

What we didn't know: The Italian Convergence in Real Wages (1800-1860)

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Abstract

This paper presents a possible starting point for the Italian regional divergence using new data collected in archives and unveils the dynamics of the North-South gap from 1800, finding different results from what was previously known. The new evidence proves that a "High Wages Hypothesis" approach for explaining the industrialization process and economic development is not confirmed in the Italian context. High wages in the South of Italy did not translate into industrialization but collapsed in the 1840s when the lower real wages of the North reached comparable levels, hence starting the divergence. Moreover, due to the new wage observations for the South, the paper identifies the "wage spectrum", tests the existence of the truly unskilled series within the unskilled series, and makes an internal comparison of southern Italy's economy using skilled and unskilled building wages from different areas.

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Introduction

When did regional divergence start in Italy? This paper presents a possible answer to this question by comparing real wages series between the North and the South of Italy before 1861.

Federico et al (2019) confirmed that at the time of Italy's unification a gap between the North and the South was already sizeable in terms of real wages. For that reason, historical economic investigation to identify the emergence of the Italian regional divide should focus on the period before 1861 to test whether and when the divide emerged. Malanima (2006) presented the earliest daily real wages comparison between the North and the South before Italy's unification, but he left several doors open for revising his results due to the limitations of the evidence base, in particular, for the southern data for the period 1800-1860.

The novelty of this paper is that southern data for that period were collected from archives leading to results that differ from those of Malanima (2006). The new evidence includes building wages from the Kingdom of the Two Sicilies and are for the capital Naples, as well as the peripheric province of Calabria Ultra, given the well-known problem of the misleading characteristic of Naples in southern Italian economic history. Due to the large number of wage observations collected in archives, the paper: identifies the "wage spectrum"; tests the existence of the *truly unskilled* series within the unskilled series; makes an internal comparison of the South using skilled and unskilled wages from the different areas.

The paper draws upon this data to also compare northern and southern living standards, as unskilled real wages (Allen, 2001) and the skill premium, using the published series for the Duchy of Milan, in the North of Italy (Aleati 1961; De Maddalena 1974) from 1800 to 1860.

In terms of consistency, the North/South gap founded at the unification is in line with the conclusion presented in Federico et al (2019) rather than the revisionist approach proposed by Malanima (2006) and Daniele and Malanima (2007, 2017).

The analysis of real wages allows us to answer the following questions: were workers in the North better off than in the rest of Italy in the period before unification? In light of the wage economy hypothesis, did the North of Italy industrialize faster because unskilled labour was more expensive, thus stimulating its replacement with machines? Related to this point, when did the North's economic and development trajectory diverge from the South, generating the current differences in living standards and industrialization?

The unexpected results of the paper advances the frontier of knowledge on the narrative of the Italy's Little divergence by identifying a point when the divergence between the North and the South emerged and highlighting that a "High Wages Hypothesis" approach could not be confirmed in the Italian context.

I. Background

Italy's Little Divergence debate

Regional gaps exist in several countries, but the one between the North and the South of Italy is universally recognized as a "special" case.

Although it is widely considered that the debate on Italian divergence inevitably began with the Italian unification (Felice, 2007), Marx and Engels (1850) first noted a regional social difference between the North and the South of Italy in observing the 1848 riots. In the articles on *Neue Rheinische Zeitung*, Engels observed that in the North, after the insurrection of the "Five Days of Milan" and the restoration of the Austrian rule, the people "are so deeply imbued with the revolutionary spirit that they cannot be held in check for long... Italy will be able to avoid new delusions and to secure her independence under a single democratic banner." (Engels, August 11, 1848). In comparison Marx observed in Naples the existence of a particular case of *Lumpenproletariat*, the Lazaronium (*i Lazaroni*), as a class without consciousness used as a reactionary force by the elite. In Naples, the Lazaronium were allied with the monarchy against the bourgeoisie to defend the status quo (Marx, November 1848).

The unification then emphasized the disparities between the Italian states. In recognition of the North-South social gap, Lombroso suggested its roots had an anthropological explanation correlated to genetic factors (Lombroso 1862, 1871, 1876). Ferri (1895) nurtured this idea proposing racial disparity by measuring the size of Italian skulls and attributing an inferior status to the southern people. The upgrade, if it can be said, of racial studies was with Niceforo's research² which believed that the southern population had a distinct connection with Africans while the northern one descended from the Aryan race (Niceforo, 1897, 1898, 1901).

The debate acquired new lynch with Colajanni's works (1894, 1898) which argued that the wealthy southern landowners exploited the masses, preventing their full development and Fortunato (1911) who considered environmental characteristics as fundamental for understanding the North-South gap. The geological nature of the land, the drought, and the scarcity of the waterways, especially in the spring and summer months, compromised the possible economic development of the South. The South's economic and political choices were the expressions rather than the cause of the southern backwardness.

