matched sample by assuming that the Lanza reform started to produce its effects on population dynamics a few years after it was passed, namely starting from the census year 1871 rather than from 1865. Specifically, we further modified Equation (4) by dropping the census year 1871 from the set of lag dummy variables, and by setting 1871 as the reference year in the analysis. The results of this exercise are shown in Figure C8 (Appendix C) and, as before, not only confirm the main findings, but also show that the lead dummy variable referring to the census year 1861 is statistically insignificant.

Table 5: Elasticity of *ex novo* acquisition of administrative functions on population.

Estimation method	FE	
Sample	Un-matched	Matched
	(1)	(2)
$\text{Acquired Function}_{m,t}$	0.0040****	0.1167*
	(0.0002)	(0.0606)
Municipality FE	Yes	Yes
Year FE	Yes	Yes
Observations	103,648	576
Municipalities	6,478	36
Treatment Municipalities	38	18
Control Municipalities	6,440	18
Years	16	16
R^2	0.07	0.33

Notes: * $p < 0.1$; **** $p < 0.001$. Robust standard errors in parentheses. $Acquired\ Function_{m,t}$ is the dummy variable capturing the *ex novo* acquisition of administrative functions by municipality m with the approval of Law No. 2248/1865. The variable takes a value of one for treatment municipalities from census year 1871 onwards; it takes a value of zero otherwise. Treatment units are municipalities with municipal-level administrative functions before 1865, and that acquired functions at supra-municipal level with the Lanza reform. Control units are municipalities with municipal-level functions before 1865, and did not see the attribution of functions at supra-municipal level with the 1865 reform.

Figure 5: Elasticity of *ex novo* acquisition of administrative functions on population – Time-persistency analysis.



Notes: Estimated elasticities of lead and lag dummy variables defined around the approval year of Law No. 2248/1865 (dashed line). Lead and lag dummy variables are defined with respect to the variable capturing the *ex novo* acquisition of administrative functions with the approval of Law No. 2248/1865. Treatment units are municipalities with municipal-level administrative functions before 1865, and that acquired functions at supra-municipal level with the Lanza reform. Control units are municipalities with municipal-level functions before 1865, and did not see the attribution of functions at supra-municipal level with the 1865 reform. The pre-reform census year 1861 is set as the reference period. Results are obtained through the two-way FE estimation of the modified version of Equation (4). Un-matched sample model statistics: no. observations = 103,648; no. municipalities = 6,478; no. treatment municipalities = 38; no. control municipalities = 6,440; no. years = 16; $R^2 = 0.09$. Matched sample model statistics: no. observations = 576; no. municipalities = 36; no. treatment municipalities = 18; no. control municipalities = 18; no. years = 16; $R^2 = 0.36$.

4.3. The Role of Distance to Main Cities

Previous empirical evidence has shown that city population growth is influenced by proximity to large urban areas (e.g., Zeng et al., 2016; Bosker and Buringh, 2017; Beltrán Tapia et al., 2021). Drawing on this rationale, in this sub-section we evaluate whether and to what extent the population growth premium found for municipalities that acquired or increased supra-municipal administrative functions compared to those with unchanged functions is influenced by the proximity of a municipality to a main urban administrative, political, and economic center.

For this aim, we put forward two different exercises. First, we consider geographic proximity to current NUTS-2 level region capital cities. The analysis is carried out on the un-matched sample of 6,573 (i.e., 46 treatment and 6,527 control) municipalities, and distance-based heterogeneity is defined according to the parameter $d^{m,c}$ denoting the distance in kilometers between municipality m and the NUTS-2 region capital city c. The sample is divided into four distance bands as follows: $0 \leq d^{m,c} \leq 20$; $20 < d^{m,c} \leq 50$; $50 < d^{m,c} \leq 100$; $d^{m,c} > 100$. As a second exercise, we consider geographic distance to the capital city of the pre-unification state, rather than looking at current NUTS-2 level regions. Specifically, the distance parameter $d^{m,c}$ is defined for each municipality in the sample with respect to the city that acted as capital city – or main political, administrative, and economic center – in the seven states unified in 1861 into the Kingdom of Italy, i.e., the Kingdom of Sardinia (with Turin as capital city), the Kingdom of Lombardy-Venetia (that was under the control of the Habsburg Empire, with Milan acting as the main political center), the Duchy of Parma and Piacenza (with Parma as capital city), the Duchy of Modena and Reggio Emilia (with Modena as capital city), the Papal States (with Rome as capital city), the Grand Duchy of Tuscany (with Florence as capital city), and the Kingdom of the Two Sicilies (with Naples as capital city). We consider heterogeneity to the capital city according to the distance bands defined above.

Tables 6 and 7 show the results of the two-way FE estimation of Equation (3) with distance to capital cities defined with respect to NUTS-2 regions and pre-unification states, respectively. In both cases, the results show that the greater the distance from the capital city, the larger the population growth premium for the municipalities that acquired *ex novo* or increased supra-municipal functions compared to municipalities with unchanged functions. This result is in line with the historical literature according to which, in a traditional economy, such as nineteenth century Italy, surplus is extracted from subjected territories and primarily spent in the (pre-unification) capital city (Fenoaltea, 2003).[22]

[22] See Gambi (1972) on the centrality of Naples as the only genuine urban center on mainland southern Italy.

Table 6: Elasticity of acquired/increased administrative functions on population by distance to own NUTS-2 region capital city.

Estimation method	FE			
Sample	Un-matched			
Distance to NUTS-2 region capital city	$0 \leq d^{m,c} \leq 20$	$20 < d^{m,c} \leq 50$	$50 < d^{m,c} \leq 100$	$d^{m,c} > 100$
	(1)	(2)	(3)	(4)
$\text{Increased Function}_{m,t}$	0.0031****	0.0037****	0.0048****	0.0082****
	(0.0002)	(0.0004)	(0.0003)	(0.0008)
Municipality FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
No. Observations	8,480	33,200	44,400	19,088
No. Municipalities	530	2,075	2,775	1,193
No. Treatment municipalities	2	12	18	14
No. Control municipalities	528	2,063	2,757	1,179
No. Years	16	16	16	16
R^2	0.04	0.08	0.04	0.05

Notes: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$; **** $p < 0.001$. Robust standard errors in parentheses. $Increased\ Function_{m,t}$ is the dummy variable capturing the acquisition/increase of administrative functions that affected municipality m with the approval of Law No. 2248/1865. It takes a value of one for treatment municipalities from census year 1871 onwards; it takes a value of zero otherwise. Control units are those municipalities with unchanged administrative functions after the approval of Law No. 2248/1865. The distance between municipality m and the own NUTS-2 region capital city c ($d^{m,c}$) is defined in kilometer.

Table 7: Elasticity of acquired/increased administrative functions on population by distance to own pre-unification state capital city.

Estimation method	FE			
Sample	Un-matched			
Distance to pre-unification state capital city	$0 \leq d^{m,c} \leq 20$	$20 < d^{m,c} \leq 50$	$50 < d^{m,c} \leq 100$	$d^{m,c} > 100$
	(1)	(2)	(3)	(4)
$\text{Increased Function}_{m,t}$	0.0022****	0.0026****	0.0041****	0.0071****
	(0.0000)	(0.0003)	(0.0002)	(0.0007)
Municipality FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
No. Observations	4,624	21,904	30,912	47,728
No. Municipalities	289	1,369	1,932	2,983
No. Treatment municipalities	1	5	10	30
No. Control municipalities	288	1,364	1,922	2,953
No. Years	16	16	16	16
R^2	0.06	0.11	0.03	0.03

Notes: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$; **** $p < 0.001$. Robust standard errors in parentheses. $Increased\ Function_{m,t}$ is the dummy variable capturing the acquisition/increase of administrative functions that affected municipality m with the approval of Law No. 2248/1865. It takes a value of one for treatment municipalities from census year 1871 onwards; it takes a value of zero otherwise. Control units are those municipalities with unchanged administrative functions after the approval of Law No. 2248/1865. The distance between municipality m and the own pre-unification state capital city c ($d^{m,c}$) is defined in kilometer. Pre-unification state capital cities are defined as follows: Turin for Kingdom of Sardinia; Milan for Kingdom of Lombardy-Venetia; Parma for Duchy of Parma and Piacenza; Modena for Duchy of Modena and Reggio Emilia; Rome for Papal States; Florence for Grand Duchy of Tuscany; Naples for Kingdom of the Two Sicilies.

4.4. The Long-Lasting Effects of the Lanza Reform on Local Economic Performance

Our empirical evidence points to the positive and temporally persistent effect of the administrative reform of 1865 on city-level population growth. The literature strongly underscores the close relationship between population dynamics and economic performance. On the one hand, high levels of urbanization, as measured by the percentage of the national population living in urban areas, are positively associated with macro-economic performance indicators measured in terms of increased income per capita (e.g., Henderson, 2010). On the other hand, large and dense cities enjoy a productivity premium compared to smaller, low-density counterparts (e.g., Puga, 2010).

This sub-section complements the previous analysis on population dynamics by testing for the potential long-lasting effects of the Lanza reform on local-level economic performance. Unfortunately, no data are available for economic performance at the municipality level. This limitation is overcome by considering as the geographical unit of analysis the LLM, i.e., a spatial unit corresponding to a functional area made comprising contiguous municipalities and defined according to economic – i.e., commuting patterns of workers – rather than administrative criteria. We rely on the classification of LLMs adopted by the Italian National Institute of Statistics (Istat) with the 2001 Industry and Services Census, identifying 686 LLMs over the entire territory of Italy.

We focus on 579 LLMs comprising the municipalities considered in the previous analysis: namely, the 46 municipalities that acquired *ex novo* or increased supra-municipal functions with the 1865 reform (i.e., the treatment units), and the 6,527 municipalities with unchanged functions after the Lanza reform (i.e., the control units). We test the economic returns of the Lanza reform by looking at LLM-level labor productivity – defined as value added per employee – averaged over the period 2001-2005, and by relying on a difference-in-differences design.[23] For this aim, treatment units are defined as the 46 LLMs including a treatment municipality (i.e., a municipality that acquired *ex novo* or increased supra-municipal functions in 1865), and control units as the 533 LLMs that do not include treatment municipalities (i.e., only municipalities with unchanged functions after the Lanza

[23] Time series data on value added and employment at LLM level are available from Istat for the period 2001-2005.

reform). We also restrict the analysis by focusing on a sub-sample of 35 treatment LLMs identified by considering only the LLMs where the treatment municipality represents at least 25% of the 2001 population, in order to capture better the potential long-lasting effect of the Lanza reform.

