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History, institutions, and regional development in Italy

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HISTORY, INSTITUTIONS, AND REGIONAL DEVELOPMENT IN ITALY

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To my parents,

for their silent loving self-sacrifice.

Grazie.

「フライング、高く、高く
フライング、遠く、遠く
そう、どこへでも
いける」

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1. Introduction

In their fascinating book *Why Nations Fail*, Acemoglu and Robinson (2012) explained how two neighbor cities can differ remarkably in terms of living standards although no differences in culture, climate and even in the name (Nogales) exist. The only element that separates them is a fence defining a national border, since one belongs to United States and the other to Mexico. Then, the only distinction are the institutions under which the two cities have been subjected since 1848, when the current border was defined after the Mexican-American War.

The main lesson they convey concerns the importance of institutions as main determinant of disparities in development between the two 'Nogaleses' in particular and across countries in general, as well as the fact that such impact reverberates over time creating path dependence. In fact, for centuries Mexican institutions consisted in oligarchic and instable governments ruling a very unequal and hierarchical society, as consequence of the colonial system based on exploitation of natives perfected by the Spanish settlers. The democratic institutions of United States, instead, are based upon principles of common participation and equality implemented as a result of the failure in implementing the same Spanish colonial system by the English settlers, which were unable to enslave the natives, then were forced to establish a more horizontal and collaborative society in order to survive.

On the other shore of the Atlantic Ocean, nowadays Italy shares with the two cities the same picture of inequality, according to which North and South displays profound socioeconomic differences, even if sharing the same history and institutions for 154 years.

Researchers have investigated why such sizeable divergence exist and still persist today, questioning whether it has its causes in circumstances subsequent the unification or it has roots far deeper in the past.

This work provides an overview of the regional disparities in development conditions at time of unification and afterwards, reporting how significant differences existed already between North and South prior to 1861 and widened in the Liberal period (1861-1914) when the first industrialization process started in the country.

In the second part of the work, using past and current data gathered from various sources, the relationship between regional inequality in development and social capital is analyzed, in the attempt to unfold its effect and provide an evidence of the path dependence caused by differences in institutions.

As widely stated in the literature (Putnam, 1993, among others) institutional performance is a main determinant of regional divergence in development, even when taking into account geography. In the case under study,

institutions seem to dominate social capital: the latter is indeed positively related to development, but when geography and institutional performance are partialled out, its relationship with the measure of regional development become weak and in certain cases even slightly negative. In particular, the proposed proxies for post-unification social capital does not help as instruments in the quest for solving the endogeneity issue mainly due to simultaneous causality between inequality and social capital (see also Rothstein and Uslaner, 2005).

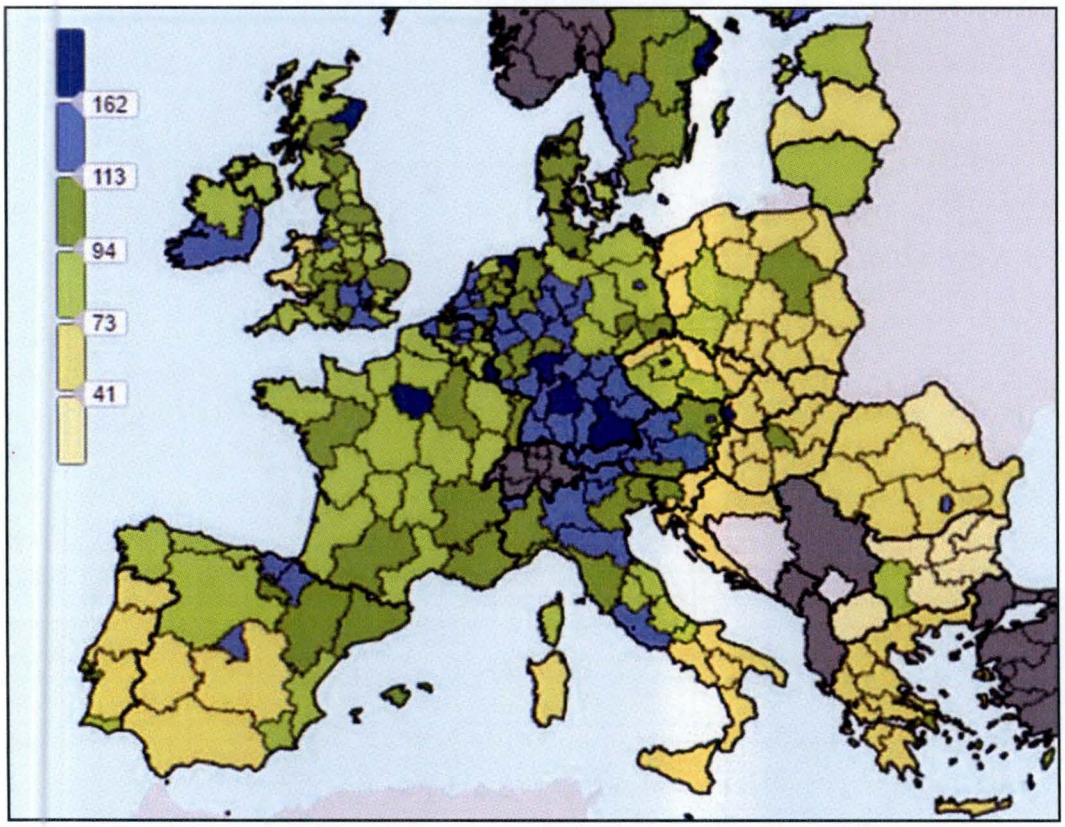
The work is organized as follows: in section 2 (§2) a literature review about the origins and the sources of the regional inequality in Italy is illustrated; in §3 the data for the empirical analysis are presented; in §4 the econometric methodology is discussed; in §5 the results of the analysis are displayed and commented; finally, in §6 final remarks conclude.

2. The Birth of the Southern Question

A matter of inequality, industrialization and institutions

In 1873, during a daily Parliament session, the Lombard deputy Antonio Billia complained about the dramatic socio-economic situation of poverty and unrest burdening the former Two Sicilies provinces by coining the phrase "*Questione Meridionale*" (Southern Question), still in use nowadays. Then, some scholars and politicians –grouped under the name of *meridionalisti*– started to inquiry the backwardness of southern Italy in its causes and especially in its implications for the newborn kingdom, in order to ascertain whether the roots of underdevelopment were atavistic and dating back to pre-unification conditions or a successive to the *Risorgimento*.
Despite the implemented *ad hoc* programs (like the *Cassa per il Mezzogiorno*, a public fund created in the aftermath of the second world war and devoted to promote investments and reduce the infrastructural gap of the south), the Italy's North-South divide remains the most important case of failed regional convergence in Western Europe (Trigilia, 2012). Currently, in terms of mere GDP per capita, the Mezzogiorno falls below the three forth of the EU average, equating the levels of Eastern Europe (Figure 2.1).

Figure 2.1 – GDP per capita in European Union at NUTS-2 level, 2014



Source: Eurostat.

2.1. Regional Disparities: a) Income

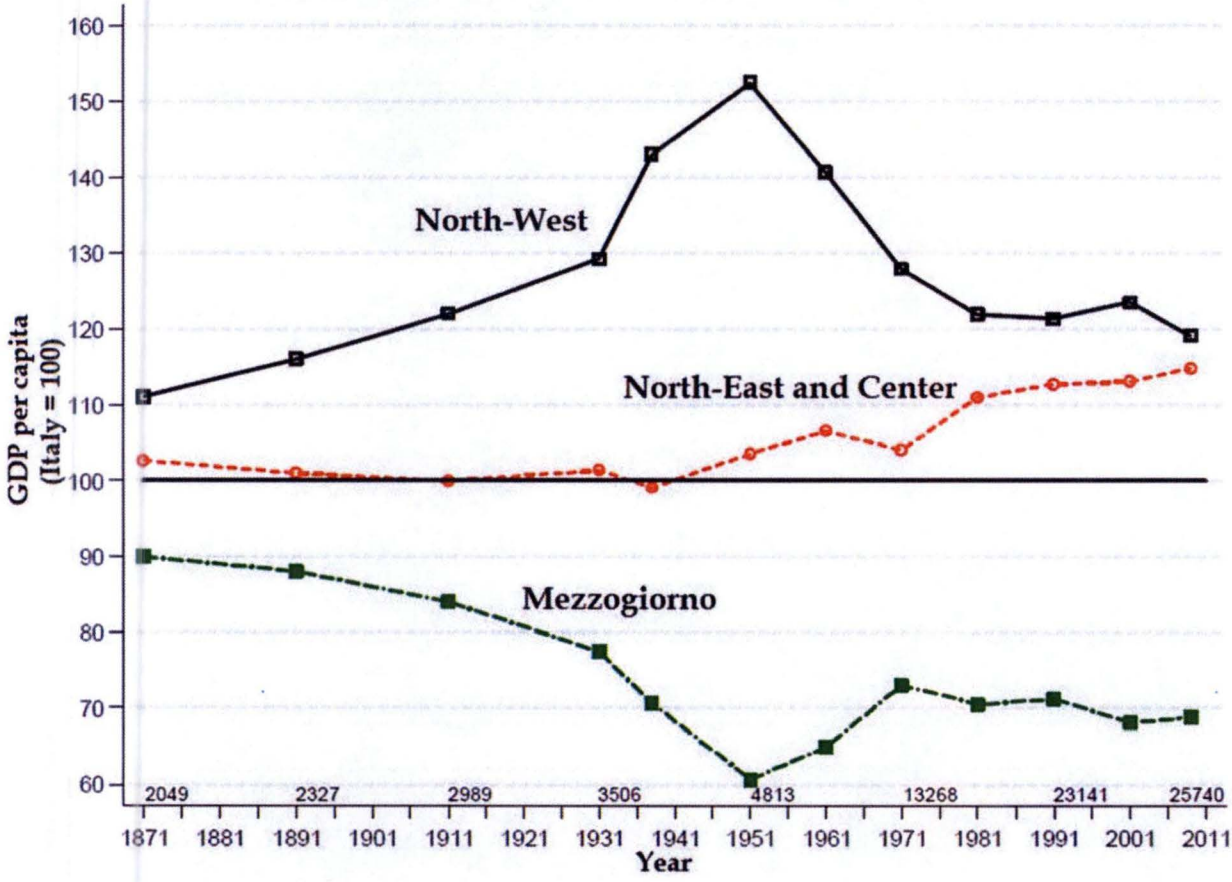
When it comes to measure the regional income at the dawn of Kingdom of Italy, the estimates are considered quite unreliable, especially for the period prior to 1870 (Zamagni, 2012; Felice, 2015). That underlying uncertainty has caused a division between the proponents of a small or negligible income gap (Daniele and Malanima, 2011; 2014; Nitti, 1905) and the advocates of an already significant North-South disparity at time of the unification (among others: Iuzzolino, Pellegrino and Viesti, 2013; Felice, 2007; 2015; Felice and Vecchi, 2015; Zamagni, 1993; 2012). Notwithstanding, a broad consensus developed in affirming the condition of relative underdevelopment of the Mezzogiorno, thanks to the use of not only economic outcomes but also other available data regarding socio-demographic phenomena and growth prerequisites (social overhead and human capital above all).

According to Daniele and Malanima (2011; 2014), in the first phases of unification, a divergence existed more within regions in the North and within regions in the South than between those two macroareas. Besides, they highlight the existence of a more marked West-East divide (also Iuzzolino, Pellegrino and Viesti, 2013), probably because of geographical factors: the capitals –hence the more developed areas– of the concerned pre-unifications States (Rome, Naples) faced the Tyrrhenian coast, with the mountain range of Apennines dividing them from the Adriatic coast. Over time, however, the within macroregion disparities were replaced by a more polarized North-South gap, which kept widening for a century after the unification. Around the 1950s, the divergence peaked: the GDP per capita of the South (including the islands) was almost half of the rest of the country (Figure 2.2-3).

Moreover, one of the main reason why the economic differences across regions were negligible at unification puts stress on the fact that the entire peninsula had not experienced a real industrial transition yet (Iuzzolinoet al., 2013), while it was in a broad disadvantaged position with respect to England and other European countries (Table 2.1). Such homogeneity translates in a lower regional inequality in comparison to Austria-Hungary, France, Germany, Spain and United Kingdom. Nonethe-less, from 1871 to 1911 the divergence in regional per capita income doubled (Table 2.2), further evidence that the main diverging trend started after the unification.

In his book *Nord e Sud* the *meridionalista* and future prime minister Francesco Saverio Nitti wrote: «Prior to 1860 there was almost no sign of large industry anywhere in the peninsula. Lombardy, now so proud of its factories, had nearly nothing else but agriculture; Piedmont was a land of farms and frugality, at least in the habits of its citizens. Central Italy, southern Italy and Sicily were in a condition of a really modest economic development. Entire provinces, entire regions were almost closed up to any civilization» (Nitti, 1900).

Figure 2.2 – From three to two «Italies»: the regional convergence in GDP per capita, 1871–2011



Source: Felice (2015)

Figure 2.3 – Share of North-South disparity of total regional disparity

Source: Daniele and Malanima (2014)

Table 2.1 – Wealth of advanced economies, GDP per capita in 1990 USD PPP, 1500-1870

	Italy	United Kingdom	France	Germany	Japan	Western Europe (WE)	Italy as share of WE
1500	1,100	714	727	676	500	796	1.38
1820	1,117	1,706	1,135	1,135	669	1,245	0.89
1870	1,499	3,031	1,876	1,876	737	2,088	0.72

Source: Toniolo (2013) based on Maddison (2001).

Table 2.2 – Historical overview of regional disparities across Europe

Countries	Structural Data to 1871		Regional Inequality (GDP pc)		
	GDP per capita (UK = 100)	Number of "Regions"	1871 (Italy = 1)	1911	
				Italy = 1	1871 = 1
Habsburg Empire	37.2	24	5.76	2.50	0.90
of which: Austria	*59.4*	*8*	*1.86*	*0.48*	*0.53*
Spain	39	17	1.04	1.33	2.63
Italy	45.2	16	1.00	1.00	2.06
Germany	54.5	14	–	0.34	–
France	57	16	1.16	–	–
United Kingdom	100	11	1.34	0.50	2.02

Source: Iuzzolino, Pellegrino and Viesti (2013).