In similar terms, Nitti (1900, 1901) analysed the policies of the Italian pre-unification states and discovered that the Savoia Kingdom presented a financial decline, from 1848 and worsened until

² The "scientific essence" of his studies can be observed by just reminding that Hans Gunther, anthropologist and one of the first members of the Nazi party, used Niceforo's works as sources of his main book on the history of the race (Gunther, 1927)

unification due to enormous public works that led to a road network, several railways, and canals while the southern Kingdom avoided public investment for infrastructure for keeping the taxation level low. The lack of public spending and its resultant lack of infrastructure, roads, and public schools in the Kingdom as well as low public debt generated the myth of the Kingdom of the Two Sicilies' "treasure". This is used today by a number of denialistic historians who describe southern Italy as a rich region at the time of unification due to its lower public debt than that of the Kingdom of Sardinia. For Salvemini (1898) the unification's extension of the northern administrative and taxation system to the whole peninsula produced a series of damages to the South, particularly to the small owners and the limited bourgeois groups, blocking their growth and formation, and preserving the southern semi-feudal social structure.

In the same period of Nitti, Salvemini and Fortunato, we can see the roots of an "ideological" debate with the Oriani's works (1892, 1908) that mainly turned the attention of the North-South gap on the *Risorgimento*, the social and political event which unified the different states of the Italian Peninsula into the Kingdom of Italy. He harshly criticized the unitary new-born state for not having completed the institutional unification with a "spiritual" unification. With his works, he became without his knowledge (he died in 1909) one of the main inspirations for Mussolini. In fact, Mussolini referred to fascism as the direct heir of the *Risorgimento*, and in his view, fascism finally could complete Italy's unification. Mussolini's search for a link in the past was necessary to legitimize the advent of the fascist party and it is typical of authoritarian regimes and their propaganda. This is seen, for example, by the "black shirts" of Mussolini and their linkage to Garibaldi's "red shirts". Many academics tried to explain unifying mission of fascism including Volpe (1927) and Gentile (1923). There were also exponent of the fascist left like Olivetti (1930), who believed that the *Risorgimento* was the conquest of the bourgeoisie over the poor, and therefore fascism had to spread the idea of Italy as a nation.

A similar interpretation was given by the anti-fascist intellectuals Dorso (1925) and Gramsci (1948-1951), who believed that the backwardness' origin of the South was a result of the unification effort being led by the northern bourgeoisie, who stole the initiative from the southern revolutionary forces. In this way, the conservative political forces of the North were able to prevail over the privileged feudal classes of the South in exchange for post-unitary political support. Therefore, with the unification, the ruling classes of the South undertook a process of adaptation to the new regime to survive, and thus avoiding the need of development. For Croce (1925), the *Risorgimento* was a miracle of the liberal elite. He recognized a difference within the Kingdom of the Two Sicilies between life in the capital Naples and life in other provinces and rural area. He hypothesized that part of the causes of the southern backwardness was due to the peculiar behaviour of the bourgeois in the provinces. In his view, they were

too focused on individual interest and blind to the common good, culture, and general interest, which hampered southern development.

From the 1950s, the debate on the North-South gap conserved a political-ideological aspect with a strong anti-fascist approach and it was less historical and scientific. In these terms, the so called Gramscian-revisionism on the southern question acquires new strength with the studies on the banditry of Molfese (1964) and De Jaco (1969). This step of the debate is fundamental in the Italian Divergence narrative because the southern brigand became the symbol, and at the same the historical proof, of the rebel who opposed him/her-self to the Piedmontese power. In this approach, we can see the seeds of today's "neo-Bourbon" narrative which declares that southern Italy today owes its backwardness to the unification-conquest by the North.

The empirical base of this approach is provided by Malanima (2006) which presenting the first real wages comparison before unification and Malanima and Daniele's (2007) work on the first long-run estimate of the regional per capita product in North and South Italy. Their results were immediately considered controversial (Felice 2013) because clashed with everything that had been discovered about the North and South gap using an economic and statistical approach in data analysis. In fact, in recent decades³, the cliometric approach, or scientific revisionism, often based on archival data, such as this paper, questioned the narrative of prosperous southern Italy usurped by the North after unification.