Finally, we also carry out a matching procedure on both the full sample of 579 (46 treatment and 533 control) LLMs and the sub-sample of 568 (35 treatment and 533 control) LLMs. Specifically, we rely on a one-to-one exact matching procedure with random sampling of one matched control LLM for each matched treatment LLM. The matching procedure is based on the variables for 2001 employment density, defined as employees per square kilometer (divided into 8 quartiles), 2001 labor productivity (divided into 8 quantiles), altitude (divided into 8 quantiles), coastal features (binary variable), land area (divided into 8 quantiles), and geographical area (categorical variable for North, Centre, South, Islands), and leads to identifying 17 treatment LLMs and 17 control LLMs when considering the whole sample of 579 LLMs, and 15 treatment LLMs and 15 control LLMs when considering the sub-sample of 568 LLMs.[24]

Formally, we test the long-lasting effects of the Lanza reform on LLM-level economic performance through the Ordinary Least Squares (OLS) estimation of the following equation:

$$Labor\ Productivity_l = \alpha + \xi Increased\ Function_{m,l} + \varepsilon_l \quad (5)$$

where $Labor\ Productivity_l$ denotes the labor productivity of LLM l averaged over the period 2001-2005; α is a constant term; $Increased\ Function_{m,l}$ is a binary variable with value zero for all LLMs that do not include a treatment municipality m, and value 1 for all LLMs including a treatment municipality (i.e., a municipality that acquired *ex novo* or increased supra-municipal functions in 1865); ε_l denotes the error term.

[24] Table D1 (Appendix D) presents the structure of the LLM-level dataset. Table D2 (Appendix D) shows the balance test on the two matching procedures.

Table 8 shows the results of the OLS estimation of Equation (5) on the un-matched and matched samples. Specifications (1) and (2) refer to the whole sample of 579 LLMs, while Specifications (3) and (4) refer to the sub-sample of 568 LLMs considering as treatment LLMs only those with a treatment municipality representing at least 25% of the population in 2001. Overall, the results suggest quite a strong long-lasting effect of the Lanza reform on labor productivity at the LLM level, as shown by the positive and statistically significant estimated elasticities.

Table 8: Elasticity of acquired/increased administrative functions on LLM-level average labor productivity (2001-2005).

Estimation method	OLS			
Sample	All LLMs		2001 population of treatement municipality ≥ 25% of LLM	
	Un-matched	Matched	Un-matched	Matched
	(1)	(2)	(3)	(4)
$\text{Increased Function}_{m,l}$	0.0083****	0.0519*	0.0073****	0.0475*
	(0.0020)	(0.0303)	(0.0015)	(0.0276)
No. LLMs	579	34	568	30
No. Treated LLMs	46	17	35	15
No. Control LLMs	533	17	533	15
R^2	0.02	0.08	0.02	0.09

Notes: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$; **** $p < 0.001$. Robust standard errors in parentheses. $Increased\ Function_{m,l}$ is the dummy variable capturing the acquisition/increase of administrative functions that affected municipality m in LLM l with the approval of Law No. 2248/1865. It takes a value of one for LLM including a treatment municipality; it takes a value of zero otherwise. Control units are those LLMs including municipalities with unchanged administrative functions after the approval of Law No. 2248/1865. The sub-sample of LLMs considered in Specifications (3) and (4) is defined by excluding from the treatment group those LLMs where the treatment municipality had a population in the year 2001 representing less than the 25% of the LLM population.

5. Discussion and Conclusions

This paper focuses on the significance of the administrative dimension in the process of urbanization, and on the effects of administrative changes from national reforms on urban population and local development dynamics. Specifically, we analyzed the 1865 Lanza administrative reform reshaping the territorial organization of Italy immediately after unification in 1861. The key ideas underlying the paper were inspired by Gambi (1974), who first noted that the changing urban hierarchy induced by the Lanza reform had an impact on the relative rates of population growth in the municipalities involved. In particular, by analyzing demographic data from historical population censuses, he found

a positive correlation between the location of cities in the urban hierarchy and their population growth.

The fact that administrative interventions could influence urbanization processes by reshaping the urban hierarchy of a country should not surprise. In fact, recent streams of urban economics – largely focusing on China – have reinforced the idea that national and local governments may become promoters of urbanization and city-making processes in a country through administrative reforms, with positive effects on local development (Yin and Liu, 2017). This process has been generally defined by this branch of the literature as 'administrative urbanization' (Liu et al., 2012).

Following this perspective, and using a dataset drawn from Gambi (1974) providing information on the administrative functions of Italian cities for the years 1850 and 1875, our analysis highlights how the 1865 Italian administrative reform stimulated population growth in municipalities that acquired *ex novo* or increased administrative functions at the supra-municipal level compared to those with unchanged functions. In other words, the Lanza reform, by reshaping the geography of the national urban hierarchy, had an important role in determining the geography of long-term demographic dynamics and, thus, of local development patterns in Italy. Indeed, we find both a strong temporal persistence in the population effects of the Lanza reform, and a productivity premium as far forward as the early 2000s for LLMs including municipalities that acquired *ex novo* or increased supra-municipal administrative functions with the Lanza reform compared to those where no municipality underwent an administrative upgrade in 1865.

Our findings corroborate the 'administrative urbanization' hypothesis recently emphasized by scholars with reference to the 1978 Chinese economic and administrative reform, extending the finding to the process of unification of Western countries such as Italy. Indeed, political decision-making dimension through administrative planning is identified as a further mechanism driving urbanization and city growth processes in developed and high-income countries, in addition to market forces (e.g., industrialization) and advantageous natural and geographical conditions. In this sense,

the lesson from Italian unification supports the more recent Chinese literature about the administrative dimension of the process of urban growth and local development.

Our results have relevant policy implications for country- and local-level economic development strategies. On the one hand, although unrealistic as a recommendation to policymakers in developed and market-oriented nation-states established decades or centuries ago in terms of significantly altering the urban structures that emerged over lengthy historical periods (Ganau and Rodríguez-Pose, 2021), it is worth underscoring how targeted interventions aimed at strengthening the administrative functions of minor cities – and, thus, their centrality in the national urban hierarchy – could favor both a more evenly-balanced distribution of functions and a more widespread dissemination and coordination of government powers. This, in turn, could contribute to reducing within-country heterogeneity in bureaucratic efficiency and to improving local institutional environments, with positive effects on local economic development and growth (Rodríguez-Pose and Ganau, 2021). On the other hand, our results may be applied more suitably to transition economies (e.g., European countries such as Albania, Belarus, or Moldova) and developing countries such as the many African nation-states gaining independence in the 1960s, despite their subsequent political fragility and instability (e.g., Benin, Cameron, Senegal). Indeed, policymakers in relatively 'young' countries characterized by a process of administrative (re-)organization that is not yet completed, and the presence of cities that are still evolving, could intervene to shape the national economic geography and promote homogeneous economic development by strengthening sub-national and city-level administrative functions (e.g., Steiner, 2010; Iddawela et al., 2021), and by increasing the centrality of those cities and (still-evolving) urban agglomerations that suffer from a lack of (natural) resources and poor accessibility (e.g., Rodríguez-Pose and Tijmstra, 2007; Castells-Quintana, 2017).

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APPENDIX

APPENDIX A – Sample structure

Table A1: List of municipalities that saw either the loss or a reduction of administrative functions with the approval of Law No. 2248/1865.

Municipality	Geographic Area	Level of Administrative Functions	
		Before 1865	After 1865
Alghero	Islands	Low	No Functions
Camerino	Central Italy	Medium	Low
Cuglieri	Islands	Low	No Functions
Fermo	Central Italy	Medium	Low
Foligno	Central Italy	Low	No Functions
Iglesias	Islands	Low	No Functions
Isili	Islands	Low	No Functions
Lodi	Northern Italy	Medium	Low
Loreto	Central Italy	Low	No Functions
Noto	Islands	Medium	No Functions
Nuoro	Islands	Medium	Low
Orvieto	Central Italy	Medium	Low
Ozieri	Islands	Low	No Functions
Spoleto	Central Italy	Medium	Low
Urbino	Central Italy	Medium	Low
Vercelli	Northern Italy	Medium	Low

Notes: 'No Functions' refers to municipalities with municipal-level administrative functions only. Low-level of administrative functions refers to municipalities with functions at the sub-province level; medium-level refers to municipalities with administrative functions at the province level; high-level refers to municipalities with administrative functions at the pluri-province or pluri-region level. Authors' elaboration on Gambi (1974).

Table A2: List of municipalities that saw either the acquisition *ex novo* or an increase of administrative functions with the approval of Law No. 2248/1865.

Municipality	Geographic Area	Level of Administrative Functions	
		Before 1865	After 1865
Alessandria	Northern Italy	No Functions	Medium
Arezzo	Central Italy	Low	Medium
Avezzano	Southern Italy	No Functions	Low
Bari	Southern Italy	Medium	High
Benevento	Southern Italy	No Functions	Low
Breno	Northern Italy	No Functions	Low
Caltagirone	Islands	No Functions	Low
Castrovillari	Southern Italy	No Functions	Low
Crema	Northern Italy	No Functions	Low
Foggia	Southern Italy	Low	Medium
Forlì	Northern Italy	No Functions	Medium
Gela	Islands	No Functions	Low
Gerace	Southern Italy	No Functions	Low
Isernia	Southern Italy	No Functions	Low
La Spezia	Northern Italy	Low	Medium
Lagonegro	Southern Italy	No Functions	Low
Lamezia Terme	Southern Italy	No Functions	Low
Lanciano	Southern Italy	No Functions	Low
Larino	Southern Italy	No Functions	Low
Lecco	Northern Italy	No Functions	Low
Mistretta	Islands	No Functions	Low
Modica	Islands	No Functions	Low
Mondovì	Northern Italy	No Functions	Low
Monza	Northern Italy	No Functions	Low
Nicosia	Islands	No Functions	Low
Palmi	Southern Italy	No Functions	Low
Patti	Islands	No Functions	Low
Pavullo nel Frignano	Northern Italy	No Functions	Low
Penne	Southern Italy	No Functions	Low
Piacenza	Northern Italy	Low	Medium
Piazza Armerina	Islands	No Functions	Low
Piedimonte Matese	Southern Italy	No Functions	Low
Rossano	Southern Italy	No Functions	Low
Sala Consilina	Southern Italy	No Functions	Low
Salò	Northern Italy	No Functions	Low
Sciacca	Islands	No Functions	Low
Siracusa	Islands	Low	Medium
Sondrio	Northern Italy	Low	Medium
Sora	Central Italy	No Functions	Low
Sulmona	Southern Italy	No Functions	Low
Susa	Northern Italy	No Functions	Low
Teramo	Southern Italy	Low	Medium
Termini Imerese	Islands	No Functions	Low
Terni	Central Italy	No Functions	Low
Vallo della Lucania	Southern Italy	No Functions	Low
Varese	Northern Italy	No Functions	Low

Notes: 'No Functions' refers to municipalities with municipal-level administrative functions only. Low-level of administrative functions refers to municipalities with functions at the sub-province level; medium-level refers to municipalities with administrative functions at the province level; high-level refers to municipalities with administrative functions at the pluri-province or pluri-region level. Authors' elaboration on Gambi (1974).