2.2. (Cont'd): b) Other Development Indicators

Even acquiescing the thesis of a negligible income per capita gap, at the time of unification Northern and Southern regions were different across many dimensions (Ciocca, 2007), especially in the prerequisite for industrialization that contributed to create the nevermore-balanced divergence during the Italy's Liberal Age (1861-1914).

When using urbanization as proxy of development (like in Acemoglu, Johnson and Robinson, 2005), for instance, a contrasting picture comes out (Table 2.3): in both 1800 and 1860, the South had more urban centres than the North, and Sicily was the most urbanized region of Europe, surpassing even the industrializing England (Daniele and Malanima, 2011). The reason the Authors give for this peculiar outcome attained the fact that since Roman times farmers used to gather in small villages, which over time grew into populous towns. Consequently, in the South agricultural workers had to travel relatively longer distances to reach the fields, and since at that time it was not socially acceptable to let women to travel freely, they stayed at home. Consequently, the female participation in agricultural labor was higher in the northern regions than in the South, but here a larger share of women

was employed in the so-called *industria a domicilio* (domestic or put-out system), mostly concerning the textile industry (Daniele and Malanima, 2011).

Table 2.3 – Urbanization in Italy, 1800 and 1861

	Centre-North		South	
	1800	**1861**	**1800**	**1861**
Number of towns (>5,000 inhabitants)	120	157	218	357
Urban inhabitants (thousands)	2,066	2,927	2,463	4,075
Population (thousands)	11,914	16,259	6,978	9,500
Urbanization	17,3	18	35,3	42,9

Source: Daniele and Malanima (2011)

By any means, to capture the real degree of inequality in living standards across Italian regions other measures, such as food security and life expectancy, should be addressed as well.

At time of unification, extreme poverty and malnutrition were more pervasive in the northern regions. However, in the period 1881-1901 a reversal occurred: northern families benefitted from the process of modernization, their available income improved as well as nutrition, leaving the more rural and poor South with the highest share of malnourished families, whose conditions worsened also because of the concomitant crisis in the agricultural sector (Vecchi and Coppola, 2004).

One measure canonically used to infer the calories intake of individuals is height; confronting historical data both at country level in Europe (Hatton and Bray, 2010) and at regional level in Italy (Felice, 2007) a clear pattern appears: the height is positively correlated with the latitude.

In fact, Italy –along with the other Mediterranean countries Spain, Greece and Portugal– pays a negative gap toward northern Europe, being on average 3.1 cm shorter than France, 4.1 shorter than Austria and Germany, 4.5 cm shorter than Ireland and Great Britain and even 7.6 cm shorter than Sweden (table 2.4). Likewise, over the Liberal Age, southern Italian regions display an almost constant negative height differential in comparison to the rest of the peninsula equal to 3.3 cm, albeit the regional dispersion slightly improved from 2.2 in 1871 to 2.0 cm in 1911 (table 2.5).

Nonetheless, height of soldiers can be an inappropriate proxy for nutrition, as elevation may depends more on the genetic particularity of the populations than on individual food consumption in itself. Ireland and United Kingdom, for example, share almost the identical height, despite the latter being on average twice richer than the former if considering the Maddison estimates of GDP per capita for that period (assuming that income inequality in Britain was not critically higher than in Ireland).

Table 2.4 – Men heights by birth cohorts in Europe, 1861-1915

	Italy	Austria	France	Germany	Ireland	Spain	Sweden	UK
1861-65	162.9	165.9	166.6	167.6	-	162.6	169.5	166.3
1871-75	163.3	167.2	166.6	167.0	168.2	162.8	170.2	167.1
1881-85	163.7	167.6	166.9	167.7	168.9	163.8	170.9	167.1
1891-95	164.5	169.6	167.6	168.5	168.6	164.0	172.3	169.4
1901-05	165.3	171.1	168.0	-	170.0	164.7	175.5	171.3
1911-15	166.2	169.5	168.9	-	-	165.8	172.9	171.6

Source: Hatton and Bray (2010).

Table 2.5 – Height of 20-year-old conscripts in Italy, 1871-1911

Region	1871	1881	1891	1901	1911
Piedmont	162.6	163.1	163.2	164.1	164.6
Liguria	163.4	164.0	163.9	165.1	165.7
Lombardy	163.3	163.6	163.7	164.6	165.0
Veneto	165.6	165.5	165.6	166.4	166.0
Emilia	164.3	164.2	163.8	164.9	164.7
Tuscany	164.4	164.3	164.0	164.8	165.6
Marches	162.6	162.3	162.7	163.3	162.6
Umbria	162.6	162.2	162.5	163.2	163.1
Latium	163.2	162.3	162.3	163.1	164.1
Abruzzi, Molise	160.6	160.6	160.7	161.9	162.3
Campania	161.3	161.2	161.8	162.3	162.2
Apulia	160.3	160.7	161.6	161.2	161.8
Basilicata	159.1	159.3	159.6	159.9	160.6
Calabria	158.5	159.6	160.0	160.8	161.1
Sicily	160.6	160.8	161.2	161.1	160.9
Sardinia	158.2	158.9	159.4	159.1	159.5
South	160.3	160.5	161.0	161.3	161.4
Center-North	163.7	163.8	163.8	164.7	164.9
Italy	162.4	162.5	162.7	163.4	163.7

Source: Felice (2007)

Even not trusting this indicator, when it comes to life expectancy at birth, the pattern is similar to that relative to income per capita, with Italy in a backward position with respect to the other Western developed economies, albeit steadily reducing the gap over time since unification (table 2.6).
Likewise, a decade after the unification people lived 2 year less on average in the South (31.9 vs. 33.8), except for Sicily showing higher longevity (Figure 2.4). In the 1880s, while the Northerners started to see a significant raise in their living standard, the South suffered the already-mentioned agricultural

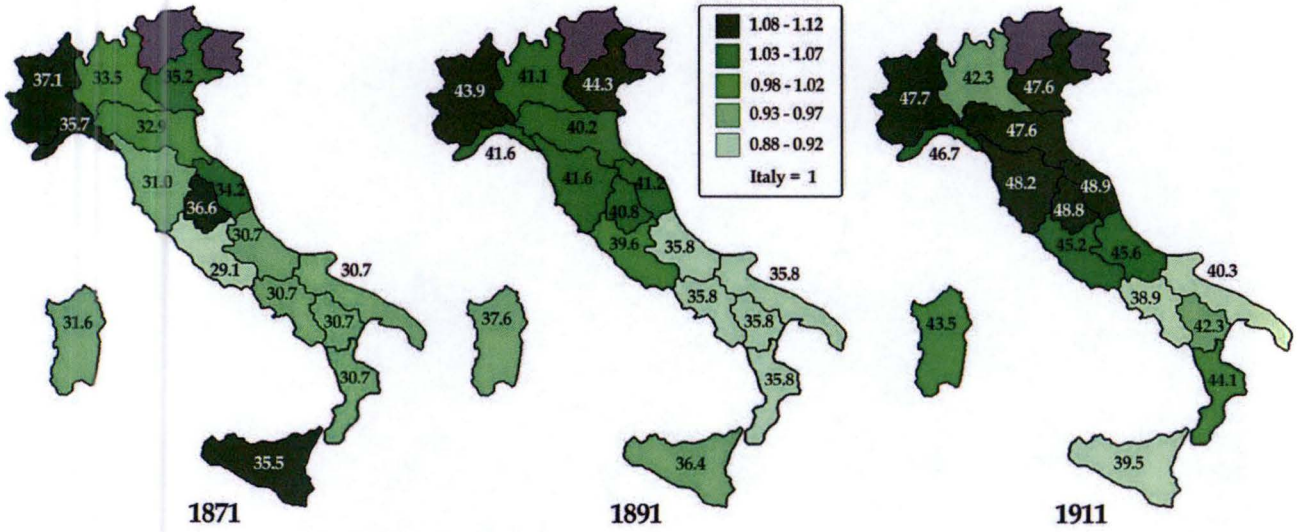
crisis coupled with a violent cholera epidemic, phenomena that exacerbated the inequality in life expectancy. In 1911, regulative improvements in the health system establishing compulsory vaccinations and a better surveillance of public hygiene determined a positive trend of regional convergence, as result also of negative externalities of industrialization (e.g. pollution, new diseases) that were affecting the North-West, especially in Lombardy.

Table 2.6 – Life expectancy at birth in Europe and USA, 1870-1910

	Italy	UK	France	Germany	Spain	Austria	USA
1870	29.7	40.6	36.4	38.4	-	34.4	-
1880	32.8	45.1	43.5	38.9	29.5	35.0	39.4
1890	38.5	44.1	43.3	39.4	32.1	37.3	45.2
1900	41.7	45.6	45.0	42.38	34.8	42.0	49.3
1910	46.7	53.3	51.3	49.0	40.8	45.1	51.8

Source: Clio Infra.

Figure 2.4 – Regional convergence in life expectancy, 1871-1911



Source: Felice (2007).

Another crucial indicator for development and economic growth is education. Using as indicator the literacy rate measured in the first decade of unification, again a picture of evident North-South gap comes out (table 2.7). However, differently than life expectancy, a serious trend of regional convergence in education struggled to take off and consistent disparities stood still until the end of the Liberal period. Only after World War II, the South aligned to the values of the rest of the peninsula.

The reasons of the weak convergence in education characterizing the first half century of the Kingdom reside in the official regulation of the educational system, which before 1861 was rarely compulsory and mainly in the hands

of the clergy, especially in the Kingdom of Two Sicilies. In particular, two legislative measures stand out as the main culprits, both inspired by the liberalist principles permeating the Italian political zeitgeist after the unification.

Table 2.7 – Literacy rate in Italy at unification, percentage

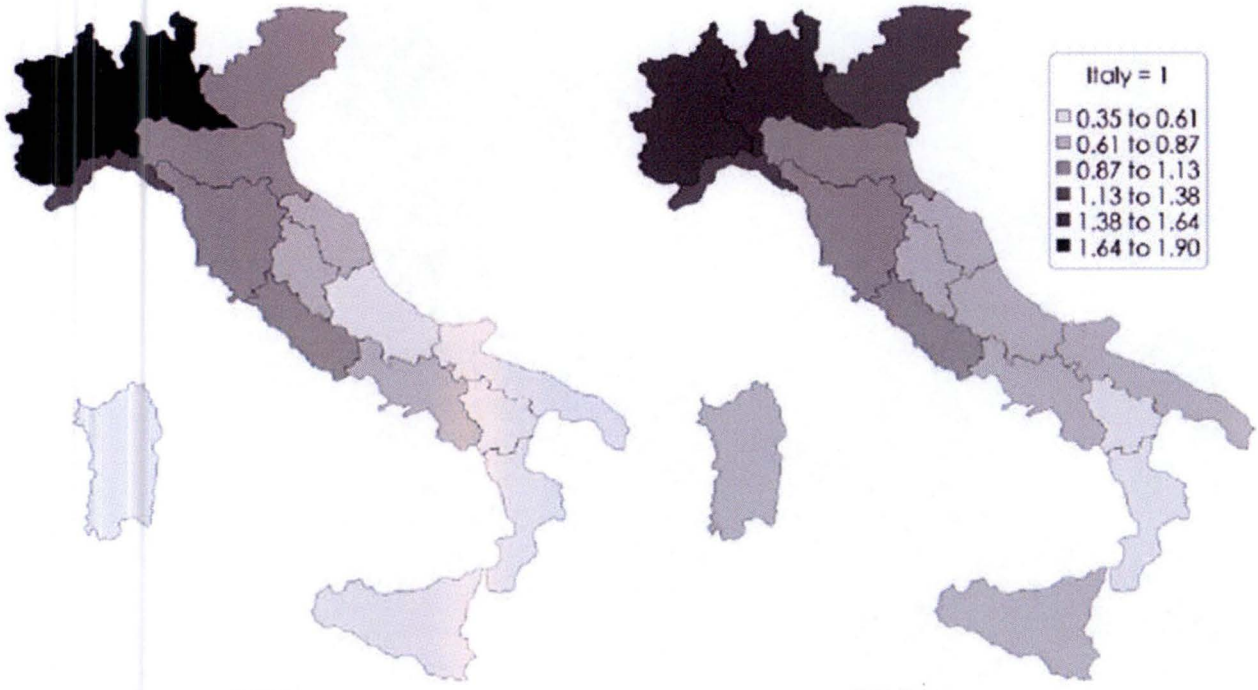
Region	Inhabitants (1861)			Spouses (1868)			Conscripts (1867)
	Male	Female	Mean	Male	Female	Mean	
Piedmont	51	34	42	73	44	58	67
Liguria	37	22	29	56	36	46	48
Lombardy	45	35	40	58	39	48	57
Veneto	-	-	-	38	17	27	45
Emilia	24	15	19	36	17	26	30
Tuscany	27	17	22	51	19	35	37
Marches	20	10	15	35	18	26	22
Umbria	19	9	14	46	27	36	22
Latium	-	-	-	-	-	-	-
Abruzzi	17	4	10	23	6	14	26
Campania	21	9	15	31	12	21	23
Apulia	16	7	11	19	6	12	23
Basilicata	15	3	9	15	4	9	18
Calabria	16	3	9	19	4	11	18
Sicily	14	5	9	24	10	17	18
Sardinia	13	5	9	32	10	21	21
South[a]	23	7	15	16	5	11	21
Center-North[a]	49	27	38	32	20	26	41
Italy	**28**	**16**	**22**	**41**	**22**	**31**	**36**

Source: Antonielli (1872). (a) Own computation.

The first is the royal decree 3725/1859 (Casati Law), emanated firstly in the Kingdom of Piedmont and then extended to the whole peninsula after 1861, which established that municipalities (the *comuni*) had to supply free primary schooling while bearing the costs, proportionally to the people's need and their spending capacity.