Looking at the real wages, Malanima (2006), as mentioned, presented the earliest real wages comparison between the North and the South of Italy in the period before unification. His results, however, is not in line with the recent works on real wages Federico et al (2019) that confirmed that at the time of Italy's unification, a real wages gap between North and the South was already sizeable (Federico et al 2019). Today the debate is quite crystallized around two main positions: in one view, the North part of Italy pulled away from the South before the Unification (Felice, 2011, 2012, 2013); in the other view, at the time of Unification the North and the South of Italy were at the same level in terms of income and workforce, and therefore North and South were on par (Daniele and Malanima 2014). Reading the pioneering contribution on real wages by Malanima (2006), the only possible limit of his study is related to the data for the period from 1800 to 1860 for southern Italy. This paper presenting new data on the South of Italy for the period 1800-1860 updates the analysis and offers new contributions to the Italy's Little Divergence debate.

³ for details refer to Di Martino et al (2020), Felice (2013); Vecchi (2011)

II. Data

This section describes wages and prices data used and their sources. Starting with the wage data, for the Duchy of Milan in the North, wages are from Aleati (1961) and De Maddalena (1974). De Maddalena (1974) presented wages series in Milan for mason and helper, listed respectively as skilled and unskilled workers. Aleati's series (1961) refer to building works carried out in the agricultural territory of Pavia and are for *mastro* (mason) and *falegname* (carpenter) considered skilled workers and *manovale* (manual labourer), *primo garzone* (helper) *secondo garzone* (helper) and *garzone falegname* (helper of carpenter) evaluated as unskilled workers. However, the *secondo garzone*, as explained by Aleati, was a boy, and therefore his data series were not used in the analysis⁴.

As regards the data for the daily wages' reconstruction in southern Italy, what it should be underlined is that there is no archivistic source constant in time for Naples and Calabria Ultra. For this reason, the composition of the dataset is characterized by the use of different typologies of sources, classified into three main groups fitting the nature of the sources: ecclesiastical, private, and public. The ecclesiastical sources are the accounting records of parishes, churches, confraternities, and monasteries. The private sources come from the accounting books of some noble families of the South, like the Bourbon royal family and the Doria d'Angri, Serra di Gerace, Nunziante, and San Severino families. Sources of public nature are the Royal High Schools' accounting books.

All the payment were in cash as no in-kind payments were indicated. Using the information from these sources a preliminary division skilled/unskilled workes has been made assuming that the *falegname* (carpenter) and the *mastro muratore* (mason) were skilled. The *manipolo* (labourer), *garzone* (helper), *lavoratore per la strada* (road-building worker), *manipolo falegname* (manual labourer subordinate of carpenter) and labourers employed for specific construction projects as *travagliatore* or *lavori di scolo* (project worker) were unskilled workers. All payments explicitly relating to children or too low to be implied to be relating to children have been dropped. Table 1 presents the occupations and classifications of the workers and the relative wage statistics. On 30,273 wage observations for Naples, 85.67% are for unskilled workers, while

⁴ In the comparison the predicted is obtained from the following regression (Clark 2007, Ridolfi 2019):

$$\ln(Wage_{it}) = \alpha_i + \sum_j \delta_j Work_j + \sum_k \varphi_k Source_k + \sum_t \vartheta_t Year_t + \varepsilon_{it}$$

Where $Wage_{it}$ is the individual nominal day wage i at time t expressed in log form; $Work_j$ is a dummy variable for each of the occupation of work; $Source_k$ is a dummy for each of sources (de Maddalena or Aleati); $Year_t$ is the indicator for each of the years when the payment i is observed. The regression is run for skilled and unskilled workers in two different moments.

14.33% are for skilled. Figure 1 reports the distribution of nominal daily wages for Naples and the respective local polynomial smooth with 95% confidence interval and the local mean smoothing and compares the data with the existence series of Malanima 1801-1860.

Table.1 New wage observations by occupations and skill Naples (1803-1860)

	Occupation	Original Occupation	Freq.	Perc.	Wage	St. Deviation	Min.	Max
Naples (1803-1860)								
Skilled	Carpenter	Carpenter	1,431	32.99	8.38	0.99	6.65	9.98
	Mason	Mason	2,907	67.01	8.18	1.12	5.70	9.98
		Tot. skilled	4,338		8.25	1.08	5.70	9.98
Unskilled	Labourer	Project Worker	1,638	6.32	4.96	1.14	1.52	6.65
		Manual Laborer	7,325	28.24	4.43	1.21	1.52	7.60
		Helper	505	1.95	3.87	1.64	1.52	5.70
		Road-building worker	16,402	63.24	3.72	0.76	1.58	5.70
		Subordinate of carpenter	65	0.25	3.19	0.57	2.85	4.75
			Tot. unskilled	25,935	100	3.99	1.04	1.52