Table A3: List of municipalities with supra-municipal level functions that remained unchanged with the approval of Law No. 2248/1865.

Municipality	Geographic Area	Level of Administrative Functions	
		Before 1865	After 1865
Acqui Terme	Northern Italy	Low	Low
Agrigento	Islands	Medium	Medium
Alba	Northern Italy	Low	Low
Albenga	Northern Italy	Low	Low
Ancona	Central Italy	High	High
Aosta	Northern Italy	Low	Low
Ascoli Piceno	Central Italy	Medium	Medium
Asti	Northern Italy	Low	Low
Avellino	Southern Italy	Medium	Medium
Bergamo	Northern Italy	Medium	Medium
Bologna	Northern Italy	High	High
Borgo Val di Taro	Northern Italy	Low	Low
Brescia	Northern Italy	Medium	Medium
Cagliari	Islands	High	High
Caltanissetta	Islands	Medium	Medium
Campobasso	Southern Italy	Medium	Medium
Capua	Southern Italy	Low	Low
Carrara	Central Italy	Low	Low
Casale Monferrato	Northern Italy	Low	Low
Caserta	Southern Italy	Medium	Medium
Catania	Islands	Medium	Medium
Catanzaro	Southern Italy	Medium	Medium
Chiavari	Northern Italy	Low	Low
Chiavenna	Northern Italy	Low	Low
Chieti	Southern Italy	Medium	Medium
Como	Northern Italy	Medium	Medium
Cosenza	Southern Italy	Medium	Medium
Cremona	Northern Italy	Medium	Medium
Cuneo	Northern Italy	Medium	Medium
Domodossola	Northern Italy	Low	Low
Ferrara	Northern Italy	Medium	Medium
Fidenza	Northern Italy	Low	Low
Finale Ligure	Northern Italy	Low	Low
Firenze	Central Italy	High	High
Genova	Northern Italy	High	High
Grosseto	Central Italy	Medium	Medium
Imperia	Northern Italy	Low	Low
Ivrea	Northern Italy	Low	Low
L'Aquila	Southern Italy	Medium	Medium
Lanusei	Islands	Low	Low
Lecce	Southern Italy	Medium	Medium
Livorno	Central Italy	Medium	Medium
Lucca	Central Italy	Low	Low
Lucera	Southern Italy	Low	Low
Macerata	Central Italy	Medium	Medium
Massa	Central Italy	Low	Low
Messina	Islands	Medium	Medium
Milano	Northern Italy	High	High
Modena	Northern Italy	Medium	Medium
Montepulciano	Central Italy	Low	Low
Napoli	Southern Italy	High	High
Oristano	Islands	Low	Low
Palermo	Islands	High	High
Parma	Northern Italy	Medium	Medium
Pavia	Northern Italy	Medium	Medium
Perugia	Central Italy	Medium	Medium

Pesaro	Central Italy	Medium	Medium
Pinerolo	Northern Italy	Low	Low
Pisa	Central Italy	Medium	Medium
Pontremoli	Central Italy	Low	Low
Portoferraio	Central Italy	Medium	Medium
Potenza	Southern Italy	Medium	Medium
Ravenna	Northern Italy	Medium	Medium
Reggio di Calabria	Southern Italy	Medium	Medium
Reggio nell'Emilia	Northern Italy	Medium	Medium
Rieti	Central Italy	Low	Low
Rimini	Northern Italy	Low	Low
Rocca San Casciano	Northern Italy	Low	Low
Salerno	Southern Italy	Medium	Medium
Saluzzo	Northern Italy	Low	Low
San Miniato	Central Italy	Low	Low
Sanremo	Northern Italy	Low	Low
Sassari	Islands	Medium	Medium
Savona	Northern Italy	Medium	Medium
Senigallia	Central Italy	Low	Low
Siena	Central Italy	Medium	Medium
Taranto	Southern Italy	Low	Low
Tempio Pausania	Islands	Low	Low
Torino	Northern Italy	High	High
Tortona	Northern Italy	Low	Low
Trani	Southern Italy	Low	Low
Trapani	Islands	Medium	Medium
Varallo	Northern Italy	Low	Low
Verbania	Northern Italy	Low	Low
Vibo Valentia	Southern Italy	Low	Low
Voghera	Northern Italy	Low	Low
Volterra	Central Italy	Low	Low

Notes: Low-level of administrative functions refers to municipalities with functions at the sub-province level; medium-level refers to municipalities with administrative functions at the province level; high-level refers to municipalities with administrative functions at the pluri-province or pluri-region level. Authors' elaboration on Gambi (1974).

Table A4: Distribution of treatment municipalities by level of administrative functions before and after the approval of Law No. 2248/1865.

Before 1865	Level of Administrative Functions				
	After 1865				
	No Functions	Low	Medium	High	Total
No Functions	6,440	**36**	**2**	0	6,478
Low	*7*	40	**7**	0	54
Medium	*1*	*8*	38	**1**	48
High	0	0	0	9	9
Total	6,448	84	47	10	6,589

Notes: 'No Functions' refers to municipalities with municipal-level administrative functions only. Low-level of administrative functions refers to municipalities with functions at the sub-province level; medium-level refers to municipalities with administrative functions at the province level; high-level refers to municipalities with administrative functions at the pluri-province or pluri-region level. Cells referring to treatment municipalities the saw a loss/reduction of administrative functions in italics. Cells referring to treatment municipalities that saw an acquisition/increase of administrative functions in bold. Authors' elaboration on Gambi (1974).

Table A5: Distribution of treatment and control municipalities by geographic area.

Geographic Area	Treatment Municipalities		Control Municipalities	Total
	Loss / Reduction	Acquisition / Increase		
Northern Italy	2	14	3,275	3,291
Central Italy	7	3	735	745
Southern Italy	0	19	1,768	1,787
Islands	7	10	749	766
Total	16	46	6,527	6,589

Notes: Authors' elaboration on Gambi (1974).

APPENDIX B – Main analysis

Table B1: Balance test on matching procedure.

Variable		Mean Value		Difference	
		Treatment Municipalities	Control Municipalities	Value	P-value
Population in 1861	Un-matched	15,873.44	3,209.39	12,664.05	[0.000]
	Matched	17,897.33	14,598.03	3,299.30	[0.229]
Land Area	Un-matched	148.19	36.29	111.90	[0.000]
	Matched	178.00	172.40	5.60	[0.843]
Altitude	Un-matched	311.81	362.03	-50.22	[0.160]
	Matched	326.92	330.79	-3.87	[0.946]
Coastal	Un-matched	0.26	0.09	0.17	[0.000]
	Matched	0.18	0.18	0.00	[1.000]
NUTS-1 Region	Un-matched	1.60	1.00	0.60	[0.000]
	Matched	1.46	1.46	0.00	[1.000]

Notes: Treatment units are those municipalities that saw either a loss/reduction or an acquisition/increase of administrative functions with the approval of Law No. 2248/1865, while control units are those municipalities with unchanged administrative functions after the Lanza reform. The one-to-one exact matching with random sampling of one matched control municipality for each matched treatment municipality is based on population in 1861 (split into 17 quantiles), altitude (split into 17 quantiles), land area (split into 17 quantiles), coastal features (binary variable), geographic area (categorical variable for North, Centre, South, Islands). Number of matched municipalities: 10 treatment municipalities with loss/reduced functions; 29 treatment municipalities with acquired/increased functions; 39 control municipalities with unchanged functions.

Table B2: Balance test on matching procedure – Treatment units are municipalities that were attributed *ex novo* or increased administrative functions with the approval of Law No. 2248/1865.

Variable		Mean Value		Difference	
		Treatment Municipalities	Control Municipalities	Value	P-value
Population in 1861	Un-matched	16,956.83	3,209.39	13747.44	[0.000]
	Matched	19,495.86	13,939.96	5555.90	[0.085]
Land Area	Un-matched	131.58	36.29	95.29	[0.000]
	Matched	162.10	162.65	-0.54	[0.987]
Altitude	Un-matched	310.09	362.03	-51.94	[0.211]
	Matched	345.64	355.14	-9.50	[0.896]
Coastal	Un-matched	0.24	0.09	0.15	[0.001]
	Matched	0.18	0.18	0.00	[1.000]
NUTS-1 Region	Un-matched	1.54	1.00	0.54	[0.001]
	Matched	1.54	1.54	0.00	[1.000]

Notes: Treatment units are those municipalities that were attributed *ex novo* or increased administrative functions with the approval of Law No. 2248/1865, while control units are those municipalities with unchanged administrative functions after the Lanza reform. The one-to-one exact matching with random sampling of one matched control municipality for each matched treatment municipality is based on population in 1861 (split into 17 quantiles), altitude (split into 17 quantiles), land area (split into 17 quantiles), coastal features (binary variable), geographic area (categorical variable for North, Centre, South, Islands). Number of matched municipalities: 28 treatment municipalities; 28 control municipalities.

Table B3: Balance test on matching procedure – Treatment units are municipalities with administrative functions at supra-municipal level attributed *ex novo*, and control units are municipalities with administrative functions at municipal level before and after the reform.