The second is the law no. 2248/1865 (or Lanza Law) on fiscal decentralization, which delegated the tax collection and the related revenue spending to the municipal and provincial entities. The legislative measure impacted in an asymmetric way: all the *comuni* in their pre-unification past had been experiencing a certain degree of administrative autonomy –being in charge of managing public works (cemeteries, waterworks, roads), public healthcare and primary education–, except the ones formerly belonging to the Kingdom of Two Sicilies, which had a strict centralized government.

Figure 2.5 – Regional convergence in literacy rate, 1871-1911



Source: Cappelli (2016).

Consequently, local autonomy encouraged a proactive behavior in the municipalities of Centre-North, which were already accustomed to it, while passiveness dominated the southern local institutions, traditionally more depending on the central State (Battilani, 2011).

Due to the lack of mechanisms of wealth redistribution from the richer to the poorer *comuni*, and the decentralized education system established by the Casati Law, the more disadvantaged local authorities, mostly located in the South, found greater difficulties in implementing basic education.

Cappelli (2016) named such situation a "human capital trap": the constrained spending budget in the poorest towns hindered the investments in school facilities and quality teaching. As a result, the stagnating human capital accumulation did not allowed triggering the virtuous circles related, one hand, to modernization and, on the other hand, to a raise in teaching quality and social awareness leading to sensible improvements also in local institutions' quality. Vasta (1999) stressed the importance of a centralized education system –established only in 1911– in order to let human capital play its crucial role in the long-term growth and regional convergence. If a centralized system had been implemented earlier, the regional inequality in human capital accumulation would have been significantly lower (Cappelli, 2016).

Conclusively, in terms of broad development the newborn Kingdom of Italy – like its Mediterranean peers– was definitely lagging behind countries in

continental Europe, Scandinavia, as well as Great Britain and the so-called Western Offshoots, as found in numerous studies proposing measures of historical HDI and reported in Felice and Vasta (2012, table 2.9). Nonetheless, once the industrialization process took off in the 1880s and 1890s, Italy started to catch up with the most advanced economies, along with Japan in the Meiji period, albeit at the cost of widening the North-South disparities, which had nevermore been completely absorbed.

Table 2.9 – Human Development Index in the world and in Italy

Country	1870	1890	1913	Region	1871	1891	1911
Australia	0.491	0.570	0.641	Piedmont	0.380	0.457	0.517
Austria	0.340	0.428	0.514	Liguria	0.346	0.436	0.514
Belgium	0.438	0.486	0.556	Lombardy	0.347	0.435	0.482
Canada	0.432	0.497	0.604	Veneto	0.318	0.412	0.488
Denmark	0.470	0.513	0.600	Emilia	0.273	0.374	0.485
France	0.405	0.491	0.552	Tuscany	0.273	0.377	0.472
Germany	0.432	0.499	0.576	Marches	0.256	0.338	0.434
Greece	0.248	0.301	0.351	Umbria	0.272	0.346	0.442
Ireland	0.373	0.455	0.535	Latium	0.264	0.398	0.486
Italy	0.282	0.360	0.442	Abruzzi	0.217	0.277	0.385
Japan	0.210	0.317	0.428	Campania	0.241	0.306	0.375
New Zealand	0.496	0.573	0.658	Apulia	0.215	0.286	0.364
Norway	0.466	0.514	0.577	Basilicata	0.200	0.259	0.348
Portugal	0.224	0.285	0.313	Calabria	0.195	0.249	0.348
Spain	0.246	0.302	0.376	Sicily	0.233	0.284	0.366
Sweden	0.424	0.488	0.579	Sardinia	0.216	0.302	0.393
UK	0.449	0.514	0.605	South	0.226	0.286	0.370
USA	0.463	0.514	0.591	Centre-North	0.319	0.411	0.490

Source: Felice and Vasta (2012).

2.3. Regional Divergence and Industrialization

As already mentioned, in 1861 Italy was still an agriculture-based economy summarizing almost half of the GDP (Federico, 1996), while 63.8 percent of workers were still employed in the fields (Table 2.10). The different climates and the morphology of the soil (more arid and hilly in the Mezzogiorno) favored more the North in terms of land productivity: between 1815 and 1880 the average yield per hectare of the wheat was 0.5-0.9 tons in the North, 0.4-0.8 in the Center, and 0.3-0.7 in the South (Daniele and Malanima, 2011). Geography, then, determined the development of different agricultural systems, which eventually affected also the social structure and the development of the involved areas.

Table 2.10 – Structure of labour force by macroarea, 1861

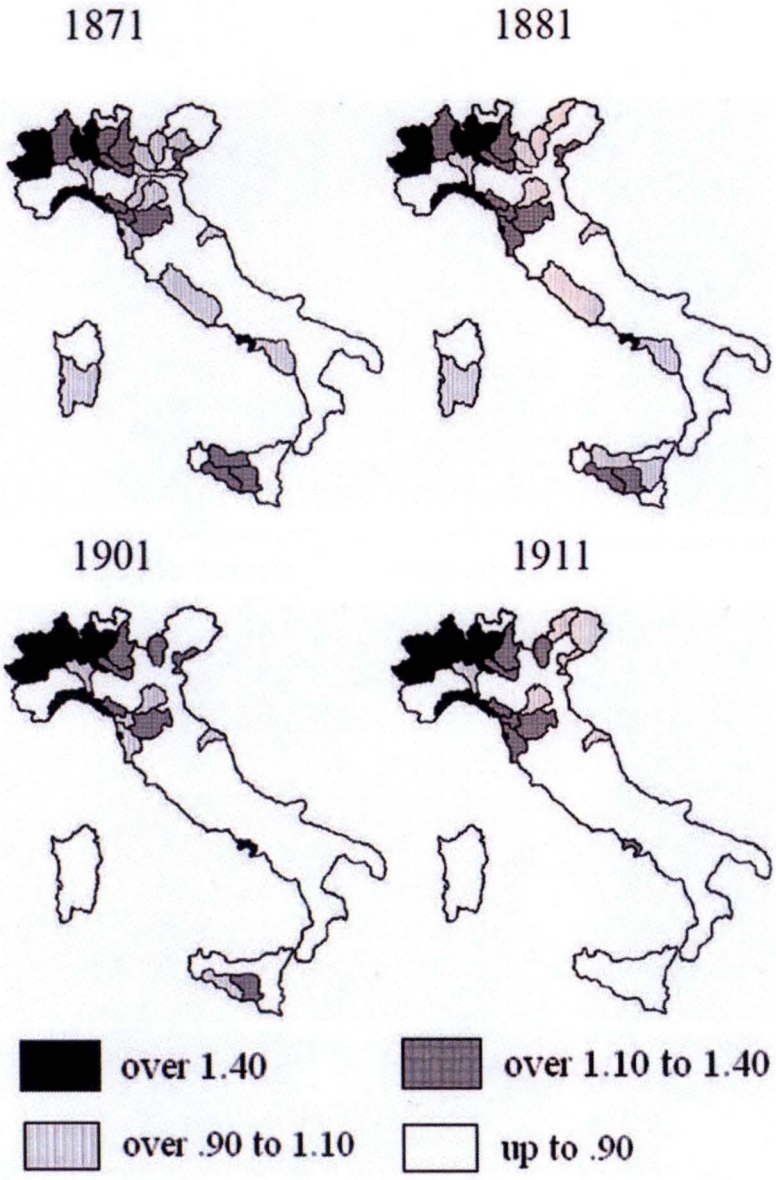
	Labour force (thousands)	Agriculture (%)	Industry (%)	Services (%)
North-West	3,956	59.6	18.9	21.5
North-East	2,867	64.5	16.7	18.8
Center	2,451	66.7	16.9	16.5
Cont. South	3,611	71.2	15.2	13.6
Islands	1,284	58.9	17.3	24.0
South	4,895	65.1	16.2	18.8
Italy	14,169	63.8	18.0	18.2

Source: Daniele and Malanima (2011)

In the North, and particularly in the plain of Po river, a florid capitalistic-like private system similar to the British high farming took shape: land tenures were clustered in farms of moderate extension called *cascina*, which not unfrequently included also husbandry activities.
In the other part of the peninsula, instead, the land system still showed feudalistic traces, since it was dominated by the *latifondo*, a large estate typically designated to extensive cultivation of cereals and worked by poor peasant families on behalf of a disinterested landowner, who preferred to spend his life in cities far away his domains (Cantarella and Filocamo, 2010). Alongside the *latifondo* there was the *mezzadria*, a contract of sharecropping between the landowner and the farmer by which the latter was entitled of half of the product and profits of his activity. The farming areas characterized by such arrangement were also the ones generally more productive and with higher rate of farming techniques innovation, in accordance with the general literature by which possessing property rights –albeit limited– regarding the land and the worked output creates incentives to reduce labor shirking and to intensify productivity (Besley & Ghatak, 2010; Banerjee et al., 2005).
Despite the natural disadvantage, the agricultural production per worker was higher in the South until the First World War. Eventually, the scanter endowment of human capital and natural resources –as well as the difference in farming systems– caused a lower growth of agricultural total factor productivity and output per worker in the Mezzogiorno compared to the Po valley. Those trends accounted for about 42 percent of the widening North-South income divergence in the period 1891-1911 (Federico, 2007).
Nonetheless, the highest source of increasing regional disparity was the process of industrialization, which firstly covered the North-West with the creation of the so-called Milan-Turin-Genoa triangle, then interested the regions of Veneto, Emilia-Romagna and Tuscany and only after the Second World War remarkably extended to the rest of peninsula (Figure 2.6).

As found by Ciccarelli and Fenoaltea, «the industrial backwardness of the South evident on the eve of the First World War had not been inherited from Italy's pre-Unification history» (Ciccarelli and Fenoaltea, 2010, p. 23).
In 1871, in fact, there was no trace of geographic sectoral concentration across regions, except for the mining sector clustered in Tuscany and the islands and a prosperous textile sector in the North-West (Missiaia, 2014). The manufacturing activities were geographically concentrated around the capitals of the old States, whereas the Adriatic and Ionian coasts were more backward (Ciccarelli and Fenoaltea, 2010).
According to Cafagna (1989), a real process of industrialization in Italy started around 1881, when regional concentration and specialization showed up and strengthened over time (Missiaia, 2014). Academics identified various sources for such pattern of strong industrial localization.
Firstly, geographical endowments advantaging the North, like the abundance of water resources for hydroelectric power (Cafagna, 1989; Fenoaltea, 2006) and the relative vicinity to the other European markets (Daniele and Malanima, 2007). Regarding the second point, Missiaia (2014) rejects the market distance thesis, finding, instead, that domestic markets were more relevant than international ones in predicting GDP per capita of Italian regions. Therefore, the higher economic performance of the North can be explained by having better access to domestic markets, advantage that went weakening over time due to the relative development of Central Italy favoring also southern regions. Moreover, if adding also foreign markets in the picture, in terms of total market potential the North was not in a favored position over the South. The latter, in fact, was quite open to international trade as exporter of high value added agricultural products until the markets were flooded by cheaper goods from United States causing the above-mentioned 1880's agricultural crisis, with the consequent impoverishment of southern population and mass emigration.
Another crucial factor determining the regional concentration during the industrialization process of the country is the availability of human capital (Gagliardi and Percoco, 2011; Missiaia, 2014; Cappelli, 2016). In particular, Gagliardi and Percoco (2011) found a mutually reinforcing relationship between education and industrial location: the northern regions with better endowments in human capital tended to switch from an agriculture-based economy to a more productive industry-based economy, which was more profitable also in terms of returns on education, fostering further accumulation of human capital. On the other hand, the relative scarcity of educated workers in the South prevented the localization of industries; furthermore, industrial specialization would have had even a negative impact on the regional productivity, hence it was more convenient to remain anchored to agriculture.

Figure 2.6 – Industrialization[1] in Italy by province, 1871-1911



Source: Ciccarelli and Fenoaltea (2010)

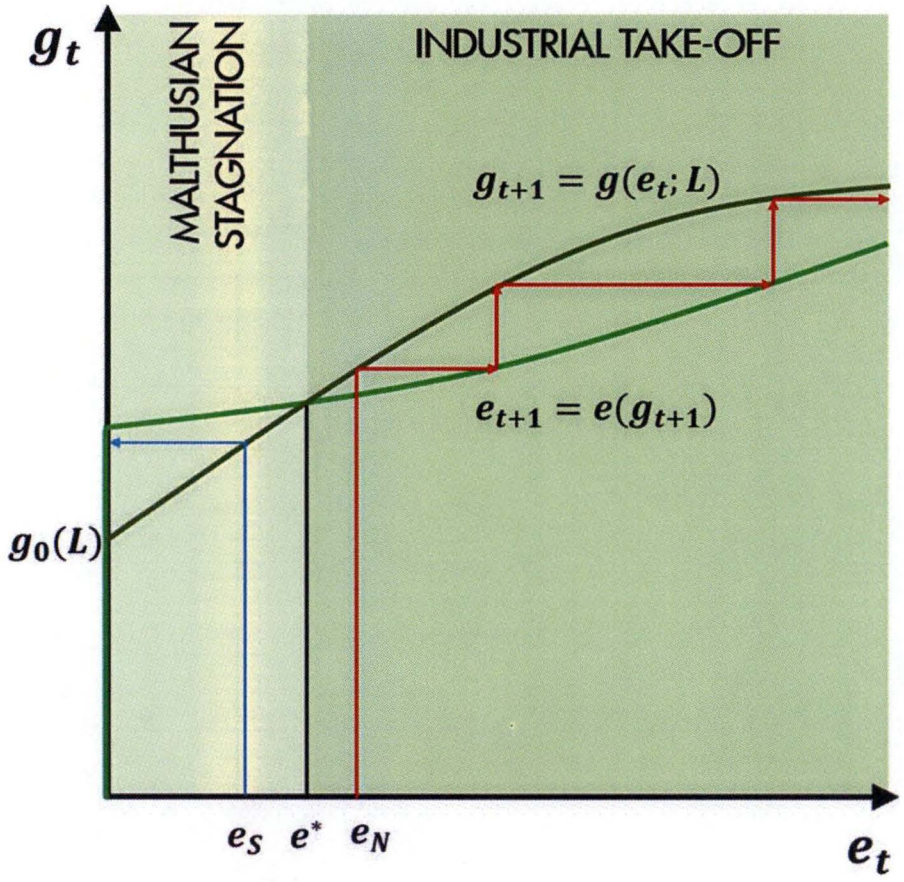
Those findings are consistent with the unified growth theory proposed by Galor and Weil (2000) and illustrated in figure 2.7 for the specific Italian case[2]. The higher stock of human capital present in the North provided the necessary conditions to trigger the transition to the economy *a la* Solow, which in turn raised the returns on education hence the incentive for workers to acquire hard skills and fostering the virtuous cycle, while the South stagnated in the Malthusian and human capital trap.