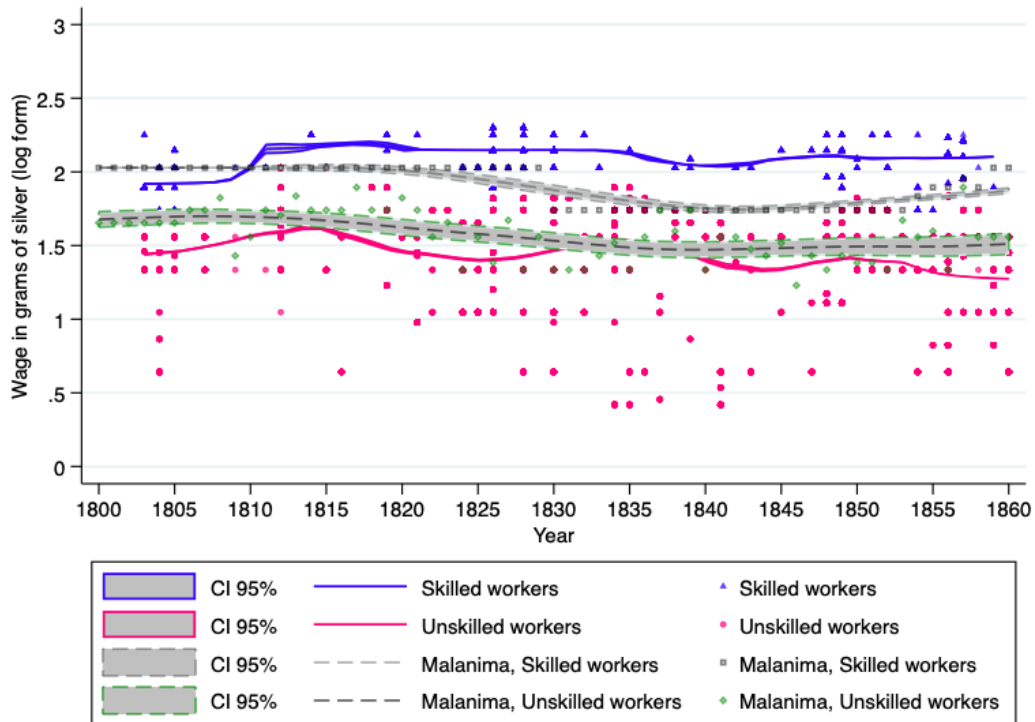
Note The wage values are the mean expressed in grams of silver

Sources: *Archivio di Stato di Napoli*, for details see appendix 1. Conversion rate to silver from Martini (1883)

As we can see in graph 1, there is discrepancy with the existing Malanima series, quantified in table 4, mainly because his series are not exclusively for the building sector, but before listing the explanations of these differences some explanations on the new series should be offered.

Looking at the cloud of new observations for the unskilled workers, it suggests that some payments were likely intended for workers who were not properly unskilled. In fact, as Mocarrelli and Ongaro (2019) suggested, for the Early Modern period, it is difficult, if not impossible, to precisely calculate the degree of specialization in various productive sectors. A similar approach was taken in Stephenson's work (2018) which analyses the wages of unskilled workers on London building sites between 1650 and 1770, and highlights how, over the decades, the binary skilled/unskilled division carried out in the data of the daily wages paid raises some questions and doubts. In detail, some workers who carried bricks and performed other duties after years of training were reasonably competent because they acquired know-how by "learning on the job". Their more proficient performances could therefore be paid as semi-skilled further than as unskilled.

Graph 1, New wage observation in Naples 1803-1860 and Malanima (2006) series



Note: the values are expressed in grams of silver (log form). The fitted lines with the 95% confidence interval are obtained using the `lpolyci` command in Stata 16.

Sources: *Archivio di Stato di Napoli*, for details see appendix 1. Malanima data from Malanima (2006). Conversion rate to silver from Martini (1883)

Additionally, the skilled/unskilled division in construction work by simplifying the classification of occupations neglects one of the main points of wage determination in the modern pre-capitalist era, precisely physical strength. Stephenson emphasized how strength was vital in the pre-industrial economy and how it had a premium in the pre-industrial labour markets. Having greater physical strength in a job based on physical effort meant having greater productivity and therefore higher salary. Closely related to physical strength is the age of the workers. As the age of the workers increased, physical strength increased, and therefore wages could increase.

However, as Caracausi and Ago (2018) noted, age could also have a negative impact because the older worker could be weaker, causing a decrease in the wage received because of his low performance. Additionally, economic and institutional factors could affect the determination of different levels of payments for similar jobs like the trend of the prices of essential goods, the structure of the supply and demand in the labour market, the existence of associations and organizations of construction workers, the urgency, the dangerousness and the condition of the construction works, and trust placed in workers. The historical documents suggest a much more complex articulation of the workforce and occupations than the skilled/unskilled division.