Variable		Mean Value		Difference	
		Treatment Municipalities	Control Municipalities	Value	P-value
Population in 1861	Un-matched	14,877.29	2,680.60	12,196.69	[0.000]
	Matched	16,870.33	12,045.44	4,824.89	[0.136]
Land Area	Un-matched	118.16	34.82	83.35	[0.000]
	Matched	148.95	160.46	-11.51	[0.730]
Altitude	Un-matched	343.87	364.39	-20.52	[0.653]
	Matched	398.94	411.22	-12.28	[0.898]
Coastal	Un-matched	0.21	0.09	0.12	[0.007]
	Matched	0.11	0.11	0.00	[1.000]
NUTS-1 Region	Un-matched	1.61	1.00	0.61	[0.001]
	Matched	1.67	1.67	0.00	[1.000]

Notes: The sample is reduced by considering as treatment units exclusively those municipalities that saw the *ex novo* acquisition of administrative functions at supra-municipal level with the approval of Law No. 2248/1865 (i.e., by excluding those that already had some administrative functions at supra-municipal level before 1865 and saw an increase in their functions with the reform), and as control units exclusively those municipalities that were not endowed with administrative functions at supra-municipal level before 1865 and did not see the attribution of higher level administrative functions with the reform (i.e., by excluding those that had administrative functions at supra-municipal level before 1865 and maintained the same functional level with the approval of Law No. 2248/1865). The one-to-one exact matching with random sampling of one matched control municipality for each matched treatment municipality is based on population in 1861 (split into 17 quantiles), altitude (split into 17 quantiles), land area (split into 17 quantiles), coastal features (binary variable), geographic area (categorical variable for North, Centre, South, Islands). Number of matched municipalities: 18 treatment municipalities; 18 control municipalities.

APPENDIX C – Robustness exercises

Table C1: Elasticity of lost/reduced and acquired/increased administrative functions on population – Two-period analysis.

Estimation method	FE	
Sample	Un-matched	Matched
	(1)	(2)
$\text{Reduced Function}_{m,t}$	0.0002***	0.0013
	(0.0001)	(0.0013)
$\text{Increased Function}_{m,t}$	0.0009***	0.0124*
	(0.0003)	(0.0073)
Municipality FE	Yes	Yes
Year FE	Yes	Yes
Observations	13,178	156
Municipalities	6,589	78
Treatment Municipalities		
Reduced Functions	16	10
Increased Functions	46	29
Control Municipalities	6,527	39
Years	2	2
R^2	0.05	0.24

Notes: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$; **** $p < 0.001$. Robust standard errors in parentheses. $Reduced\ Function_{m,t}$ is the dummy variable capturing the loss/reduction of administrative functions that affected municipality m with the approval of Law No. 2248/1865. $Increased\ Function_{m,t}$ is the dummy variable capturing the acquisition/increase of administrative functions that affected municipality m with the approval of Law No. 2248/1865. Both variables take a value of one for treatment municipalities in census year 1871; they take a value of zero otherwise. Control units are those municipalities with unchanged administrative functions after the approval of Law No. 2248/1865.

Table C2: Balance test on matching procedure excluding population in 1861 as matching variable.

Variable		Mean Value		Difference	
		Treatment Municipalities	Control Municipalities	Value	P-value
Land Area	Un-matched	148.19	36.29	111.90	[0.000]
	Matched	147.81	126.78	21.03	[0.303]
Altitude	Un-matched	311.81	362.03	-50.22	[0.160]
	Matched	314.58	314.88	-0.31	[0.994]
Coastal	Un-matched	0.26	0.09	0.17	[0.000]
	Matched	0.22	0.22	0.00	[1.000]
NUTS-1 Region	Un-matched	1.60	1.00	0.60	[0.000]
	Matched	1.56	1.56	0.00	[1.000]

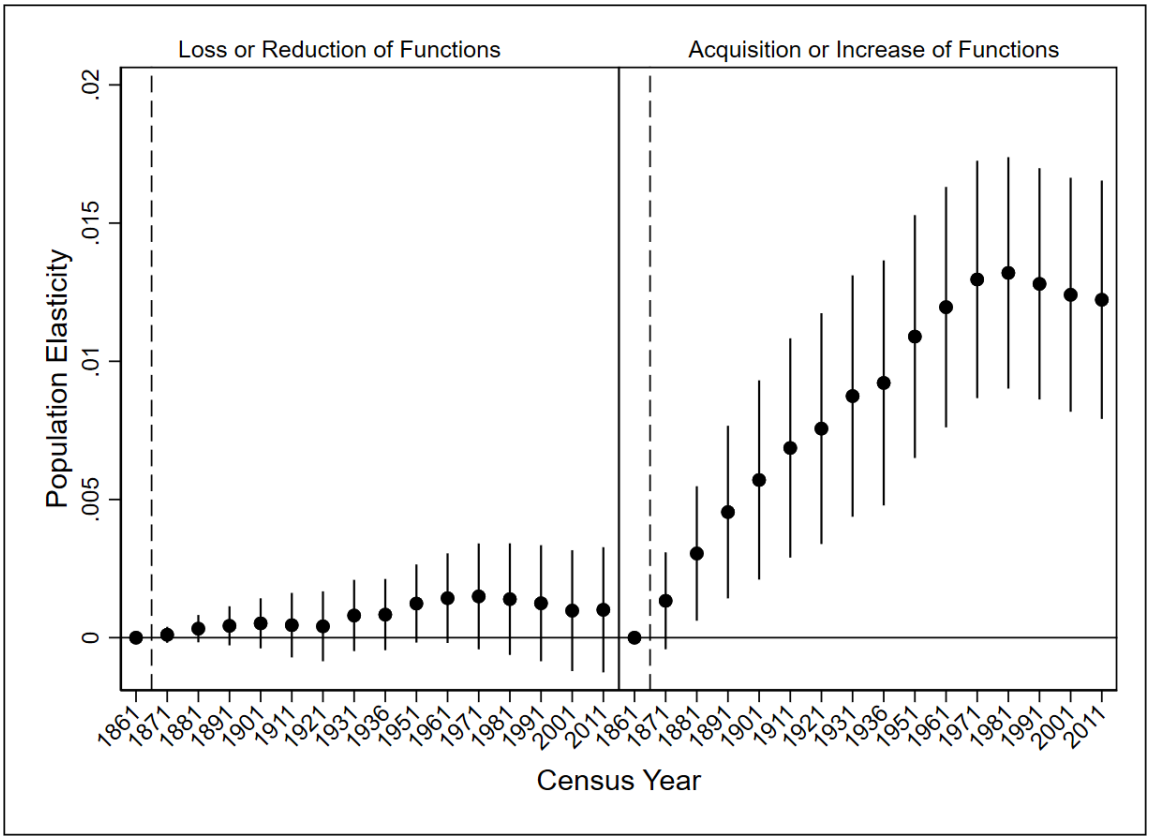
Notes: Treatment units are those municipalities that saw either a loss/reduction or an acquisition/increase of administrative functions with the approval of Law No. 2248/1865, while control units are those municipalities with unchanged administrative functions after the Lanza reform. The one-to-one exact matching with random sampling of one matched control municipality for each matched treatment municipality is based on altitude (split into 17 quantiles), land area (split into 17 quantiles), coastal features (binary variable), geographic area (categorical variable for North, Centre, South, Islands). Number of matched municipalities: 15 treatment municipalities with loss/reduced functions; 44 treatment municipalities with acquired/increased functions; 59 control municipalities with unchanged functions.

Table C3: Elasticity of lost/reduced and acquired/increased administrative functions on population – One-to-one exact matched sample excluding population in 1861 as matching variable.

Estimation method	FE
	(1)
$\text{Reduced Function}_{m,t}$	0.0162
	(0.0145)
$\text{Increased Function}_{m,t}$	0.1633****
	(0.0406)
Municipality FE	Yes
Year FE	Yes
Observations	1,888
Municipalities	118
Treatment Municipalities	
Reduced Functions	15
Increased Functions	44
Control Municipalities	59
Years	16
R^2	0.20

Notes: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$; **** $p < 0.001$. Robust standard errors in parentheses. $Reduced\ Function_{m,t}$ is the dummy variable capturing the loss/reduction of administrative functions that affected municipality m with the approval of Law No. 2248/1865. $Increased\ Function_{m,t}$ is the dummy variable capturing the acquisition/increase of administrative functions that affected municipality m with the approval of Law No. 2248/1865. Both variables take a value of one for treatment municipalities in census year 1871; they take a value of zero otherwise. Control units are those municipalities with unchanged administrative functions after the approval of Law No. 2248/1865.

Figure C1: Elasticity of lost/reduced and acquired/increased administrative functions on population – One-to-one exact matched sample excluding population in 1861 as matching variable – Time-persistency analysis.



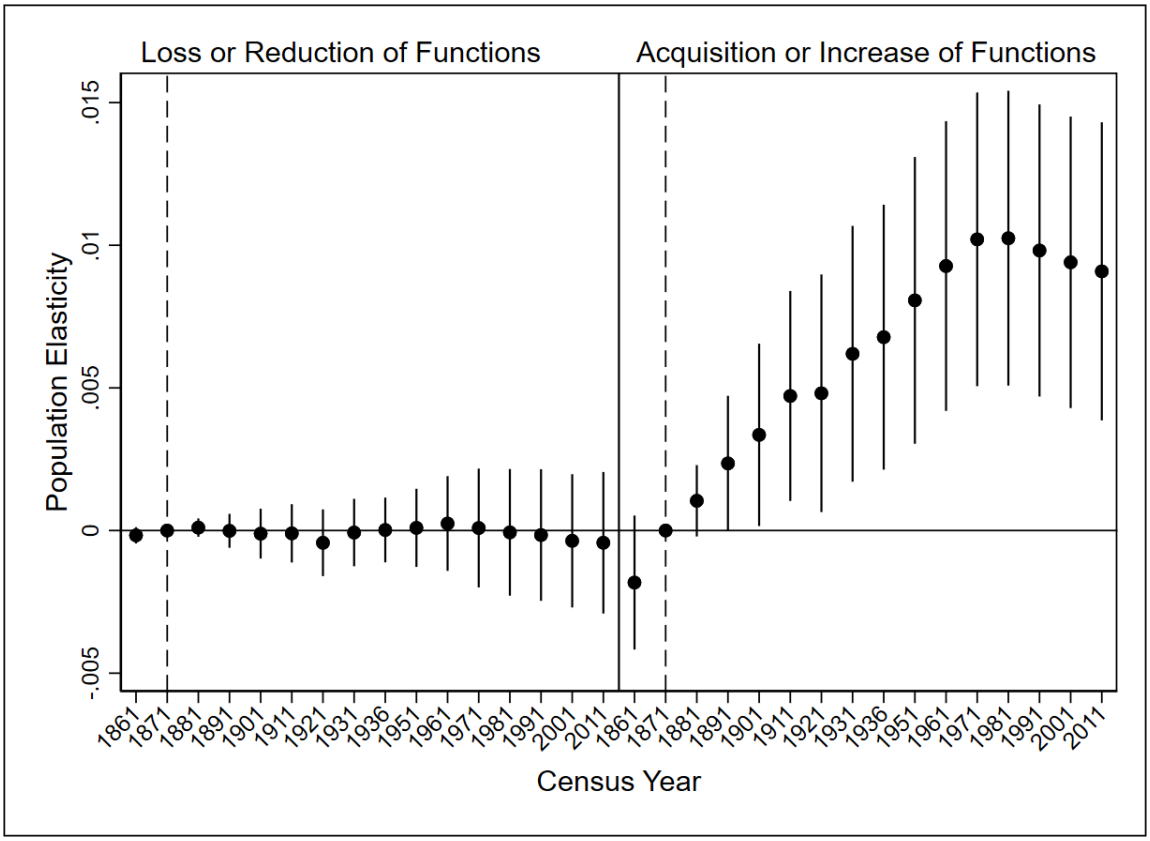
Notes: Estimated elasticities of lead and lag dummy variables defined around the approval year of Law No. 2248/1865 (dashed line). Lead and lag dummy variables are defined with respect to the variables capturing the loss/reduction and acquisition/increase of administrative functions with the approval of Law No. 2248/1865. Control units are those municipalities with unchanged administrative functions after the approval of Law No. 2248/1865. The pre-reform census year 1861 is set as the reference period. Results are obtained through the two-way FE estimation of Equation (2). Model statistics: no. observations = 1,888; no. municipalities = 118; no. treatment municipalities with lost/reduced functions = 15; no. treatment municipalities with acquired/increased functions = 44; no. control municipalities = 59; no. years = 16; $R^2 = 0.27$.