1 Ciccarelli and Fenoaltea (2010) built the index of relative industrialization as:

$$\frac{(Province's\ industrial\ value\ added)/(Italy's\ industrial\ value\ added)}{Province's\ share\ of\ male\ population\ aged\ over\ 15}$$

2 The image is inspired by the course of Economic Growth.

Figure 2.7 – Regional divergences in development widened also through regional disparities in human capital



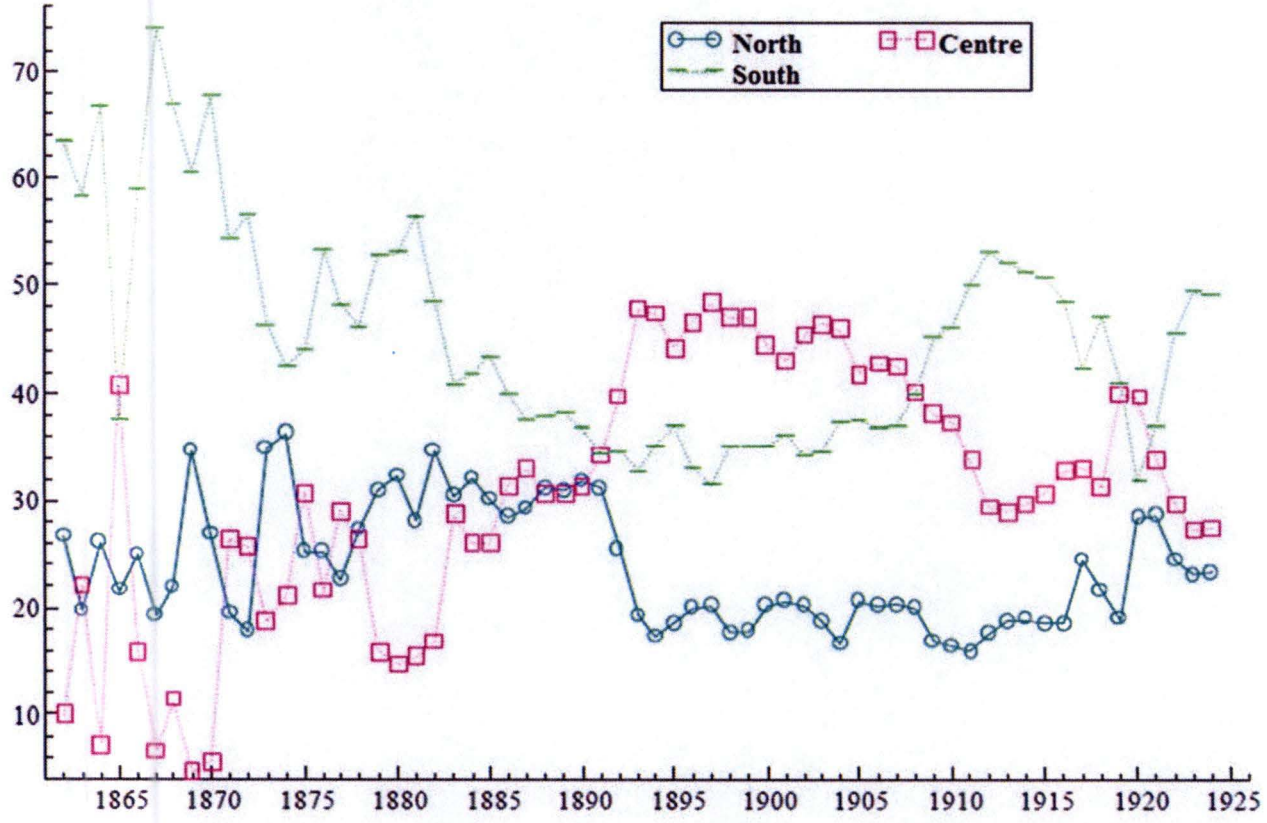
As further confirmation, Nuvolari and Vasta (2015) –by analyzing data on patents– highlight a clear positive link between basic education and frequency of innovations, which, in turn, have a significant positive association with the process of industrialization. Moreover, they notice that patenting was more vigorous in the provinces of the industrial triangle even before the unification, compared to central and southern Italy, which were standing far behind.

The third crucial determinant of the geographical asymmetry in the Italian modernization process regards favorable or even discriminating policies implemented by pre- and post-unification governments.

In a letter sent to the other *meridionalista* Pasquale Villari, the Lucanian politician Giustino Fortunato denounced the uneven North-favoring attitude in public spending of the central government: «The unification of Italy has been and will be our moral redemption. But it has been, alas, our economic ruin. We were, in 1860, in absolutely prosperous conditions for a sound and favorable economic recovery. [...] And if that was not enough, it is proven, contrarily to everyone's opinion, that the Italian State lavishes its financial resources to the northern provinces to a significantly greater extent than to

the southern ones» (Fortunato, 1899). Successively, Francesco Saverio Nitti (1900) confirmed his thesis.
However, if considering public expenditures borne respectively by central and local authorities the reality changes. Excluding the investments in railways, more profuse in the North until 1897, it comes out that in the period 1861-1891 central government spent more in southern provinces than elsewhere in terms of public infrastructures, though in a steadily decreasing trend (Figure 2.8).

Figure 2.8 – Public investments of central government by geographical macroarea, excluding railways 1862-1924 in percentage



Source: Picci (2002).

If considering public expenditures in charge of local administration by virtue of the 1865 law in fiscal decentralization, instead, southern municipalities were indeed more disadvantaged by a significantly lower fiscal capacity (table 2.11), hindering an adequate provision of public services.
Anyway, according to de Oliveira and Guerriero (2014), regional disparities opened because of discriminating central policies. In particular, they advocates that the State implemented a series of extractive policies to the detriment especially of the South, in order to compensate the rampant public debt and the sustained past fiscal deficit run to finance the unification-related military expenditures.

Using the *imposta sul valore fondiario* –the tax on land property constituting the primary source of fiscal revenue– as benchmark to compare taxation before and after the unification, they found that the tax burden per capita was far higher in the South until 1880, while the public investment per capita and the political representation favored the Northern regions, especially the ones bordering the 'enemies' France and Austria.

Table 2.11 – Per capita municipal revenue, 1863-1899, at constant prices (Lire 1890)

Regions	1863		1884		1899	
	Lire	Percentage	Lire	Percentage	Lire	Percentage
Piedmont, Liguria	11,9	146,9	13,2	109,2	16	112,2
Lombardy	14,5	179,0	12,1	100,1	14,2	99,6
Veneto	8,6(1868)	106,2(1868)	11,7	96,8	12,8	89,8
Emilia	12,6	155,6	13	107,5	14,1	98,9
Marches	10,7	132,1	11,9	98,4	14,5	101,7
Tuscany, Umbria	9,8	121,0	13,7	113,3	15,7	110,1
Latium			25,9	214,2	34,1	239,1
Abruzzi, Molise	3,8	46,9	6,8	56,2	8,7	61,0
Campania	5,8	71,6	13	107,5	15,4	108,0
Naples excluded	*4,2*	*51,9*	*7,9*	*65,3*	*9,4*	*65,9*
Apulia, Basilicata	4,7	58,0	9,8	81,0	11,2	78,5
Calabria	3,1	38,3	7,1	58,7	8,4	58,9
Islands	7,5	92,6	11,1	91,8	10,9	76,4
National Average	8,10	100	12,09	100	14,26	100

Source: Battilani (2011)

Consequently, such tax distortion and preferential policies dissolved the competitiveness of Southern agricultural and proto-industrial activities, causing a significant impoverishment in wealth and human capital of the Southern population, as well as an irreversible loss of social capital in terms of trust and 'patriotic cooperation', due to increased hostility and disillusion towards local and central institutions.

2.4. Regional Disparities and Institutions

The above examination of Italy's conditions in the second half of the XIX century permit to draw an incontrovertible conclusion: if around unification there was no important North-South differential in income per capita but populations already critically diverged in living standards and human capital, then the former Kingdom of Two Sicilies was characterized by a higher degree of socio-economic inequality.

In fact, at unification, inequality and poverty were higher in the South, where the political power was in the hands of small elite of landowners, who

prevented the proactive bourgeois class and the mass of peasants to subvert the *status quo* (Felice, 2015; Daniele and Malanima, 2011).

Such perpetuated socio-economic disparities remained also after the unification because of bad institution's trap. In fact, inequalities in terms of wealth, human capital and political influence determines the creation of *ad hoc* institutions that ensure the persistence of inequality, hence underdevelopment (Engerman and Sokoloff, 2002). This statement was confirmed by Chong & Gradstein (2007), who proved that inequality and bad-for-growth institutions are mutually reinforcing.

According to Acemoglu (2008), oligarchic property rights and political institutions generate greater efficiency at first, but later on lead to miss new growth opportunities and democracy is preferable in the long run, instead.

Furthermore, to the feeling of distrust and conflict between classes, hostility and hatred towards the newborn State added. In addition to the aforementioned reasons, it is worth recalling that in all the 1860's the South was stage for a bloody civil war. After 1861, fierce resistance to the new rulers perceived as invaders spread; the government reacted emanating in 1863 the Pica Law, which declared the state of siege in the South while negating to potential dissenters (called 'brigands') human rights like the one for a fair trial process. Successively, half army was dispatched to repress the dissent of the resisting part of the population, mainly peasants and former Bourbon soldiers unwillingly to accept the change of government.

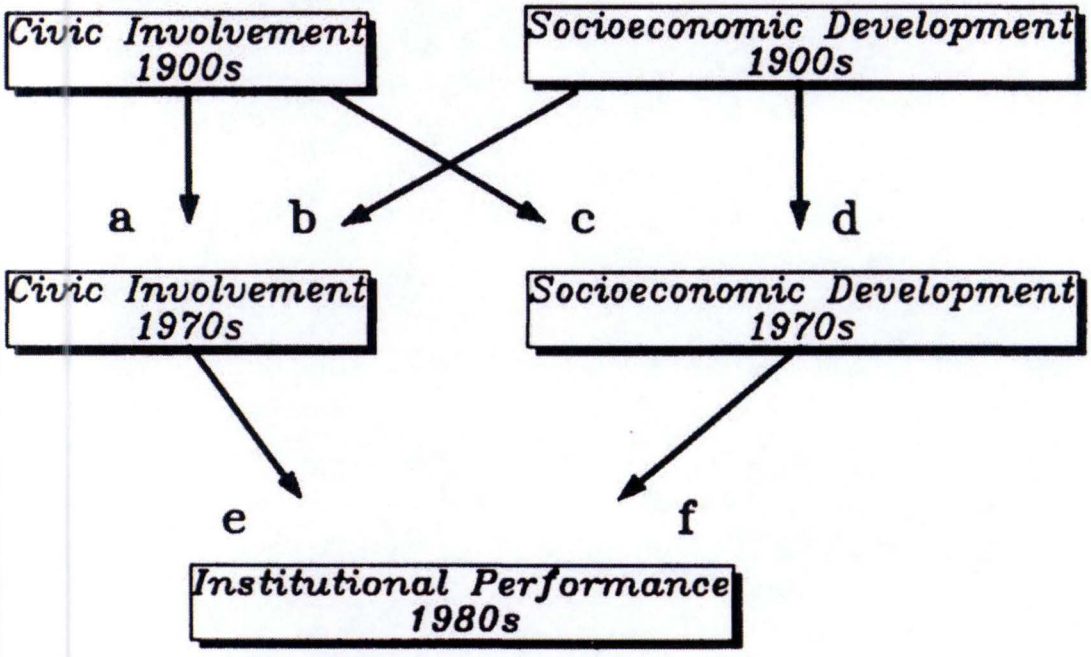
Anyway, the scars of the civil war, the increasing poverty, hence crime and corruption due to unfavorable fiscal and trade policies coupled with lower education created the basis for the so-called amoral familism. Banfield (1958) defines it as the attitude of southern Italians to maximize the material, short-run advantage of the nuclear family, without caring for the wellbeing of the rest of the community, unless they can take also a direct personal advantage from it. Silverman (1968) advocates that such behaviour is the answer to the stagnating social structure.

Recent evidences, however, repudiate the thesis of amoral familism or, at least, its validity nowadays. In fact, Casari et al. (2014) demonstrates that there is indeed a behavioral gap between North and South in terms of trust and cooperation, southerners manifest a different behavior even when facing the same incentives, but they do not reveal to be more self-interested as Banfield postulated. The possible causes of differences regard the presence in the South of social norms on conditional cooperation –i.e. whether or not the degree of collaboration depends on the actual or expected level of initial cooperation– and of higher diffidence, defined as aversion to the social risk of being cheated.

Such melting pot of suboptimal socio-economic equilibria deeply influenced the institutional performance and the path of regional convergence. As

aforementioned, Felice and Vasta (2012) analyzed the regional disparities in health and education, finding that the, unlike northern provinces, the development in the South was driven by passive modernization. With that term, they summarized the passive attitude –induced by the bad institutions' trap– of South's responsible local élites, who were reluctant or unable to implement proactive and competitive development strategies –preferring sub-optimal adaptive responses–, unless those are implemented from above thanks to the direct State intervention (State-driven convergence).
In his acclaimed work *Making Democracy Work*, Putnam (1993) shows the time persistence of those negative patterns. In 1975, with the law no. 382, the State transferred important administrative functions to brand-new regional governments, endowed with its own council to be elected by local population. By using 12 different indicators to study the quality of the newly constituted political institutions, he found that the southern regions performed worse than elsewhere. In a later work (Putnam and Helliwell, 1995), it is pointed out how the poorer institutional quality of the southern area was one of the principal drivers of the widening regional divergence in income occurred after the 1980s.