Rota and Weisdorf (2020a) face the same problem in Roman wages reconstruction and propose to cut off the top 50 per cent of the wage observations in the group of unskilled workers to isolate the semi-skilled workers and obtain a “truly” unskilled series. This procedure reduces observations in the lower 50% of the wage distribution (the number of observation cut is 5,164).

Furthermore, some other biases may have altered the Neapolitan wage series due to the fragmentation of sources. In other words, the “wage spectrum” of the data shown in Graph 1 could also reflect the fragmentation of the sources, the variety of occupations observed in Table 1, and the different period of time in which the observation were observed. The following tables clarify the entity of the bias: table 2 lists the percentages of the source’s provenance for the skilled and unskilled series and the percentage of wages observed in the harvest season; table 3 describes wages statistics by sources, season, and skill level. As we observe, data comes primarily from private sources (86.12% for skilled; 92.08% for unskilled). In private sources the wages mean for skilled is the highest while the unskilled workers had the lowest value. Moreover, for unskilled workers data from public sources present a higher mean value. A small percentage of the wage observation refers to harvest period (June and July). Compared with the wages observed in no harvest season, the means in harvest season are 4% higher for skilled workers and 20% higher for unskilled workers compared to no harvest season. In this period of the year, as it is expected, the harvest increased the demand of workers in agriculture and, on the other hand, pushed up nominal wages in the building sector to be more attractive to workers.

In Table 3., though the mean for unskilled wages in harvest season is higher than in non-harvest, the maximum value during harvest is lower than the maximum value observed in non-harvest season. The highest nominal wage in non-harvest season was in 1812 and 1815, during the Naval Block of the Mediterranean Sea, a period characterized by high inflation levels.

Table 2. Wage observations, percentage by sources, seasons, and skill level

	Skilled	Unskilled
	%	%
<i>Sources Nature:</i>		
Ecclesiastical	13.88%	3.25%
Private	86.12 %	92.08%
Public	0.00	4.01%
<i>Season:</i>		
Harvest	1.01%	1.81%
No Harvest	98.99 %	98.12%

Table 3 New wage observations, descriptive statistics by sources, season, and skill level

	Skilled workers					Unskilled workers				
	Mean	St. Dev.	Min	Max	Median	Mean	St. Dev.	Min	Max	Median
<i>Sources Nature:</i>										
Ecclesiastical	6.95	0.66	5.7	9.5	6.65	4.08	0.85	1.90	5.42	4.08
Private	8.45	0.99	5.70	9.98	8.55	3.94	0.99	1.52	7.60	3.80
Public	0	0	0	0	0	5.17	1.24	1.52	6.65	5.70
<i>Season:</i>										
Harvest	8.55	0	8.55	8.55	8.55	4.76	1.31	2.66	6.65	4.28
No Harvest	8.24	1.09	5.70	9.98	8.55	3.98	1.03	1.52	7.60	3.80

Note The wage values are expressed in grams of silver

Sources: *Archivio di Stato di Napoli*, for details see appendix 1. Conversion rate to silver from Martini (1883)

Data's heterogeneity and the related "wage spectrum" testify to the complexity of historical reality and its reconstruction. In the same place, workers with the same, or similar, occupations did not receive a constant and static wage for the same, or similar, job performance for all the year in each source. The multifaceted information collected may raise doubts that a change in the average wage comes from the use of different sources or different occupational categories rather than from an actual change in the trend. Sample selection bias due to the sources and compositional effects are common elements and potential confounding problems in historical data reconstructions. Besides, when we do historical reconstruction, a selection bias is taken already from the documents survived by the time (Lustick 1996; Inwood and Maxwell-Stewart 2020). The solution adopted for the compositional effects and the sample selection bias is the following regression, which controls the possible bias using a set of dummy variables:

$$\ln(Wage_{it}) = \alpha_i + \sum_i \delta_i Work_i + \sum_k \varphi_k Source_k + \sum_t \vartheta_t Year_t + \omega_l Harvest_l + \varepsilon_{it}$$

Where $Wage_{it}$ is the logarithm of the individual nominal day wage i at time t ; $Work_i$ is a set of dummy variables for each of the original occupations observed and list in the table.4; $Source_k$ is a set of dummies for each of the three categories of provenience of the data (Ecclesiastical, private and public); $Year_t$ is the indicator for each of the years when the payment i is observed; $Harvest_l$ is a dummy variable equal to 1 if the wage is observed during June or July, and vice versa it is equal to 0 if the wage was during a non-harvest period or it comes from a period where it was not possible to discern the period of the year during which it was observed. The regression is run for skilled, unskilled, and truly unskilled workers in different moments.