Table C4: Elasticity of lost/reduced and acquired/increased administrative functions on population – Standard errors clustered at different geographic levels.

Estimation method	FE		
Sample	Matched		
Geographic Level of Clustered Standard Errors	Province	Region	Macro-Area
	(1)	(2)	(3)
$\text{Reduced Function}_{m,t}$	0.0003	0.0003	0.0003
	(0.0150)	(0.0155)	(0.0082)
$\text{Increased Function}_{m,t}$	0.1298***	0.1298***	0.1298****
	(0.0466)	(0.0469)	(0.0245)
Municipality FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
No. Observations	1,248	1,248	1,248
No. Municipalities	78	78	78
No. Treatment Municipalities			
Reduced Functions	10	10	10
Increased Functions	29	29	29
No. Control Municipalities	39	39	39
No. Years	16	16	16
R^2	0.27	0.27	0.27

Notes: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$; **** $p < 0.001$. Clustered standard errors in parentheses. $Reduced\ Function_{m,t}$ is the dummy variable capturing the loss/reduction of administrative functions that affected municipality m with the approval of Law No. 2248/1865. $Increased\ Function_{m,t}$ is the dummy variable capturing the acquisition/increase of administrative functions that affected municipality m with the approval of Law No. 2248/1865. Both variables take a value of one for treatment municipalities from census year 1871 onwards; they take a value of zero otherwise. Control units are those municipalities with unchanged administrative functions after the approval of Law No. 2248/1865.

Figure C2: Elasticity of lost/reduced and acquired/increased administrative functions on population – Matched sample – Treatment postponed to 1871 – Time-persistency analysis.



Notes: The presumed effect of the Law No. 2248/1865 is postponed to census year 1871. Estimated elasticities of lead and lag dummy variables defined with respect to census year 1871, which is set as the reference period (dashed line). Results are obtained through the two-way FE estimation of a modified version of Equation (2). Model statistics: no. observations = 1,248; no. municipalities = 78; no. treatment municipalities with lost/reduced functions = 10; no. treatment municipalities with acquired/increased functions = 29; no. control municipalities = 39; no. years = 16; $R^2 = 0.32$.

Table C5: Elasticity of acquired/increased administrative functions on population – Two-period analysis.

Estimation method	FE	
Sample	Un-matched	Matched
	(1)	(2)
Increased Function$_{m,t}$	0.001***	0.016*
	(0.000)	(0.010)
Municipality FE	Yes	Yes
Year FE	Yes	Yes
Observations	13,146	112
Municipalities	6,573	56
Treatment municipalities	46	28
Control municipalities	6,527	28
Years	2	2
R^2	0.05	0.25

Notes: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$; **** $p < 0.001$. Robust standard errors in parentheses. $Increased\ Function_{m,t}$ is the dummy variable capturing the acquisition/increase of administrative functions that affected municipality m with the approval of Law No. 2248/1865. It takes a value of one for treatment municipalities in census year 1871; it takes a value of zero otherwise. Control units are those municipalities with unchanged administrative functions after the approval of Law No. 2248/1865.

Table C6: Balance test on matching procedure excluding population in 1861 as matching variable – Treatment units are municipalities with acquired/increased administrative functions.

Variable		Mean Value		Difference	
		Treatment Municipalities	Control Municipalities	Value	P-value
Land Area	Un-matched	131.58	36.29	95.29	[0.000]
	Matched	133.39	122.06	11.34	[0.594]
Altitude	Un-matched	310.09	362.03	-51.94	[0.211]
	Matched	313.49	322.33	-8.84	[0.860]
Coastal	Un-matched	0.24	0.09	0.15	[0.001]
	Matched	0.22	0.22	0.00	[1.000]
NUTS-1 Region	Un-matched	1.54	1.00	0.54	[0.001]
	Matched	1.51	1.51	0.00	[1.000]

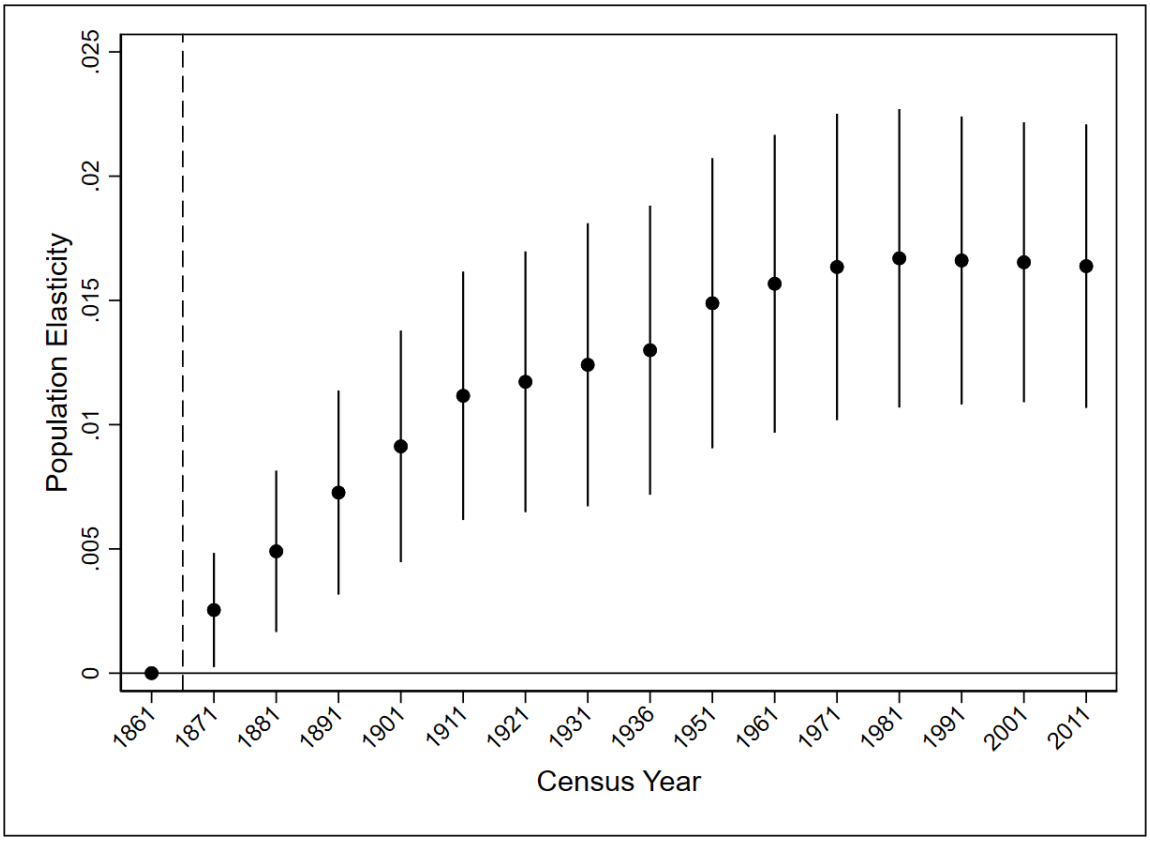
Notes: Treatment units are those municipalities that saw an acquisition/increase of administrative functions with the approval of Law No. 2248/1865, while control units are those municipalities with unchanged administrative functions after the Lanza reform. The one-to-one exact matching with random sampling of one matched control municipality for each matched treatment municipality is based on altitude (split into 17 quantiles), land area (split into 17 quantiles), coastal features (binary variable), geographic area (categorical variable for North, Centre, South, Islands). Number of matched municipalities: 55 treatment municipalities; 45 control municipalities.

Table C7: Elasticity of acquired/increased administrative functions on population – One-to-one exact matched sample excluding population in 1861 as matching variable.

Estimation method	FE
	(1)
$\text{Increased Function}_{m,t}$	0.2222****
	(0.0568)
Municipality FE	Yes
Year FE	Yes
Observations	1,440
Municipalities	90
Treatment Municipalities	45
Control Municipalities	45
Years	16
R^2	0.22

Notes: **** $p < 0.001$. Robust standard errors in parentheses. $Increased\ Function_{m,t}$ is the dummy variable capturing the acquisition/increase of administrative functions for municipality m with the approval of Law No. 2248/1865. The variable takes a value of one for treatment municipalities from census year 1871 onwards; it takes a value of zero otherwise. Control units are those municipalities with unchanged administrative functions after the approval of Law No. 2248/1865.

Figure C3: Elasticity of acquired/increased administrative functions on population – One-to-one exact matched sample excluding population in 1861 as matching variable – Time-persistence analysis.



Notes: Estimated elasticities of lead and lag dummy variables defined around the approval year of Law No. 2248/1865 (dashed line). Lead and lag dummy variables are defined with respect to the variable capturing the acquisition/increase of administrative functions with the approval of Law No. 2248/1865. Control units are those municipalities with unchanged administrative functions after the approval of Law No. 2248/1865. The pre-reform census year 1861 is set as the reference period. Results are obtained through the two-way FE estimation of Equation (4) in the Manuscript. Model statistics: no. observations = 1,140; no. municipalities = 90; no. treatment municipalities = 45; no. control municipalities = 45; no. years = 16; $R^2 = 0.27$.

Table C8: Balance test on Propensity Score matching procedure.