Figure 2.8 – Path-dependence of social capital, socioeconomic development and institutional performance, 1990s-1980s



Source: Putnam, Leonardi, Nanetti (1993)

Among the main reasons explaining the worse performance of the just-created regional governments, Putnam cites the lower level of social capital, defined as the positive value in economic terms of the synergies among the agents. Paraphrasing Fukuyama (2001) and Putnam (2000), social capital is a positive side effect of the depth and wideness of human interactions

network. It stems from an environment of trust, collaboration and interest among individuals, which creates well-established expectations (social norms) allowing to reach better cooperating equilibria and so lowering the transaction costs while enforcing contracts and other accumulating opportunity costs related to the permanence in a worse non-cooperative equilibrium. As a result, social capital solves for the agent-principal problem in case of political institutions. In fact, when the civic engagement in community issues is higher, on one side, elected councils are more accountable and responsible hence more transparent, attentive and responsive, while on the other, they do not have to use clientelism and pork barrel to seek support from otherwise disinterested voters to be (re-)elected. Rothstein and Uslaner (2005) analyzing the causal link between social capital and inequality, unfolded a vicious cycle they called 'social trap': high inequality contributes to keep low the levels of trust among people (both horizontally among peers and vertically among social classes) and support towards institutions, then preventing the establishment of social norms and public programs aimed to inequality relief.

By giving an evidence on how past institutions matters, Di Liberto and Sideri (2015) traces the divergence in institutional quality back to the XVI century, finding that the South was subjected to worse dominations compared to the rest of Italy, explaining the current lower institutional performance, which, in turn, determines the negative gap in terms of economic productivity.

In conclusion, perpetuating regional disparities in pre-unification socioeconomic, institutional and cultural conditions, together with a non-seldom discriminating, vexatious and poorly inclusive attitude of the unified government towards the people of the former Kingdom of Two Sicilies, are the main causes of the widened and not-yet-absorbed North-South divide in Italy.

3. Data

In the attempt to analyze the relationship between the divergence in regional development and institutional and social performance, data from various sources have been collected. The focus is on the differences at regional level (NUTS-2), however, the short time span of analysis (2000-2014) and the limited number of regions (21[3]) raise concerns about the sample size, hence the results reliability. Consequently, data at provincial level (NUTS-3) has been considered (table 3.1), when possible, allowing to have information for around 110 units. Therefore, overall the panel sample counts 1650 observations; nonetheless, the provincial measures of institutional quality provided by the Società Italiana di Economia e Politica Industriale (SIEPI) address only the 2004-2012 period, so actually the sample size falls to 990. In addition, other variables dating back to the post-unification period are taken into account, such as measures for social capital, literacy rate, population and mortality rate[4]; the purpose is to test whether past social capital and death rate can be good instruments to cancel out the possible endogeneity of social capital with respect to level of development.

Table 3.1 – List of variables and their sources

Variable	Level	Source
HDI	NUTS-3	
├ Log GDP per capita	NUTS-3	Eurostat
├ Life expectancy	NUTS-3	Istat
├ Enrollment rate in secondary school and tertiary education	NUTS-2	Istat
└ Share of population by education level	NUTS-2	Istat
Current Institutional Performance		
└ Institutional Quality Index	NUTS-3	SIEPI
├ Control of Corruption	NUTS-3	SIEPI
├ Government Effectiveness	NUTS-3	SIEPI
├ Regulatory Quality	NUTS-3	SIEPI
├ Rule of law	NUTS-3	SIEPI
└ Voice and Accountability	NUTS-3	SIEPI
Current Social Capital		
├ Political Participation		

3 Actually, the NUTS-2 units are 20, but in recent years data for the autonomous provinces of Bolzano and Trento, which formally constitute the Trentino-Alto Adige region, are included alongside the other regions as if they are NUTS-2 as well.

4 In the original framework, additional data regarding past social capital and past institutions were to be included to have a complete view for a present-past comparison. However, albeit available, they needed to be manually copied into the worksheet in order to be processed, hence because of time constraints I had to unwillingly discard them.
In the Appendix there is the list of those planned-but-excluded variables.

├ Share of people talking about politics at least once a week (*talkpol*)	NUTS-2	Istat
├ Share of people seeking news about politics at least once a week (*infopol*)	NUTS-2	Istat
└ Share of people participating to a marching protest at least once a year (*protest*)	NUTS-2	Istat
├ Community Participation		
├ Size of small cooperatives relative to small firms size (*coopsize*)	NUTS-3	Istat
├ Share of over-14 in activist associations or doing volunteering (*activolunt*)	NUTS-2	Istat
└ Share of over-14 in cultural or recreational associations (*culturass*)	NUTS-2	Istat
└ Informal networks and sociability		
├ Share of over-14 declaring to be highly satisfied with their family relationships (*familysat*)	NUTS-2	Istat
├ Share of over-14 declaring to be highly satisfied with their friend relationships (*friendsat*)	NUTS-2	Istat
└ Share of over-14 meeting their friends at least once a week (*frndmeet*)	NUTS-2	Istat
Demographics and geography		
├ Population and density	NUTS-3	Eurostat
├ Area as level and as share of total	NUTS-3	Tagliacarne Institute
├ Share of mountain terrain in the unit	NUTS-3	Tagliacarne Institute
├ Share of hill terrain in the unit	NUTS-3	Tagliacarne Institute
└ Latitude	NUTS-3	Wikipedia
Past social capital		
├ Number of sent letters per person (1875, 1891, 1898, 1905)	NUTS-3	Annuario Statistico Italiano, volumes from 1878 to 1905
└ Number of periodicals per 100,000 people (1875, 1883, 1895, 1905)	NUTS-3	
Past Human Development Index (1871)	NUTS-2	Felice and Vasta (2012)

3.1. Descriptive Statistics: a) Human Development Index

Starting from disaggregated measures of income per capita, life expectancy and education, the Human Development Index at provincial level has been computed for the period 2000-2014[5].

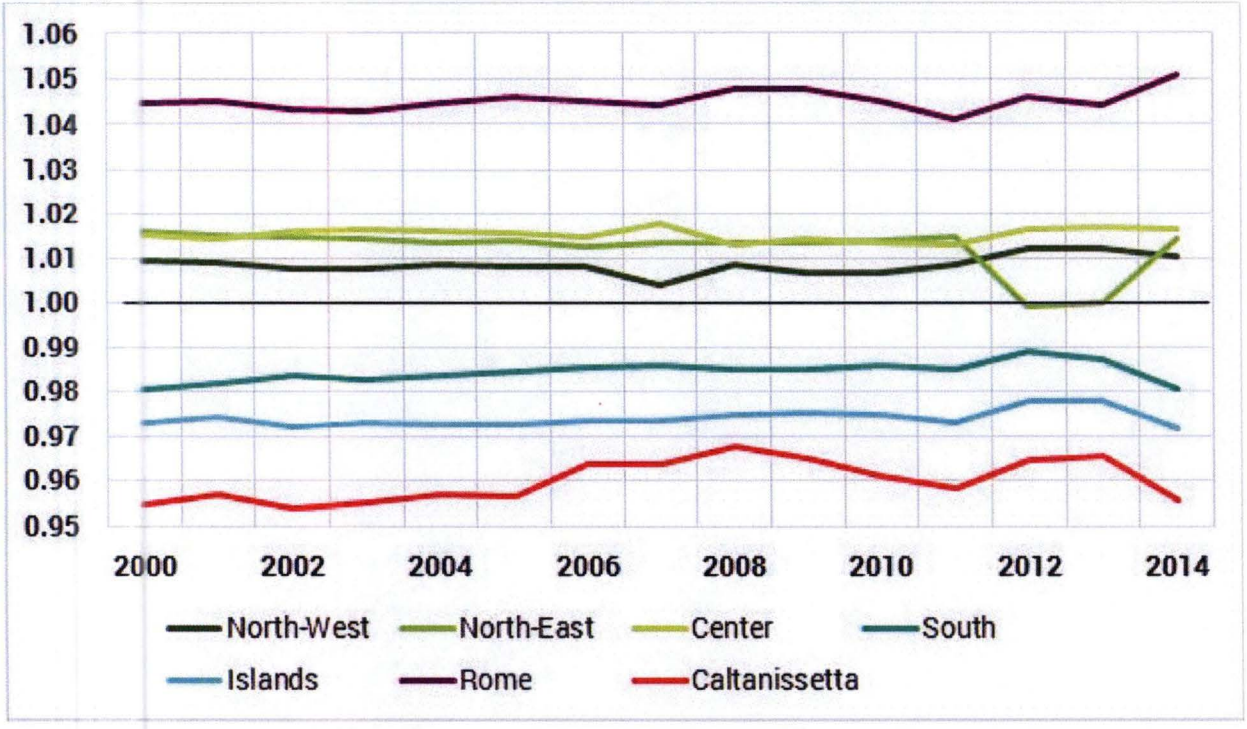
5 Details of such computation are in the Appendix.

Despite the unarrested pace of development of the whole peninsula over time, in the last 15 years the North-South divergence is clear and quite constant, with the central and northern regions forming an almost unique cluster, while the continental Mezzogiorno has a slight advantage over the islands (figure 3.1). The gap is quite stabilized also at NUTS-3 level, with the maximum distance between the most developed provinces (Rome and Milan above all) and the least ones (Caltanissetta and Agrigento, both in Sicily) standing around 9 percent of Italy's mean, i.e. about 0.078 HDI units.

In terms of dispersion, from the Alps to Marzamemi Italy presents a considerable heterogeneity: wanting to rank provinces along the different countries in the official standings[6], it comes out an interesting picture (Table 3.2).

Overall, Italy occupies the 26th place[7], whereas the best off province of Rome is just underneath Netherlands (5th place); the median province (Imperia) is below Finland (24th) but above the national average, suggesting left skewness; the southern provinces, instead, are almost all clustered within the first quartile, with Enna being the tail end sandwiched between Argentina (40th) and UAE (41th).

Figure 3.1 – Divergence in HDI by macroregion (NUTS-1) with emphasis to the best and worst provinces, 2000-2014 (Italy = 1)



Source: Own computation using the cited sources.

6 Source: United Nation Development Programme, Human Development Report 2015.

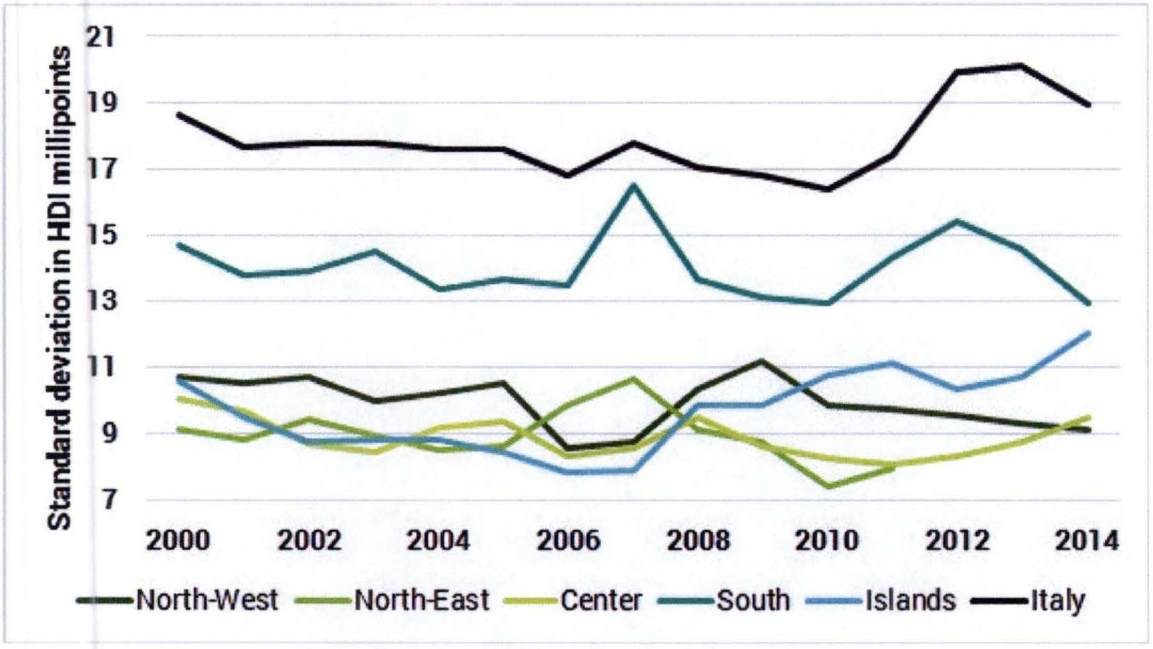
7 According to my personal computation. Anyway, the difference with the official figures is negligible (873.0; 27th place).

Table 3.2 – Distribution of HDI in Italy's provinces within a cross-country perspective, 2014

Country/Province/Macroregion	Value	World Rank	
Norway	943.9	1	
Netherlands	921.8	5	
Rome, Latium	921.2		Maximum
United Kingdom	906.7	14	
Latina, Latium	900.1		95th percentile
Korea, Republic of	898.3	17	
Rieti, Latium	896.2		90th percentile
Central Italy	*891.1*		
Belgium	890.2	21	
Arezzo, Tuscany	890.0		75th percentile
North-Eastern Italy	*889.1*		
North-Western Italy	*885.8*		
Finland	882.7	24	
Imperia, Liguria	882.6		Median
Italy	**876.5**	**26**	
Estonia	860.8	30	
Continental Southern Italy	*859.6*		
Nuoro, Sardinia	859.2		25th percentile
Insular Italy	*851.8*		
Cyprus	849.7	33	
Syracuse, Sicily	847.0		10th percentile
Catania, Sicily	846.2		5th percentile
Andorra	844.6	34	
Argentina	835.6	40	
Enna, Sicily	835.5		Minimum
United Arab Emirates	835.5	41	

In addition, over time the provincial dispersion in Italy had been timidly decreasing until 2010 (Figure 3.2), naively suggesting a process of sigma convergence, interrupted by the severe persistence of financial-economic crisis, which has led to a worsening of the North-South divide, both in terms of wealth and life quality.