Table 4 shows the averages of predicted nominal wages (with new data) per decade compared to the Malanima's series and their relative ratios. In fact, as said before, this paper updates the existing data for the South of Italy elaborated by Malanima (2006), proposing a series that allows a comparison between

workers of the building sector thus satisfying the simple but unscratchable law of comparison “apples with apples”. From the ratio column between the new and old skilled wage series (Ratio A/D), our new estimation is on average 22% higher than Malanima’s series. For unskilled workers (Ratio B/E), our new estimate is on average 11% lower than the Malanima series and considering mine truly unskilled workers I and Malanima’s unskilled worker I, the ratio shows that our estimate is on average 20% lower.

Table 4 Comparison between new series for Naples and Malanima’ series

	New series			Malanima’ Series		Ratio A/D	Ratio B/E	Ratio C/E
	Skilled workers (A)	Unskilled workers (B)	Truly Unskilled workers I	Skilled Workers (D)	Unskilled workers I			
1800-1810	7	4.5	4.4	7.6	5.3	0.92	0.85	0.83
1811-1820	8.9	5.0	3.8	7.6	5.9	1.17	0.84	0.64
1821-1830	8.6	4.2	3.8	7.4	4.6	1.16	0.92	0.83
1831-1840	8.2	4.5	4.0	5.7	4.5	1.44	1.00	0.88
1841-1850	8	3.9	3.7	5.7	4.2	1.40	0.93	0.88
1851-1860	8.1	3.9	3.5	6.6	4.8	1.23	0.81	0.74

Note: The values are expressed in grams of silver

Sources: *Archivio di Stato di Napoli*. Malanima’s data are from Malanima (2006). Conversion rate to silver from Martini (1883)

Several reasons explain the discrepancies between series (A) – (D), (B) – I and (C) – I. Considering in detail the skilled series and their ratio (Ratio A/D), Malanima says that after 1806 “Sometimes the wages are those of workers in the surroundings of Naples”⁵ in detail, he refers that his data for skilled workers, from exclusively ecclesiastical sources, are from *Aversa* (19 km from Naples), *Trità della Cava* (54 km from Naples) *Benevento* (88 km from Naples) and *Padula* (161 km from Naples). For the unskilled series, Malanima does not use data for the building sector. In detail, after 1805, he used the wage of a pruner in Molfetta. (in Apulia, 233 km from Naples).

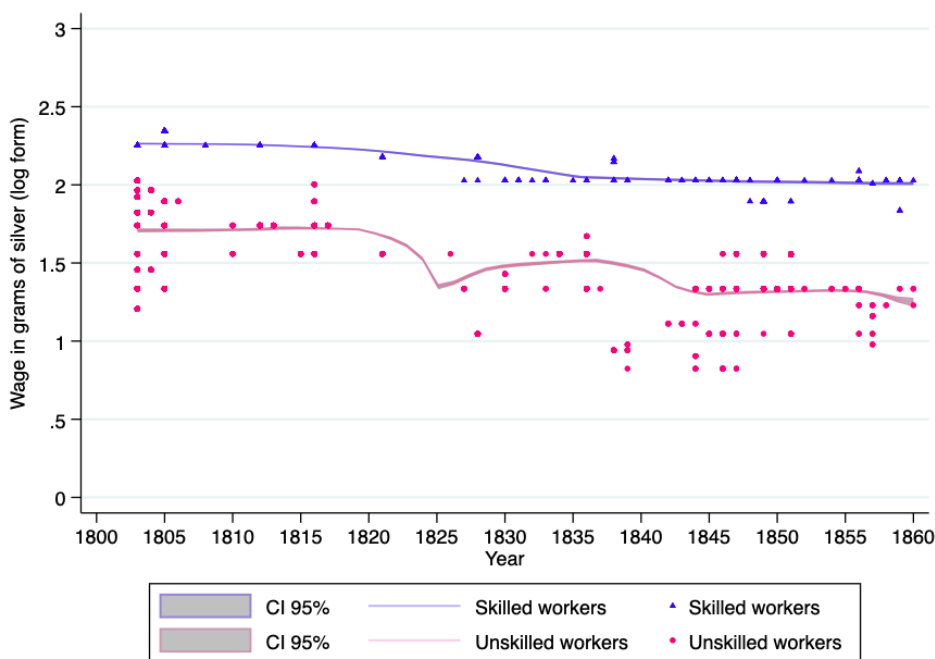
The reasons for the divergence between the new series and Malanima’s series for unskilled workers are therefore quite trivial. We use data from different workers and different places. It is normal to observe a different wage level and trend between unskilled building wage in Naples and skilled agricultural workers in Molfetta. For these reasons, the data revision made by this paper is essential if we considered building wages as a proxy of living standards and if we want to advance the frontier of knowledge in the Little Italian Divergence debate.