Variable		Mean Value		Difference	
		Treatment Municipalities	Control Municipalities	Value	P-value
Population in 1861	Un-matched	16,956.83	3,209.39	13,747.44	[0.000]
	Matched	16,956.83	11,571.00	5,385.83	[0.216]
Land Area	Un-matched	131.58	36.29	95.29	[0.000]
	Matched	131.58	124.66	6.92	[0.769]
Altitude	Un-matched	310.09	362.03	-51.94	[0.211]
	Matched	310.09	263.33	46.76	[0.300]
Coastal	Un-matched	0.24	0.09	0.15	[0.001]
	Matched	0.24	0.35	-0.11	[0.257]
NUTS-1 Region					
Centre	Un-matched	0.07	0.11	-0.05	[0.310]
	Matched	0.07	0.07	0.00	[1.000]
South	Un-matched	0.41	0.27	0.14	[0.031]
	Matched	0.41	0.61	-0.20	[0.062]
Islands	Un-matched	0.22	0.11	0.10	[0.030]
	Matched	0.22	0.20	0.02	[0.799]

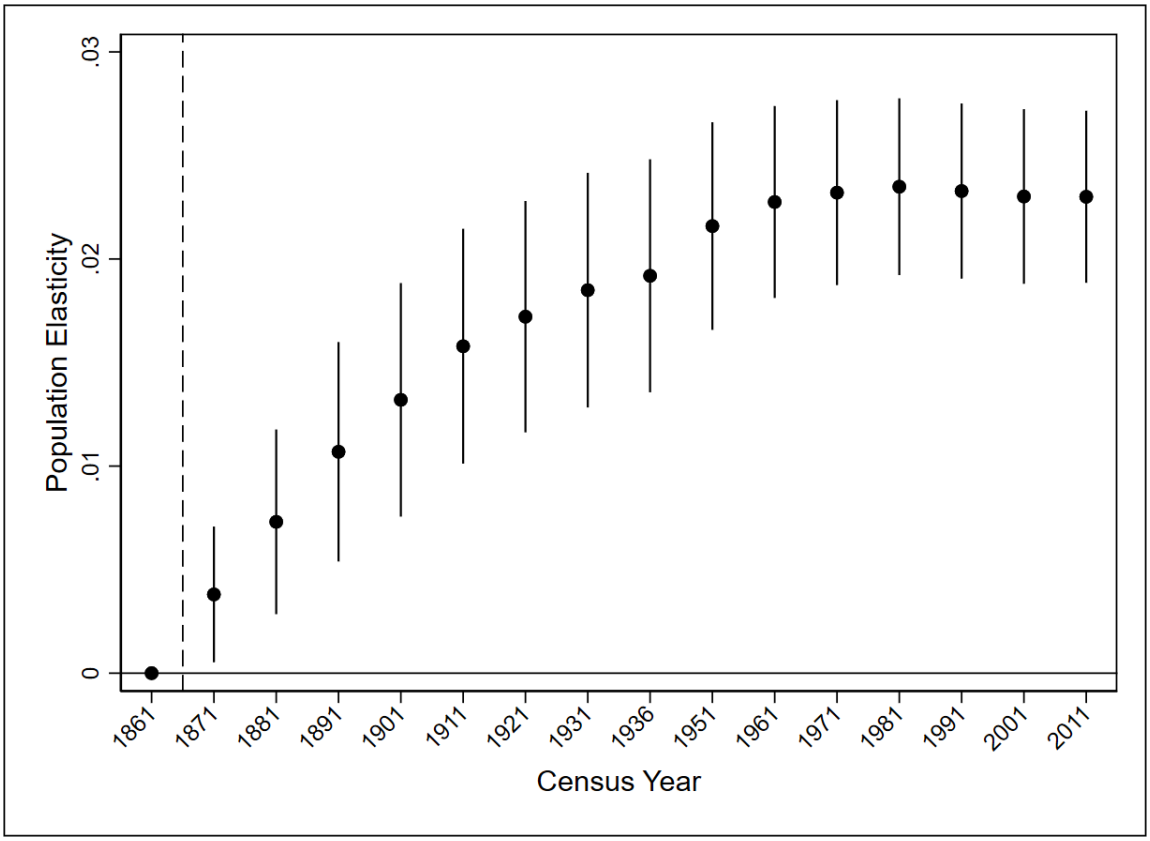
Notes: Treatment units are those municipalities that saw an acquisition/increase of administrative functions with the approval of Law No. 2248/1865, while control units are those municipalities with unchanged administrative functions after the Lanza reform. One-to-one Propensity Score matching without replacement, based on Probit regression. Matching is based on population in 1861, altitude, land area, coastal features (binary variable), dummies for geographic area (Centre, South, Islands, with North set as the reference category). Number of matched municipalities: 46 treatment municipalities; 46 control municipalities.

Table C9: Elasticity of acquired/increased administrative functions on population – Propensity Score matched sample.

Estimation method	FE
	(1)
$\text{Increased Function}_{m,t}$	0.3181****
	(0.0543)
Municipality FE	Yes
Year FE	Yes
Observations	1,472
Municipalities	92
Treatment Municipalities	46
Control Municipalities	46
Years	16
R^2	0.17

Notes: **** $p < 0.001$. Robust standard errors in parentheses. $Increased\ Function_{m,t}$ is the dummy variable capturing the acquisition/increase of administrative functions for municipality m with the approval of Law No. 2248/1865. The variable takes a value of one for treatment municipalities from census year 1871 onwards; it takes a value of zero otherwise. Control units are those municipalities with unchanged administrative functions after the approval of Law No. 2248/1865.

Figure C4: Elasticity of acquired/increased administrative functions on population – Propensity Score matched sample, time-persistency analysis.



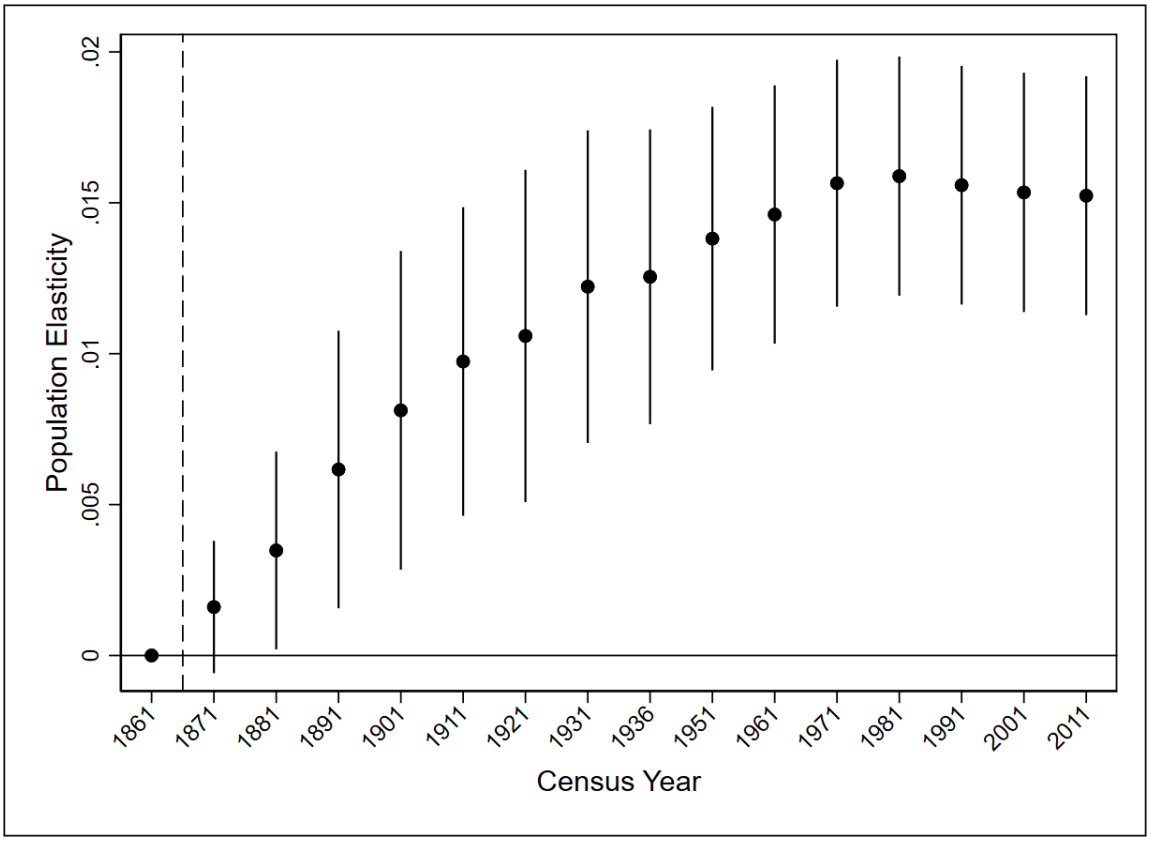
Notes: Estimated elasticities of lead and lag dummy variables defined around the approval year of Law No. 2248/1865 (dashed line). Lead and lag dummy variables are defined with respect to the variable capturing the acquisition/increase of administrative functions with the approval of Law No. 2248/1865. Control units are those municipalities with unchanged administrative functions after the approval of Law No. 2248/1865. The pre-reform census year 1861 is set as the reference period. Results are obtained through the two-way FE estimation of Equation (4) in the Manuscript. Model statistics: no. observations = 1,472; no. municipalities = 72; no. treatment municipalities = 46; no. control municipalities = 46; no. years = 16; $R^2 = 0.28$.

Table C10: Elasticity of acquired/increased administrative functions on population – Inverse Probability Weighting scheme.

Estimation method	FE
	(1)
$\text{Increased Function}_{m,t}$	0.2044****
	(0.0444)
Municipality FE	Yes
Year FE	Yes
Observations	105,168
Municipalities	6,573
Treatment Municipalities	46
Control Municipalities	6,527
Years	16
R^2	0.10

Notes: **** $p < 0.001$. Robust standard errors in parentheses. $Increased\ Function_{m,t}$ is the dummy variable capturing the acquisition/increase of administrative functions for municipality m with the approval of Law No. 2248/1865. The variable takes a value of one for treatment municipalities from census year 1871 onwards; it takes a value of zero otherwise. Control units are those municipalities with unchanged administrative functions after the approval of Law No. 2248/1865.

Figure C5: Elasticity of acquired/increased administrative functions on population – Inverse Probability Weighting scheme, time-persistency analysis.