Figure 3.2 – Dispersion of provincial HDI, 2000-2014



Source: Own computation using the cited sources.

3.2. (Cont'd) b) Social Capital

By virtue of the peculiar multifaceted definition of social capital, several measures need to be taken into account. Following Healy (OECD, 2002), the social capital can be distinguished in four different dimensions:

1) Political participation;
2) Community Participation;
3) Personal network or sociability;
4) Trust.

The first two directly express the degree of civic involvement, whereas the other two gave a measure of the wideness and the strength of the human interactions within a community. In the case of study, nine indicators were selected, three per each dimension excluding trust, for which there has been not available series covering an acceptable time span.

From a first glance to the data, a pattern coherent with cited literature unveils: over time the quality of social capital increases –except for the sociability indicators remaining almost constant–, but the southern regions keeps a relative disadvantage (table 3.3). The only exceptions are the frequency of marching protests and the relative size of cooperatives, which increases when going southward. Therefore, the data reveals that the gap in social capital, significant at unification and in the 1980s, is still noticeable today.

As consequence, the variables are all significantly correlated between each other, in certain cases even over 70 percent, except for three variables: frequency of marching protests, relative size of cooperatives and intensity of friend relationship (table 3.4).

One reason for such circumstance is that those variables may depend on other phenomena like, for instance, maladministration by local or central authorities causing more discontent and protests in the South, or different business environments affecting the average size of firms hence the weight of cooperatives, or factors unrelated to individual sociability but affecting the intensity of personal relationships.

Table 3.3 – Social capital by macroarea, 2000-2014

	North			Center			South		
	Obs.	Mean	SD	Obs.	Mean	SD	Obs.	Mean	SD
Talkpol	705	25.11	2.97	330	23.78	3.08	615	19.99	3.09
Infopol	705	22.32	1.76	330	20.82	1.59	615	19.03	1.89
Protest	705	4.46	1.11	330	4.86	1.44	615	5.82	1.41
Activolunt	705	14.84	3.11	330	12.19	2.93	615	7.85	1.95
Culturass	658	11.05	3.24	308	8.67	1.04	574	7.12	1.63
Coopsize	658	3.62	0.91	308	4.25	1.00	574	5.11	1.95
Familysat	705	40.29	3.01	330	36.09	4.19	615	30.09	3.97
Friendsat	705	28.60	2.67	330	26.28	3.40	615	21.29	3.04
Frndmeet	658	27.72	1.93	308	27.55	1.02	574	27.60	1.96

Table 3.4 – Correlation between social capital variables

	Political participation			Community participation			Personal network		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Talkpol	1.00								
Infopol	0.71	1.00							
Protest	-0.37	-0.46	1.00						
Activolunt	0.60	0.52	-0.31	1.00					
Culturass	0.46	0.42	-0.32	0.85	1.00				
Coopsize	-0.24	-0.26	0.17	-0.31	-0.25	1.00			
Familysat	0.53	0.43	-0.27	0.76	0.62	-0.34	1.00		
Friendsat	0.50	0.39	-0.23	0.76	0.64	-0.32	0.94	1.00	
Frndmeet	0.04	-0.01	0.03	0.16	0.24	-0.04	0.06	0.10	1.00

3.3. (Cont'd) c) Institutions' Quality

In order to measure institutional performance at subnational level, data regarding the Institutional Quality Index by Nifo and Vecchione (2015) for the *Società Italiana di Economia e Politica Industriale* were considered.

The Authors constructed six 0-1 indicators disaggregated at provincial level using the same classification of the Worldwide Governance Index by World Bank, except for political instability, irrelevant for the Italian case.
Then, the institutional quality is measured in five different dimensions:

1) Control of corruption, which includes phenomena like crime against the public administration, mafia infiltration in municipalities government, corruption in public works construction;
2) Regulatory quality, which gives measure of trade openness, business density, business startups and mortality, business environment and local government employees;
3) Rule of law, which considers crimes against property, trial times, magistrate productivity, submerged economy and tax evasion
4) Government Effectiveness, which entails the endowment of infrastructure, both for social (education, healthcare, leisure) and economic purposes (roads, railroads, ports, airports, energy, ICT, banking), along with other life quality indexes regarding separate waste collection and urban environment;
5) Voice and accountability, which takes into account the number of social cooperatives, associations, the degree of election participation and interest for culture measured in terms of books published and purchased.

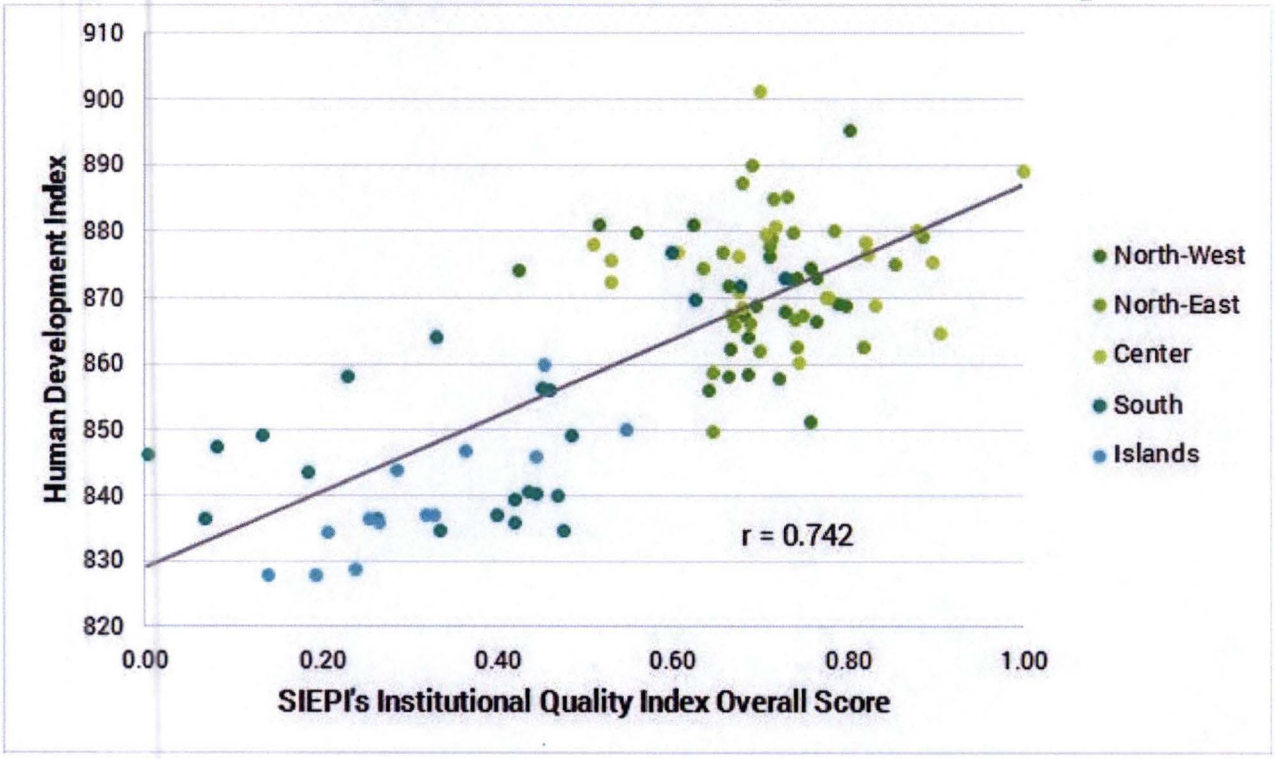
In particular, the last indicator has been disregarded as most of the measures used to define it overlaps with the proposed measures of social capital.
By looking deeply in the data sorted by geographical repartition, some interesting clues come out: overall provinces of central and northern Italy are well-governed by relative local institutions to similar extent, while the South displays a critical lower performance (table 3.5).

Table 3.5 – Institutional performance by macroarea, 2004-2012

	North			Center			South		
	Obs.	Mean	SD	Obs.	Mean	SD	Obs.	Mean	SD
Contr. Cor.	414	0.90	0.08	189	0.91	0.07	324	0.68	0.19
Govt. Eff.	414	0.48	0.13	189	0.35	0.18	324	0.21	0.09
Reg. Qual.	414	0.57	0.16	189	0.62	0.16	324	0.31	0.17
Rule Law	414	0.57	0.16	189	0.77	0.13	324	0.47	0.21
Overall	414	0.70	0.09	189	0.73	0.14	324	0.35	0.18

Moreover, it is worth noticing how the institutional quality is highly positively correlated to the level of development, as widely found in the literature (figure 3.2).

Figure 3.2 – Relationship between development and institutional performance at provincial level, average of 2004-2012 period



4. Empirical Framework

Inspired by Acemoglu and Robinson (2001), the original purpose of this work was to study the persistence of divergence in regional development through measures of both formal and informal institutions, purifying the inevitable endogeneity between the two using instrumental variables and, at same time, consider the relationship between current (2000-2014) and past institutions (1871-1905).

In order words, the original ambitious framework presupposed the estimation of the following 3-stage general structural model with fixed effects at regional level:

$$(4.1) \qquad \begin{cases} HDI_{r,t} = \beta IQ_{r,t} + \gamma SC_{r,t} + \alpha_r + \tau_t + \lambda CV_{r,t} + \varepsilon_{r,t} \\ IQ_{r,t} = b_1 IQp_{r,t} + c_1 SCp_{r,t} + \alpha_r + \tau_t + \lambda CV_{r,t} + u_{r,t} \\ SC_{r,t} = b_2 IQp_{r,t} + c_2 SCp_{r,t} + \alpha_r + \tau_t + \lambda CV_{r,t} + v_{r,t} \\ IQp_{r,t} = \theta_{1r,t} Z_{1r,t} + \theta_{2r,t} Z_{2r,t} + \alpha_r + \tau_t + \xi_{r,t} \\ SCp_{r,t} = \varphi_{1r,t} Z_{1r,t} + \varphi_{2r,t} Z_{2r,t} + \alpha_r + \tau_t + \chi_{r,t} \end{cases}$$

In the first stage past institutional quality[8] ($IQp_{r,t}$) and past social capital ($SCp_{r,t}$) would have been regressed on the couple of needed instruments ($Z_{jr,t}$, j=1,2) to extract the assumed exogenous component, which in the second stage would have been included as regressor. The idea in the second stage was to extract from the measures of current institutions the part of dynamics determined by past institutional performance, the 'persistence component'.

The rationale of such methodology resides on the assumption of endogeneity between institutional quality and social capital, which are likely to affect each other. As mentioned above, in an active and cohesive community, where the respect of unwritten yet strongly perceived norms boost trust, collaboration and reciprocal advantage, individuals are more incentivized and likely to act for the common good, and since institutions are made of people, higher social capital may affect institutional quality from within and outside. Strongly felt social norms can trigger a 'responsible governance' effect, i.e. people inside public institutions have fewer incentives to exploit the *res publica* in a corrupt, inefficient and selfish way. On the other side, there is also an 'accountability' effect related to interested people outside such institutions genuinely monitoring the functioning and the performance of public institutions in a spirit of civic engagement, and that is truer for smaller communities and local institutions, where individual support has greater weight.

Additionally, such relationship is positive also the other way around. In fact, democratic institutions, granting the sufficient degree of 'freedom rights' and

8 In origin I selected from the above-mentioned Annuario Statistico Italiano data allowing to construct an own pseudo-version of World Bank's Worldwide Governance Indicators at provincial level.

being implicitly available to greet negative feedbacks and use them as input to improve their policymaking, foster citizens to get involved into the management of the *res publica* from outside creating a cycle of positive interactions, eventually fueling the engine of the development process.
Furthermore, Putnam suggests that such virtuous cycle between social capital and institutional performance is path-dependent. In the attempt to explain the origins of the North-South divergence in institutional quality, he trace them back even to the late Middle Ages, whence the idea to consider also measures of past institutions and social capital, albeit focusing on the post-unification period.
A second specification that would have been tested regarded the direct regression of current regional divergence in development on endogeneity-amended measures of past institutions, in order to have the size of the relationship between current regional development dispersion and past institutional performance:

$$(4.2) \qquad \begin{cases} HDI_{r,t} = \beta IQp_{r,t} + \gamma SCp_{r,t} + \alpha_r + \tau_t + \lambda CV_{r,t} + \varepsilon_{r,t} \\ IQp_{r,t} = \theta_{1r,t} Z_{1r,t} + \theta_{2r,t} Z_{2r,t} + \alpha_r + \tau_t + \xi_{r,t} \\ SCp_{r,t} = \varphi_{1r,t} Z_{1r,t} + \varphi_{2r,t} Z_{2r,t} + \alpha_r + \tau_t + \chi_{r,t} \end{cases}$$

Nonetheless, due to time constraints the model to be estimated reduced to just two stages, where proxies for past social capital at provincial level constitute the pool of selected instruments to test. As well, the focus has been restricted to just social capital, thus discarding institutional performance as a mere control variable. Therefore:

$$(4.3) \qquad \begin{cases} HDI_{r,t} = \beta SC_{r,t} + \alpha_r + \tau_t + \lambda CV_{r,t} + \varepsilon_{r,t} \\ SC_{r,t} = bSCp_{r,t} + \alpha_r + \tau_{t+\lambda CV_{r,t}} + u_{r,t} \end{cases}$$

At this point, three distinct analyses are performed: firstly, the relationship between current development and current social capital is checked; secondly the path dependence of social capital is tested, on one hand, by regressing current development on measures of post-unification social capital and, on the other hand, regressing current development on current social capital but using past social capital as instruments.
Furthermore, in order to synthetize an overall indicator for social capital, the principal component analysis is performed (for both current and past social capital measures). The advantages of this method attain the possibility to condense the information contained in the variables of interest in a lower number of orthogonal factors, hence reducing the risk of multicollinearity within an OLS regression, though at the cost of information loss.