Another original aspect of the paper is that I collected data also for a peripheric area of the southern Kingdom, the province of Calabria Ultra. The reasons for the choice of this province are many: it is

⁵ page 115, Malanima (2006)

considered today one of the poorest areas of Italy, and we can see the difference of living standard with the main city of the South of Italy. Moreover, it also allows a comparison with the series previously used by Malanima (2006) to represent the South, and as will be seen below in the text, it allows the creation of a predicted series for southern Italy in which the information of Naples is used with that of Calabria Ultra to create a first reconstruction of the southern living standards. As for Naples, also in this case in the data collection it was not possible to use a single archival source persistent over time, but the construction of the historical series is the result of the consultation of several sources of different nature, in this case also of different archives. The fragmentation of the sources made it necessary to classify the sources by their nature: ecclesiastical, private, or public. Wage observations are 3,602 daily payments. A division was made between skilled and unskilled workers using the information contained in the accounting books as can be seen in the following table and graph.

Graph 2, New wage observation in Calabria Ultra 1803-1860



Note: The values are expressed in grams of silver (log form). The fitted lines with the 95% confidence interval are obtained using the `lpolyci` command in Stata 16

Sources: *Archivio di Stato di Catanzaro*, *Archivio di Stato di Napoli*, *Archivio ecclesiastico di Catanzaro*, for details see appendix 1. Conversion rate to silver from Martini (1883)

Table 5 New wage observations by occupations and skill Calabria Ultra (1803-1860)

	Occupation	Original Occupation	Freq.	Wage	St. Deviation	Min.	Max
Calabria Ultra (1803-1860)							
Skilled	Carpenter	Carpenter	29	10.22	0.60	7.6	10.45
	Mason	Mason	371	8.60	0.98	6.27	9.5
		Tot. skilled	406	8.72	1.04	6.27	10.45
Unskilled	Labourer	Project Worker	633	5.19	0.69	3.80	8.84
		Manual Laborer	2,378	4.91	1.22	2.28	7.60
		Helper	185	3.97	1.02	2.57	5.70
		Tot. unskilled	3,196	4.88	1.16	2.28	7.6

Note The wage values are the mean expressed in grams of silver

Sources: *Archivio di Stato di Catanzaro*, *Archivio di Stato di Napoli*, *Archivio ecclesiastico di Catanzaro*, for details see appendix 1. Conversion rate to silver from Martini (1883)

By using the same regression for the predicted wages in Naples but eliminating the variable Harvest_t since it was not possible to establish the exact time of the year paid, we obtain a skilled and unskilled series for Calabria Ultra which is cleaned by the possible biases coming from the use of different sources and from the different occupations. Comparing the ten-year averages of Calabria Ultra with the new series of Naples it turns out that the nominal wages of skilled and unskilled and truly unskilled workers are in the peripheral area of the kingdom higher on average, respectively, by 9%, 3% and 9% for the whole period considered.

Going into detail, it can be observed that up to 1820 the unskilled wages of Calabria Ultra reached on average a value 18% higher than those of Naples. In the forty years prior to the unification of Italy, unskilled wages have higher values in Naples (+ 5%). Regarding the wages proposed by Malanima (2006), for the whole period considered, the skilled workers wage in Calabria Ultra were 31% higher, while for unskilled and truly unskilled workers were respectively 9% and 16% lower compared to his series. In detail, between the two unskilled series (Calabria Ultra and Malanima's) there is almost a convergence between the ten-year averages between 1800 and 1820, while between 1821 and 1860 nominal wages in Calabria Ultra are 13% lower than the series proposed by Malanima. The point of greatest divergence between the two unskilled series is in the pre-unification decade with the wages of Calabria Ultra lower than those of Malanima by 25%, that become 29% comparing his unskilled workers with the truly unskilled workers.