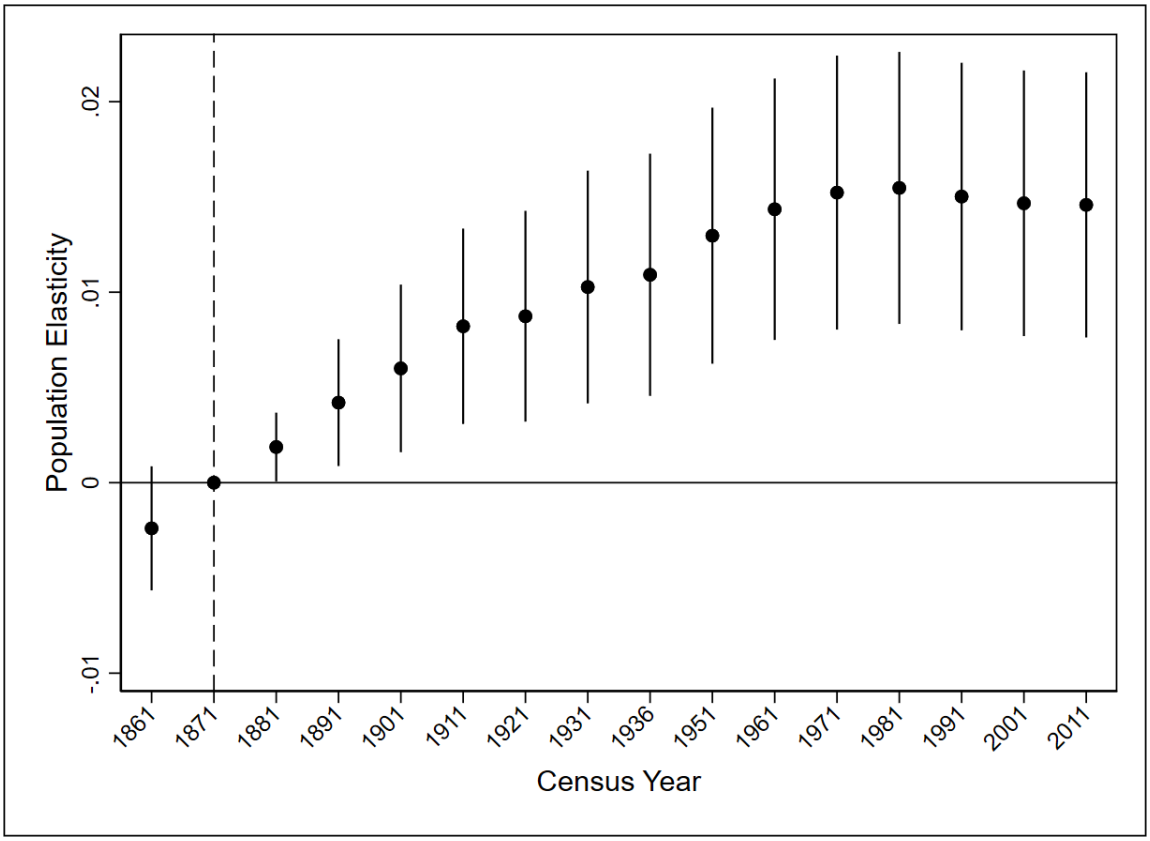
Notes: Estimated elasticities of lead and lag dummy variables defined around the approval year of Law No. 2248/1865 (dashed line). Lead and lag dummy variables are defined with respect to the variable capturing the acquisition/increase of administrative functions with the approval of Law No. 2248/1865. Control units are those municipalities with unchanged administrative functions after the approval of Law No. 2248/1865. The pre-reform census year 1861 is set as the reference period. Results are obtained through the two-way FE estimation of Equation (4) in the Manuscript. Model statistics: no. observations = 105,168; no. municipalities = 6,573; no. treatment municipalities = 46; no. control municipalities = 6,527; no. years = 16; $R^2 = 0.15$.

Table C11: Elasticity of acquired/increased administrative functions on population – Standard errors clustered at different geographic levels.

Estimation method	FE		
Sample	Matched		
Geographic Level of Clustered Standard Errors	Province	Region	Macro-Area
	(1)	(2)	(3)
$\text{Increased Function}_{m,t}$	0.2044***	0.2044***	0.2044****
	(0.0657)	(0.0636)	(0.0266)
Municipality FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
No. Observations	896	896	896
No. Municipalities	56	56	56
No. Treatment Municipalities	28	28	28
No. Control Municipalities	28	28	28
No. Years	16	16	16
R^2	0.26	0.26	0.26

Notes: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$; **** $p < 0.001$. Clustered standard errors in parentheses. $Increased\ Function_{m,t}$ is the dummy variable capturing the acquisition/increase of administrative functions that affected municipality m with the approval of Law No. 2248/1865. It takes a value of one for treatment municipalities from census year 1871 onwards; it takes a value of zero otherwise. Control units are those municipalities with unchanged administrative functions after the approval of Law No. 2248/1865.

Figure C6: Elasticity of acquired/increased administrative functions on population – Matched sample – Treatment postponed to 1871 – Time-persistency analysis.



Notes: The presumed effect of the Law No. 2248/1865 is postponed to census year 1871. Estimated elasticities of lead and lag dummy variables defined with respect to census year 1871, which is set as the reference period (dashed line). Results are obtained through the two-way FE estimation of a modified version of Equation (4). Model statistics: no. observations = 896; no. municipalities = 56; no. treatment municipalities = 28; no. control municipalities = 28; no. years = 16; $R^2 = 0.32$.

Table C12: Balance test on matching procedure excluding population in 1861 as matching variable – Treatment units are municipalities with administrative functions at supra-municipal level attributed *ex novo*, and control units are municipalities with administrative functions at municipal level before and after the Lanza reform.

Variable		Mean Value		Difference	
		Treatment Municipalities	Control Municipalities	Value	P-value
Land Area	Un-matched	118.16	34.82	83.35	[0.000]
	Matched	114.11	115.44	-1.33	[0.958]
Altitude	Un-matched	343.87	364.39	-20.52	[0.653]
	Matched	374.55	378.33	-3.79	[0.948]
Coastal	Un-matched	0.21	0.09	0.12	[0.007]
	Matched	0.18	0.18	0.00	[1.000]
NUTS-1 Region	Un-matched	1.61	1.00	0.61	[0.001]
	Matched	1.58	1.58	0.00	[1.000]

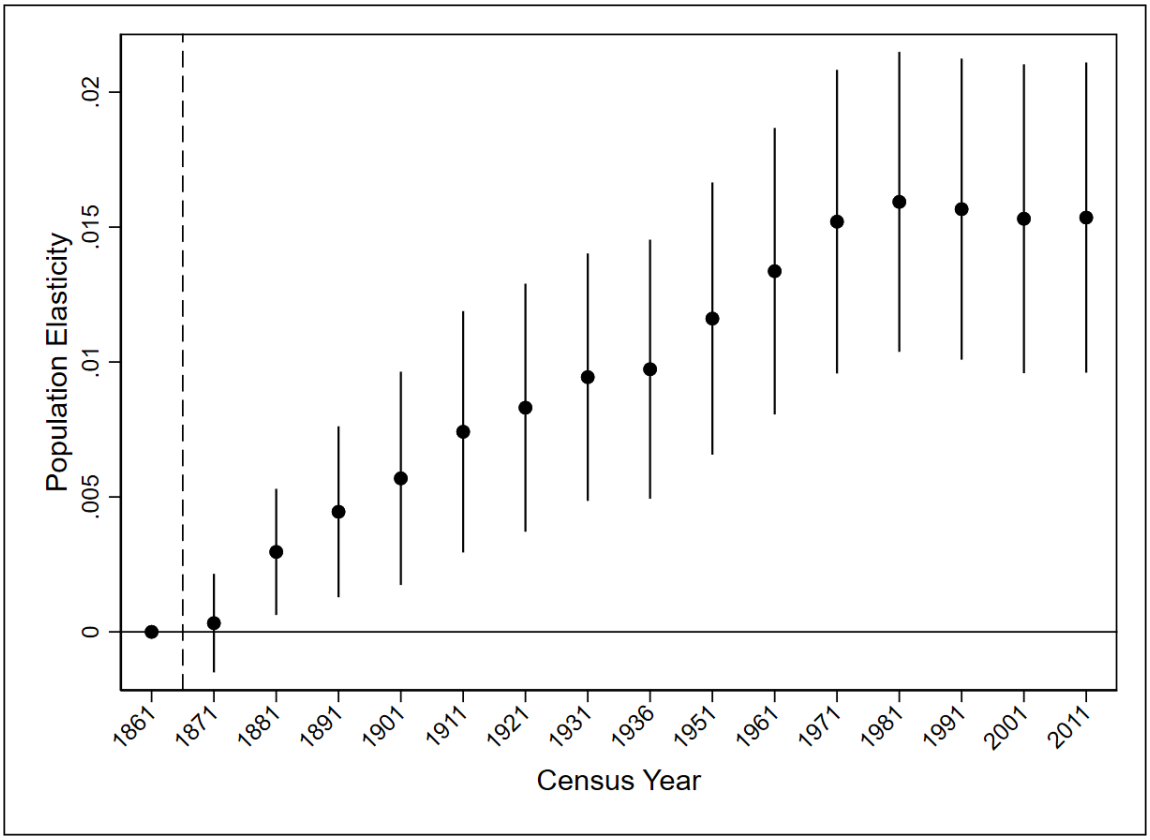
Notes: The sample is reduced by considering as treatment units exclusively those municipalities that saw the *ex novo* acquisition of administrative functions at supra-municipal level with the approval of Law No. 2248/1865 (i.e., by excluding those that already had some administrative functions at supra-municipal level before 1865 and saw an increase in their functions with the reform), and as control units exclusively those municipalities that were not endowed with administrative functions at supra-municipal level before 1865 and did not see the attribution of higher level administrative functions with the reform (i.e., by excluding those that had administrative functions at supra-municipal level before 1865 and maintained the same functional level with the approval of Law No. 2248/1865). The one-to-one exact matching with random sampling of one matched control municipality for each matched treatment municipality is based on altitude (split into 17 quantiles), land area (split into 17 quantiles), coastal features (binary variable), geographic area (categorical variable for North, Centre, South, Islands). Number of matched municipalities: 33 treatment municipalities; 33 control municipalities.

Table C13: Elasticity of *ex novo* acquisition of administrative functions on population – One-to-one exact matched sample excluding population in 1861 as matching variable.