5. Results

5.1. Regional development and current social capital

As seen in table 3.4, despite being a tile of the multidimensional mosaic defining social capital, three variables out of nine display very low or even negative correlation, suggesting a non-negligible loss of information. For this reason, two PCA are performed including and excluding them (table 5.1).
As expected, the first component including all the proposed social capital variables embodies just half of the overall variance, while the one excluding reaches 67.6%, although both show the same correlation with the concerned variables. Consequently, I preferred to drop the low-correlation variables and to retain the 'without' first component.

Table 5.1 – Results of PCA for current social capital, including and excluding the low-correlation variables

	Components with		Components without	
	(1)	(2)	(1)	(2)
Eigenvalue	4.435	1.221	4.054	0.989
Variability proportion (%)	49.27	13.56	67.57	16.48
Linear correlation				
Talking about politics	0.753	-0.320	0.754	0.522
Finding out about politics	0.692	-0.487	0.661	0.671
Public protest frequency	-0.476	0.541	–	–
Activism and unpaid volunteering	0.905	0.181	0.922	-0.110
Participation in cultural associations	0.810	0.251	0.818	-0.203
Cooperatives' size	-0.439	0.034	–	–
Family relationship satisfaction	0.865	0.193	0.878	-0.299
Friend relationship satisfaction	0.851	0.266	0.871	-0.3521
Friend-meeting frequency	0.144	0.620	–	–

Table 5.2 – Distribution of the standardized current social capital score, overall and for 2014 only with regions

Min	5th	10th	25th	Median	75th	90th	95th	Max
-1.923	-1.553	-1.423	-0.857	0.148	0.748	1.083	1.333	4.020
-1.353	-1.274	-1.239	-0.520	0.383	0.969	1.070	1.083	4.020
Campania	Lucania	Apulia	Molise	Umbria	Piedmont	Emilia	Trento	Bolzano

Moreover, even if the Kaiser rule states to drop any component with eigenvalue less than one, I decided to keep the second component with eigenvalue of 0.989 for sake of completeness. Both retained components are standardized in order to make the OLS coefficients easier to interpret.

Analyzing the distribution of the created index, there is a further evidence of polarization also in terms of social capital, by which northern regions show higher civic engagement than the southern ones.
Interestingly enough, the linear correlation between the SIEPI's institutional quality index overall score and the main standardized score is 0.737, very high and positive: it is a further proof that institutional quality and social capital are positively connected.
Now, since the proposed instruments for social capital count around 300 observations, raising some concerns about the reliability of results, I decided to run first two sets of OLS regression (without and with fixed effects) in order to exploit all the available size of the dataset. In all the proposed specifications, the dependent variable is the provincial HDI divided by the annual mean of all the 110 provinces, so to have a measure of divergence (table 5.3).
In the first place, it is worth noticing that the correlation between relative development and the main social capital score is positive and somehow high (0.565), whereas almost uncorrelated with the second component (0.008).
All the specifications are significant and adding fixed effects improve the goodness of fitting, as indicated by the adjusted R^2 up to 84 percent.
From the first group of regressions without fixed effects (1-3), it comes out that controlling for initial conditions (HDI of 1871) and geography, besides institutions, makes social capital measures statistically significant. However, in order to check the "effect" of geographical position from different perspectives, the continuous variable related to latitude is flanked by a binary variable indicating the southern provinces. Additionally, also the interaction term of those two covariates are included, under the assumption that geographical location –through related excluded variables– influences measures of social capital as well.
When considering latitude, the coefficient of social capital becomes quite important, besides being significant below 0.1 percent level. In fact, moving by one standard deviation in the social capital score (the distance between the minimum and the median in 2014) corresponds to an increase in the relative HDI by 0.117, nearly equal to the average distance between the most and the least developed provinces. Furthermore, the interaction is statistically significant, albeit quantitatively limited: moving one degree southwards strengthens the link of social capital by 0.003. In real terms, that means from Turin to Naples and from Rome to Palermo the positive coefficient related to social capital increases by 0.015, while if considering the maximum distance –from Bolzano to Ragusa– the coefficient is 0.029 more (remembering that the unitary value is the national mean of HDI).

Table 5.3 – Estimation results, dependent variable: relative HDI
(p-value significance levels: × 10%; * 5%; ** 1%; *** 0.1%)

	(1)	(2)	(3)	(4)	(5)	(6)
No. of observations	909	873	873	909	909	909
Adjusted R^2 (percent)	54.23	67.00	71.52	83.92	84.08	84.08
Root MSE	0.013	0.011	0.011	0.008	0.008	0.008
F statistic	202.4 ***	224.8 ***	207.57 ***	316.35 ***	303.39 ***	307.11 ***
Social Capital						
Z-score 1	-0.0002	0.117***	-0.010***	-0.003*	0.034*	-0.005**
	(0.0008)	(0.015)	(0.001)	(0.001)	(0.014)	(0.002)
Z-score 2	0.0002	-0.028***	0.002**	0.002*	-0.017×	0.002*
	(0.0005)	(0.009)	(0.001)	(0.001)	(0.009)	(0.001)
Z-score 1×Latitude		-0.003***			-0.001*	
		(<0.001)			(<0.001)	
Z-score 2×Latitude		0.001***			<0.001×	
		(<0.001)			(<0.001)	
Z-score 1×South			0.017***			0.006**
			(0.002)			(0.002)
Z-score 2×South			-0.003**			-0.002×
			(0.001)			(0.001)
Controls						
Population density [a]	0.014***	0.013***	0.012***	0.007***	0.007***	0.007***
	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)
HDI 1871 [a]		-0.073***	-0.131***			
		(0.015)	(0.013)			
Institutions						
Control of corruption	0.052***	0.029***	0.026***	0.021***	0.020***	0.019***
	(0.005)	(0.005)	(0.004)	(0.004)	(0.004)	(0.004)
Govt. effectiveness	0.017***	0.004	0.024***	0.030***	0.030***	0.030***
	(0.004)	(0.004)	(0.003)	(0.003)	(0.003)	(0.003)
Regulatory quality	0.032***	0.023***	0.024***	0.017***	0.017***	0.017***
	(0.003)	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)
Rule of law	-0.003	-0.016***	-0.011***	-0.013***	-0.012***	-0.013***
	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)	(0.003)
Geography						
Latitude		0.003***				
		(<0.001)				
South dummy			-0.020***			
			(0.002)			
Relative size [a]		0.197*	0.188**			
		(0.092)	(0.073)			

Share of mount area [a]		0.090***	0.110***			
		(0.017)	(0.016)			
Share of hill area [a]		0.103***	0.009			
		(0.019)	(0.017)			
Constant	0.935***	0.844***	0.998***	0.968***	0.969***	0.970***
	(0.004)	(0.016)	(0.006)	(0.005)	(0.005)	(0.005)
Year Fixed Effects	No	No	No	Yes	Yes	Yes
Region Fixed Effects	No	No	No	Yes	Yes	Yes

(a) Coefficients and related heteroscedasticity-robust standard errors are multiplied by 1,000.

When the south dummy is considered, the outcome changes in its form but not in its substance: the coefficient turns slightly negative, but it is still higher for southern provinces.

When fixed effects are included (regressions 4-6), the coefficient related to social capital reduces but remains statistically significant below 5 percent level. In real terms, it is still a significant marginal change, since 0.034 points of relative HDI is about the distance between the most disadvantaged provinces and the national mean. Hence, in case the coefficient could be interpreted as the real causal effect, it would be enough to raise the social capital performance by one standard deviation to reduce divergence in regional development largely.

Keeping with this speculation, as the interaction terms still favor the South, there is an additional component further helping the disadvantaged regions of Mezzogiorno in the process of catching up and softening the negative effects of worse endowments in unknown characteristics related to geographical position.

Anyway, except when considering the interaction term for latitude, the coefficient for social capital is negative and small in module, ranging from –0.001 to –0.005, i.e. from 1/20 to 1/4 of the average deviation from Italy's mean (the outcome remains the same even re-estimating all the specification again excluding the second social capital score). In real terms, considering the roughly median HDI value of 870, these results suggest that areas having one standard deviation of social capital more are from about 1 to 4 HDI points less developed, apparently contradicting the theoretical assumption of a positive effect of social capital on development.

Additional considerations regard the role of institutions, whose coefficients are always positive and significant, except for rule of law. This covariate is negatively related to size and frequency of crime, and positively related to judiciary efficiency, and it is quite odd that it is also negatively linked to higher development. One possible explanation may be that those more developed provinces are characterized by more dispersion within –just think about wealthy metropolitan areas surrounded by poor suburbs like in Milan,

Rome, Naples and other Italian big cities[9]–, thus characterized by more crime and related "diseconomies of scale" due to higher urbanization.
Another important institutional measure is government effectiveness, which gives a measure of the social overhead capital, especially infrastructures related to health, education and communication, hence directly affecting the three dimensions of development and constituting a real source of bias if omitted.

5.2. Check for path dependence and endogeneity of social capital

The coefficient of social capital in the proposed regression may be faulted by endogeneity because of:

a) omitted factors changing both over time and across provinces that affects development and are related to social capital;
b) simultaneous causality between development and social capital.

Regarding the second point, this obstacle could be circumvented by using the past dynamics as instrumental variable, so removing the 'simultaneous' endogenous component.
The PCA on the two past social capital proxies gives quite straightforward results: the factor explains 87.8 percent of the overall variability, while being almost perfect correlated with both measures (table 5.4).

Table 5.4 – Results of PCA for past social capital

	Fist component
Eigenvalue	1.757
Variability proportion (%)	87.84
Linear correlation	
Letters sent per inhabitant	0.937
Periodicals per 100,000 inhabitants	0.937
Relative HDI	0.391
Current social capital score	0.156

Table 5.5 – Distribution of the standardized past social capital score, overall with historical provinces

Min	5th	10th	25th	Median	75th	90th	95th	Max
-1.193	-0.876	-0.704	-0.487	-0.275	0.060	1.283	1.953	8.395
Potenza	Aquila	Foggia	Caserta	Ravenna	Alessandria	Venice	Turin	Bari

9 Making an example related to big cities is not so incorrect if thinking that the urbanization in those provinces is so high to constitute a dense demographic *unicum*. In fact, starting from 2014 ten provinces surrounding big cities were renamed as "metropolitan areas" and subjected to a slightly different regulation from canonic provinces.

Moreover, the past social capital is positively yet low correlated (0.156) with the current social capital measure, meaning that using it as instrumental variable is acceptable but caution in interpreting results in terms of real causality is required as it is not so strong.
Using the standardized estimated score as direct regressor against relative development interestingly yields broadly the same results, but with inverted sign. Accounting for latitude interaction now makes the social capital coefficient negative, while elsewhere is weakly positive. Such results remains unchanged whether controlling or not for current institutions and whether considering or not fixed effects.

Table 5.6 – Estimation results, dependent variable: relative HDI
(p-value significance levels: ˣ 10%; * 5%; ** 1%; *** 0.1%)

	OLS			IV-2SLS	
	(1)	(2)	(3)	(4)	(5)
No. of observations	271	271	271	271	271
Adjusted R^2 (percent)	80.33	80.43	80.30	-7.92	-11.14
Root MSE	0.009	0.009	0.010	0.020	0.022
F statistic	184.35 ***	174.00 ***	174.62 ***	18.76 ***	34.09 ***
				First stage	
Past Social Capital					
Z-score 1	0.002*** (<0.001)	-0.031* (0.015)	0.004** (0.001)	-0.138*** (0.023)	-0.035 (0.135)
Z-score 1×Latitude		0.001* (<0.001)			
Z-score 1×South			-0.002ˣ (0.001)		
				Second stage	
Current Social Capital					
Z-score 1				-0.035* (0.019)	-0.066 (0.044)
Constant	Yes	Yes	Yes	Yes	Yes
Institutions and other controls	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	No	Yes
Region Fixed Effects	Yes	Yes	Yes	No	Yes
IV-2SLS regression diagnostic					
First stage F-statistic (instrument only)				14.44***	2.13
Durbin-Wu-Hausman endogeneity tests					
Normal χ^2 test				15.152***	5.226*
Robust-errors auxiliary regression F test				4.97*	10.28**

Coming to the 2SLS regression, the sign of the social capital coefficient confirms its negative sign, although it loses any statistical validity when fixed effects are added, revealing the overall weakness of the instrument, confirmed by the low first-stage F-statistic, not statistically significant and inferior to the rule-of-thumb value of 10.

The negative sign seems to suggest that after partialling out institutional quality there was a "reversal of fortune": provinces endowed with higher social capital in the 1875-1905 period ended with lower social capital in the period 2000-2014, in particular, signaling convergence of southern Italy in that sense. Another interesting exercise would have been to verify such relationship controlling not only for present but for past institutional performance, too.

Regarding institutions, it is worth noticing how in the first stage the coefficients linking past and current social capital to the various measures of institutional quality are all positive and statistically significant below 1 percent level (except rule of law).

Moreover, despite the weakness of past social capital as instrumental variable, checks for endogeneity –represented by the basic and the hetero-scedasticity-adjusted Durbin-Wu-Hausman tests– endorse the preliminary assumption under which social capital has to be treated as endogenous, thus the estimated coefficients in table 5.3 cannot be regarded as real causal effects. In any case, in order to inquiry the causal link of social capital toward regional development, the proposed results cannot be declared as satisfying and calls for better instruments and/or methodology (like considering growth rates instead of levels).

6. Conclusions

This work has addressed the problem of the North-South divide in Italy from a historical perspective, pointing out on the factors that created or exacerbated the regional divergence in the period right after the unification. Noticeable differences existed in the social structure and geography among the pre-unification States, even if a definite North-South divide had not existed yet. In particular, although in terms of income per capita there was no significant gap, the southern Italians experienced higher socioeconomic inequality, which affected also the attitude to civic participation. In the last two decades of the XIX century, divergences in culture –defined as different behavior to same incentives–, and in endowments of human capital and strategic resources favored the industrialization of the North only, constituting the main source for the significant widening the regional development gap. Finally, discriminating policies by central government and shortsightedness and passiveness by local elites prevented a sound and steady growth process to take place in the southern provinces.

The successive empirical analysis has focused on the importance of institutions in fostering development, and, in particular, tried to unfold the causal relationship between social capital and regional development, giving attention also to the issues of path dependence and endogeneity of the former.

In spite of the positive and non-negligible correlation, after controlling for institutions –and for geography and post-unification development when not considering fixed effects– the relationship between regional development and social capital becomes feeble and even negative, albeit a stronger positive link is found for the southern provinces, which had and have lower social capital than elsewhere in the Italian peninsula.

Results that are similar to a certain extent are obtained when past social capital is addressed in order to explain historical sources of regional divergence. This kind of analysis gives interesting points of consideration, like the fact that over time the South, disadvantaged also in terms of social capital, experienced a process of convergence. Nonetheless, in terms of causality, past social capital revealed to be a weak instrument for current social capital, and given the verified endogeneity with the measure of development, it means that the coefficients estimated in the proposed specifications are still relevantly biased.

In particular, further improvements can be done by adding measures of post-unification institutional quality and other measures of past social capital to integrate and adjust the analysis from the historical point of view. As well, to add reliability to the results a larger historical and current dataset should be considered. Another unexploited possibility of this empirical exercise

regards the overlooking of the likewise real endogeneity between social capital and institutions, which has been outlined when describing the empirical framework but put aside for time shortage.

In the end, in accordance with Di Liberto and Sideri (2015) this work reasserted the crucial importance of good formal institutions as determinant of the development path and as channel through which social capital operates.

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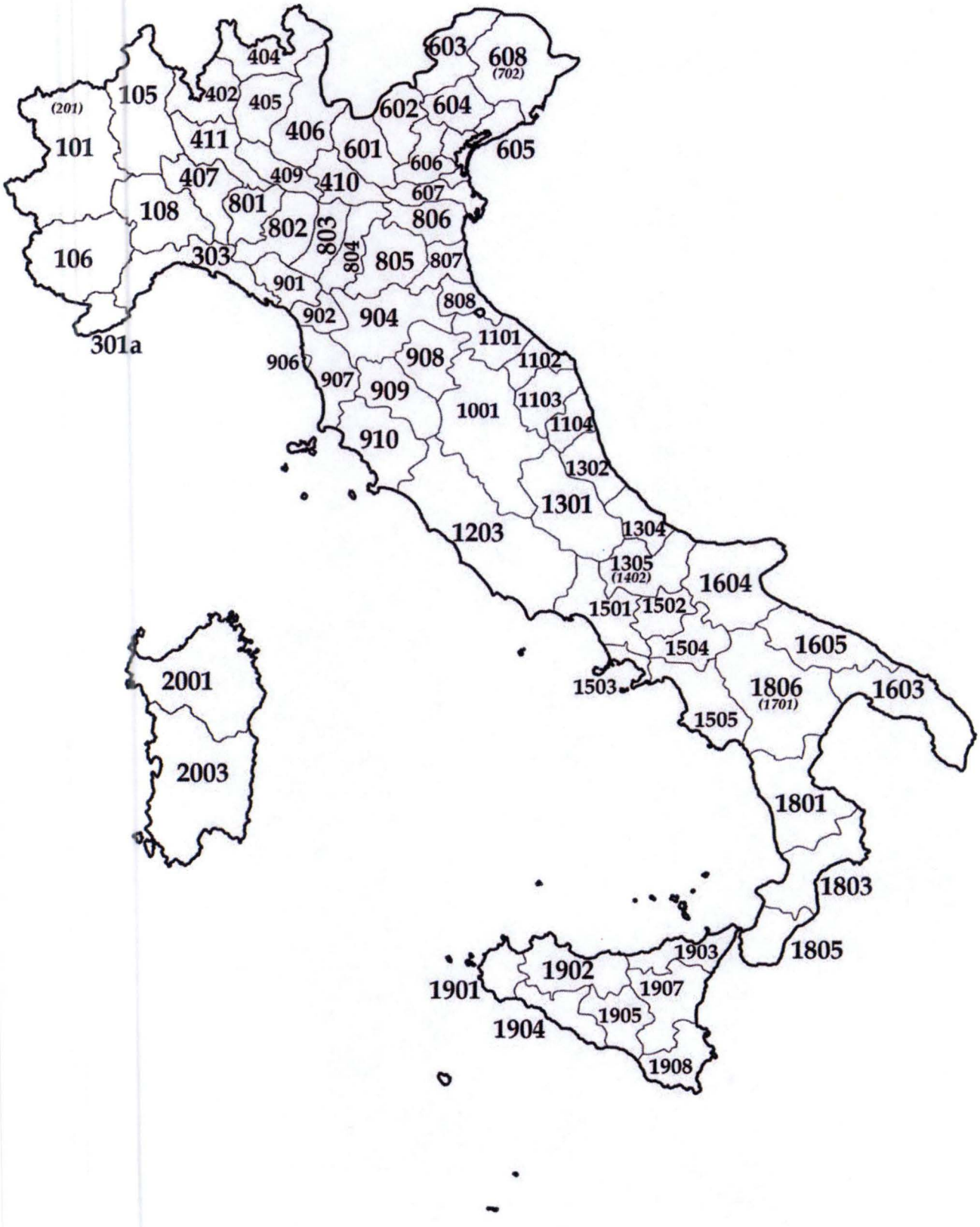
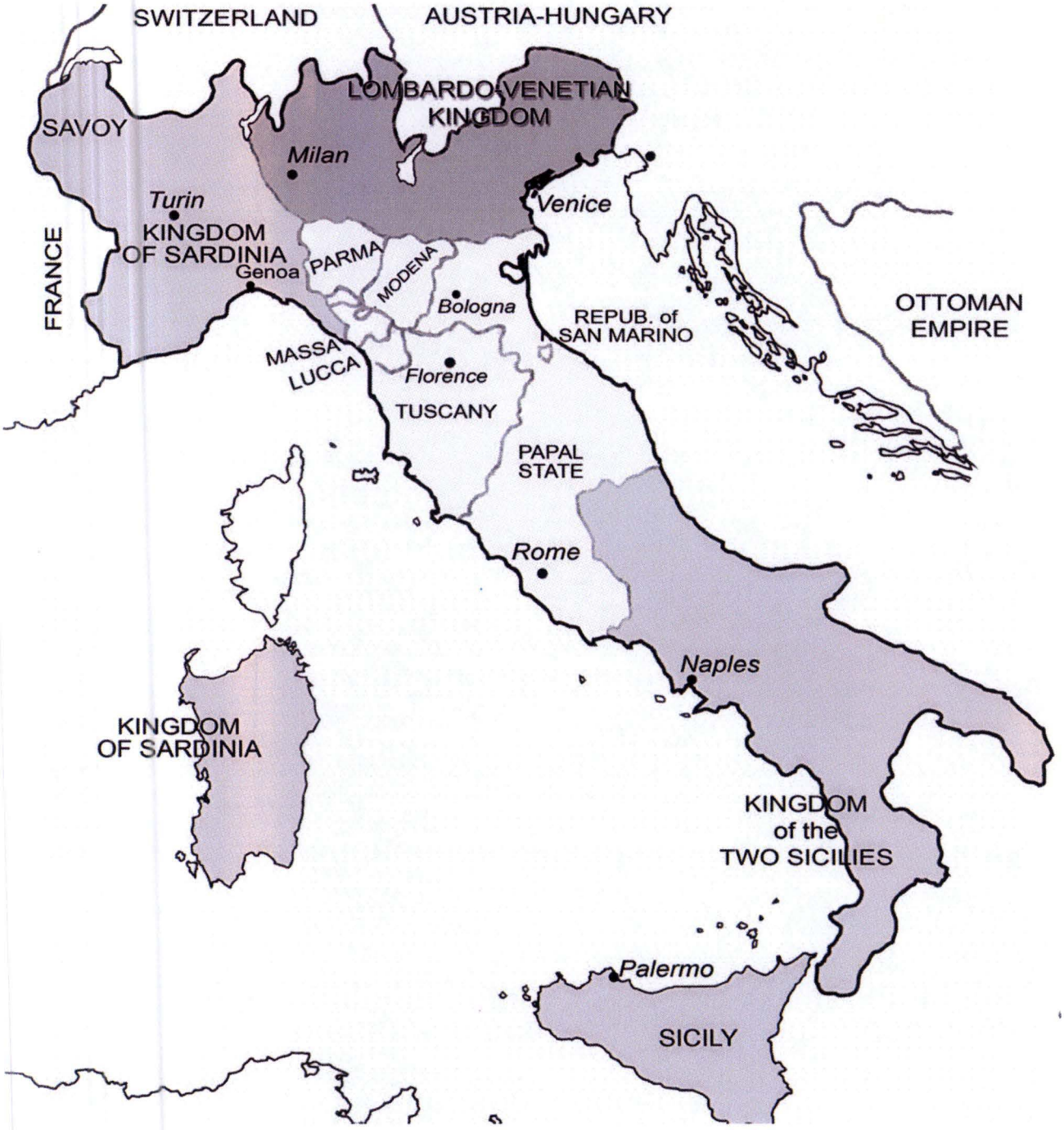
8. Appendix

Map of Italian Provinces

Map of Italian Provinces in 1871



Map of Italy in 1815



List of Italian provinces

Number of		2015	1871
Regions	(NUTS-2)	20	16
Provinces	(NUTS-3)	110	69

ID	Region	ID	Province (2015)	ID	Province (1871)
1	Piedmont	101	Turin	101	Turin
		102	Vercelli	105	Novara
		103	Biella		
		104	Verbano-Cusio-Ossola		
		105	Novara		
		106	Cuneo	106	Cuneo
		107	Asti	108	Alessandria
		108	Alessandria		
2	Aosta Valley	201	Aosta	101	Turin (Piedmont)
3	Liguria	301	Imperia	301a	Porto Maurizio
		302	Savona	302	PM-Genoa
		303	Genoa	302	Genoa
		304	La Spezia	302	Genoa
4	Lombardy	401	Varese	402	Como-Milan
		402	Como		Como
		403	Lecco		Como-Bergamo
		404	Sondrio	404	Sondrio
		405	Bergamo	405	Bergamo
		406	Brescia	406	Brescia
		407	Pavia	407	Pavia
		408	Lodi	411	Milan
		409	Cremona	409	Cremona
		410	Mantova	410	Mantova
		411	Milan	411	Milan
		412	Monza e Brianza		
5	Trentino-Alto Adige	501	Bolzano / Bozen	9999	*Austria*
		502	Trento	9999	
6	Veneto	601	Verona	601	Verona
		602	Vicenza	602	Vicenza
		603	Belluno	603	Belluno
		604	Treviso	604	Treviso
		605	Venice	605	Venice
		606	Padova	606	Padova
		607	Rovigo	607	Rovigo
7	Friuli-Venezia-Giulia	701	Pordenone	608	Udine

		702	Udine		(Veneto)
		703	Gorizia	9999	***Austria***
		704	Trieste	9999	
8	Emilia-Romagna	801	Piacenza	801	Piacenza
		802	Parma	802	Parma
		803	Reggio Emilia	803	Reggio Emilia
		804	Modena	804	Modena
		805	Bologna	805	Bologna
		806	Ferrara	806	Ferrara
		807	Ravenna	807	Ravenna
		808	Forlì-Cesena	808	Forlì
		809	Rimini		
9	Tuscany	901	Massa-Carrara	901	Massa-Carrara
		902	Lucca	902	Lucca
		903	Pistoia	904	Florence
		904	Florence		
		905	Prato		
		906	Livorno	906	Livorno-Pisa
		907	Pisa	907	Pisa
		908	Arezzo	908	Arezzo
		909	Siena	909	Siena
		910	Grosseto	910	Grosseto
10	Umbria	1001	Perugia	1001	Perugia
		1002	Terni		
11	Marches	1101	Pesaro e Urbino	1101	Pesaro e Urbino
		1102	Ancona	1102	Ancona
		1103	Macerata	1103	Macerata
		1104	Ascoli Piceno	1104	Ascoli Piceno
		1105	Fermo		
12	Latium	1201	Viterbo	1203	Rome Rome-Perugia Rome Rome-Caserta
		1202	Rieti		
		1203	Rome		
		1204	Latina		
		1205	Frosinone		
13	Abruzzi	1301	L'Aquila	1301	L'Aquila
		1302	Teramo	1302	Teramo Aquila-Teramo
		1303	Pescara		
		1304	Chieti	1304	Chieti
14	Molise	1401	Isernia	1305	Campobasso (Abruzzi)
		1402	Campobasso		
15	Campania	1501	Caserta	1501	Caserta

		1502	Benevento	1502	Benevento
		1503	Naples	1503	Naples
		1504	Avellino	1504	Avellino
		1505	Salerno	1505	Salerno
16	Apulia	1601	Taranto	1603	Lecce
		1602	Brindisi		Bari-Lecce
		1603	Lecce		Lecce
		1604	Foggia	1604	Foggia
		1605	Bari	1605	Bari
		1606	Barletta-Andria-Trani		Foggia-Bari
17	Lucania	1701	Potenza	1806	Potenza (Calabrie)
		1702	Matera		
18	Calabria	1801	Cosenza	1801	Cosenza
		1802	Crotone	1803	Catanzaro
		1803	Catanzaro		
		1804	Vibo Valentia		
		1805	Reggio Calabria	1805	Reggio Calabria
19	Sicily	1901	Trapani	1901	Trapani
		1902	Palermo	1902	Palermo
		1903	Messina	1903	Messina
		1904	Agrigento	1904	Agrigento
		1905	Caltanissetta	1905	Caltanissetta
		1906	Enna		Caltanis.-Catania
		1907	Catania	1907	Catania
		1908	Ragusa	1908	Siracusa
		1909	Siracusa		
20	Sardinia	2001	Sassari	2001	Sassari
		2002	Nuoro		
		2003	Cagliari	2003	Cagliari
		2004	Oristano		
		2005	Olbia-Tempio	2001	Sassari
		2006	Ogliastra	2003	Cagliari
		2007	Medio Campidano		
		2008	Carbonia-Iglesias		