Estimation method	FE
	(1)
$\text{Acquired Function}_{m,t}$	0.1828****
	(0.0493)
Municipality FE	Yes
Year FE	Yes
Observations	1,056
Municipalities	66
Treatment Municipalities	33
Control Municipalities	33
Years	16
R^2	0.23

Notes: * $p < 0.1$; **** $p < 0.001$. Robust standard errors in parentheses. $Acquired\ Function_{m,t}$ is the dummy variable capturing the *ex novo* acquisition of administrative functions by municipality m with the approval of Law No. 2248/1865. The variable takes a value of one for treatment municipalities from census year 1871 onwards; it takes a value of zero otherwise. Treatment units are municipalities with municipal-level administrative functions before 1865, and that acquired functions at supra-municipal level with the Lanza reform. Control units are municipalities with municipal-level functions before 1865, and did not see the attribution of functions at supra-municipal level with the 1865 reform.

Figure C7: Elasticity of *ex novo* acquisition of administrative functions on population – One-to-one exact matched sample excluding population in 1861 as matching variable – Time-persistency analysis.



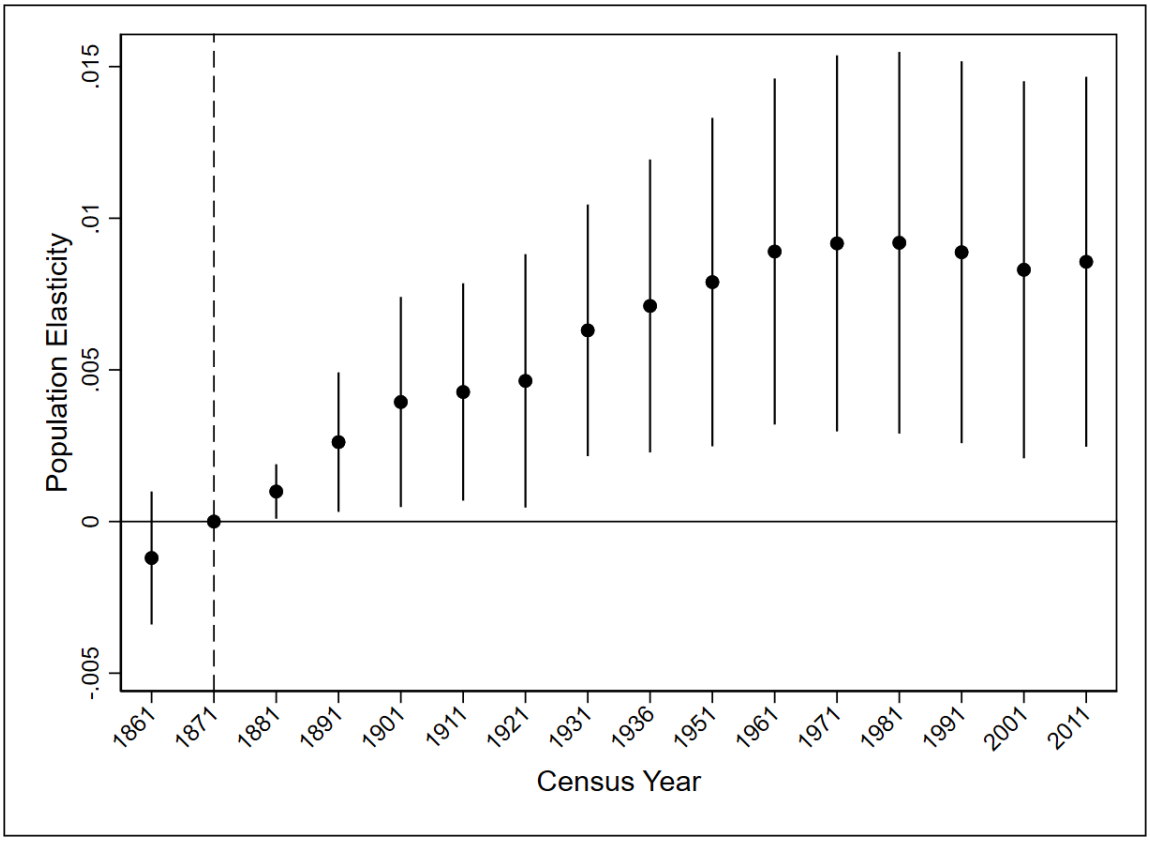
Notes: Estimated elasticities of lead and lag dummy variables defined around the approval year of Law No. 2248/1865 (dashed line). Lead and lag dummy variables are defined with respect to the variable capturing the *ex novo* acquisition of administrative functions with the approval of Law No. 2248/1865. Treatment units are municipalities with municipal-level administrative functions before 1865, and that acquired functions at supra-municipal level with the Lanza reform. Control units are municipalities with municipal-level functions before 1865, and did not see the attribution of functions at supra-municipal level with the 1865 reform. The pre-reform census year 1861 is set as the reference period. Results are obtained through the two-way FE estimation of the modified version of Equation (4) in the Manuscript. Model statistics: no. observations = 1,056; no. municipalities = 66; no. treatment municipalities = 33; no. control municipalities = 33; no. years = 16; $R^2 = 0.31$.

Table C14: Elasticity of *ex novo* acquisition of administrative functions on population – Standard errors clustered at different geographic levels.

Estimation method	FE		
Sample	Matched		
Geographic Level of Clustered Standard Errors	Province	Region	Macro-Area
	(1)	(2)	(3)
$\text{Acquired Function}_{m,t}$	0.1167**	0.1167**	0.1167*
	(0.0585)	(0.0524)	(0.0596)
Municipality FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
No. Observations	576	576	576
No. Municipalities	36	36	36
No. Treatment Municipalities	18	18	18
No. Control Municipalities	18	18	18
No. Years	16	16	16
R^2	0.33	0.33	0.33

Notes: * $p < 0.1$; **** $p < 0.001$. Clustered standard errors in parentheses. $Acquired\ Function_{m,t}$ is the dummy variable capturing the *ex novo* acquisition of administrative functions by municipality m with the approval of Law No. 2248/1865. The variable takes a value of one for treatment municipalities from census year 1871 onwards; it takes a value of zero otherwise. Treatment units are municipalities with municipal-level administrative functions before 1865, and that acquired functions at supra-municipal level with the Lanza reform. Control units are municipalities with municipal-level functions before 1865, and did not see the attribution of functions at supra-municipal level with the 1865 reform.

Figure C8: Elasticity of *ex novo* acquisition of administrative functions on population – Matched sample – Treatment postponed to 1871 – Time-persistency analysis.



Notes: The presumed effect of the Law No. 2248/1865 is postponed to census year 1871. Estimated elasticities of lead and lag dummy variables defined with respect to census year 1871, which is set as the reference period (dashed line). Lead and lag dummy variables are defined with respect to the variable capturing the *ex novo* acquisition of administrative functions with the approval of Law No. 2248/1865. Treatment units are municipalities with municipal-level administrative functions before 1865, and that acquired functions at supra-municipal level with the Lanza reform. Control units are municipalities with municipal-level functions before 1865, and did not see the attribution of functions at supra-municipal level with the 1865 reform. Results are obtained through the two-way FE estimation of a modified version of Equation (4). Model statistics: no. observations = 576; no. municipalities = 36; no. treatment municipalities = 18; no. control municipalities = 18; no. years = 16; $R^2 = 0.36$.

APPENDIX D – LLM-level analysis

Table D1: Structure of LLM sample.

Sample	Treatment LLMs	Control LLMs	Total
All LLMs			
Un-matched	46	533	579
Matched	17	17	34
2001 population of treated municipality ≥ 25% of LLM			
Un-matched	35	533	568
Matched	15	15	30

Notes: Treatment units are those LLMs including a municipality that saw the acquisition/increase of administrative functions with the approval of Law No. 2248/1865. Control units are those LLMs including municipalities with unchanged administrative functions after the approval of Law No. 2248/1865. The sub-sample of LLMs considered in the lower panel is defined by excluding from the treatment group those LLMs where the treatment municipality had a population in the year 2001 representing less than the 25% of the LLM population.

Table D2: Balance test on matching procedure – LLM sample.

All LLMs					
Variable		Mean Value		Difference	
		Treatment LLMs	Control LLMs	Value	P-value
Employment Density in 2001	Un-matched	95.92	65.13	30.79	[0.073]
	Matched	158.54	71.55	86.99	[0.254]
Labor Productivity in 2001 (×10)	Un-matched	0.43	0.39	0.04	[0.001]
	Matched	0.45	0.42	0.03	[0.304]
Altitude	Un-matched	399.00	367.53	31.48	[0.395]
	Matched	390.26	325.85	64.41	[0.417]
Coastal	Un-matched	0.37	0.33	0.04	[0.606]
	Matched	0.29	0.29	0.00	[1.000]
Land Area	Un-matched	625.26	400.58	224.68	[0.000]
	Matched	743.20	685.44	57.76	[0.662]
NUTS-1 Region	Un-matched	3.07	2.76	0.30	[0.075]
	Matched	2.88	2.88	0.00	[1.000]
2001 population of treated municipality ≥ 25% of LLM					
Variable		Mean Value		Difference	
		Treatment LLMs	Control LLMs	Value	P-value
Employment Density in 2001	Un-matched	74.11	65.13	8.98	[0.611]
	Matched	82.93	45.36	37.57	[0.165]
Labor Productivity in 2001 (×10)	Un-matched	0.44	0.39	0.05	[0.001]
	Matched	0.45	0.42	0.03	[0.311]
Altitude	Un-matched	401.09	367.53	33.56	[0.428]
	Matched	411.99	346.38	65.62	[0.441]
Coastal	Un-matched	0.37	0.33	0.04	[0.633]
	Matched	0.27	0.27	0.00	[1.000]
Land Area	Un-matched	617.64	400.58	217.06	[0.000]
	Matched	698.42	607.02	91.40	[0.365]
NUTS-1 Region	Un-matched	2.91	2.76	0.15	[0.433]
	Matched	2.80	2.80	0.00	[1.000]

Notes: Treatment units are those LLMs including a municipality that saw the acquisition/increase of administrative functions with the approval of Law No. 2248/1865. Control units are those LLMs including municipalities with unchanged administrative functions after the approval of Law No. 2248/1865. The sub-sample of LLMs considered in the lower panel is defined by excluding from the treatment group those LLMs where the treatment municipality had a population in the year 2001 representing less than the 25% of the LLM population. The one-to-one exact matching with random sampling of one matched control LLM for each matched treatment LLM is based on employment density in 2001 (split into 8 quantiles), labor productivity in 2001 (split into 8 quantiles), altitude (split into 8 quantiles), coastal features (binary variable), land area (split into 8 quantiles), geographic area (categorical variable for North, Centre, South, Islands). Number of matched LLMs in whole sample (upper panel): 17 treatment LLMs; 17 control LLMs. Number of matched LLMs in reduced sample (lower panel): 15 treatment LLMs; 15 control LLMs.