Table 6 Ten-years mean in silver for Calabria Ultra skilled and unskilled workers

	Calabria Ultra series		
	Skilled workers	Unskilled workers	Truly Unskilled workers
1800-1810	10	5.5	4.6
1811-1820	9.8	5.6	5.5
1821-1830	9	3.8	3.7
1831-1840	8.7	4.6	4.5
1841-1850	7.8	3.7	3.6
1851-1860	7.7	3.6	3.4

Note: The values are expressed in grams of silver

Sources: *Archivio di Stato di Catanzaro*, *Archivio di Stato di Napoli*, *Archivio ecclesiastico di Catanzaro*, for details see appendix 1. Conversion rate to silver from Martini (1883)

Using data from Naples and Calabria Ultra, this paper offers historical series that tries to express the heterogeneity of southern Italy using the following OLS model regression:

$$\ln(Wage_{it}) = \alpha_i + \sum_i \psi_i Work_i + \sum_j \delta_j Loc_j + \sum_k \varphi_k Source_k + \sum_t \vartheta_t Year_t + \varepsilon_{it}$$

Where $Wage_{it}$ is the logarithm of the individual nominal day wage i at time t ; $Work_j$ is a set of dummies for each of the occupation of work classified for unskilled workers; Loc_j is a set of dummies for each of the localization where the wage is observed; $Source_k$ is a set of dummies for each of the two categories of provenience of the data (Ecclesiastical, , private and public); the movement of wages across years is estimated by the variable $Year_t$ which is when the payment i is observed at the time t . The regression was run for all observations of unskilled workers observed in Naples and Calabria Ultra and for the low-50s wages for Naples and Calabria Ultra.

II Price

The consumer price index used to turn nominal wages into real wages is based on the classical structure of the standardized methodology proposed by Allen (2001) with some adaptations (Malanima 2013, Humphries 2013, Rota and Weisdorf 2020a). The data for the North are from Allen (2001) and for the South of Italy are from Fiore Melacrinis (unpublished) which used price data for Naples and Calabria Ultra. The two baskets have the same assets and the same number of calories per day as shown in the following table:

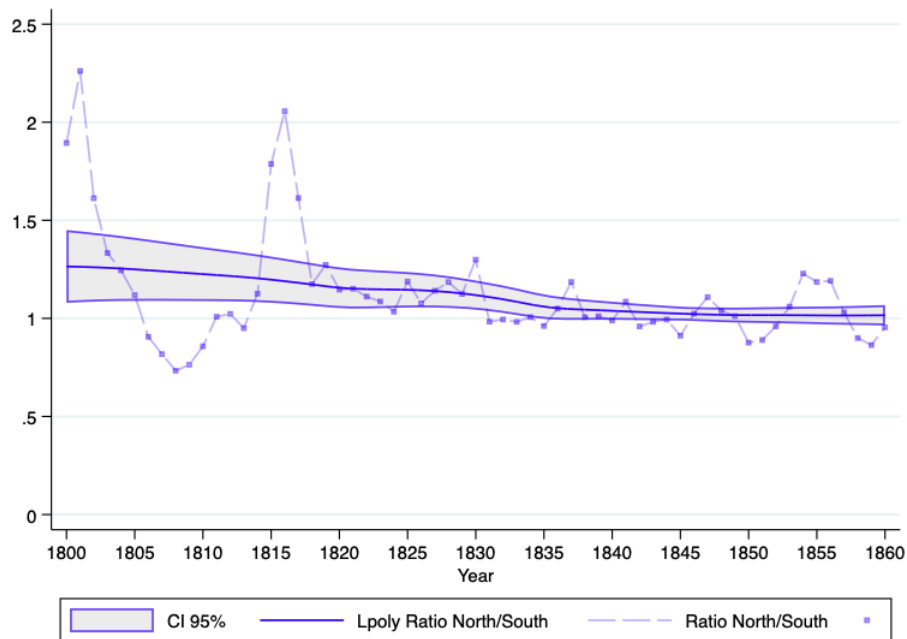
Table 7 Consumption basket for the North and the South of Italy

	Unit	Calories per unit	Quantity
<i>Food:</i>			
Bread	Kg	2,450	234
Meat	Kg	2,500	26
Olive Oil	Litres	8,142	6.2
Wine	Litres	850	76
Cheese	Kg	3,750	5.2
Eggs	Units	79	52
Beans	Litres	2,590	52
<i>No-food:</i>			
Charcoal	Kg	2 BTU	84
<i>Total calories</i>			<i>2,500</i>

Sources: Allen, 2001; Malanima 2013, Humphries 2013, Rota and Weisdorf 2020

At the beginning of the period considered, as Graph 3 shows, the ratio between the CPI of the North and the South fluctuates strongly to 1825 when a slow convergence begins between the two series. Then the prices of the south increased and converged with the higher prices of the north of Italy. In the two decades before the unification of Italy, the graph shows a trend of convergence between the ratio's trends. Federico (2007) pointed out that Italy experienced a process of market integration in the 19th century, and that the convergence in wheat prices started in the late 1840s-early 1850s. Taking into account the baskets of consumption with the same assets of the North and the South of Italy what we could deduce from this graph is that a certain synchronization of the prices seems to pre-exist the unification of Italy starting from 1830s.

Graph 3, CPI Ratios 1800-1860

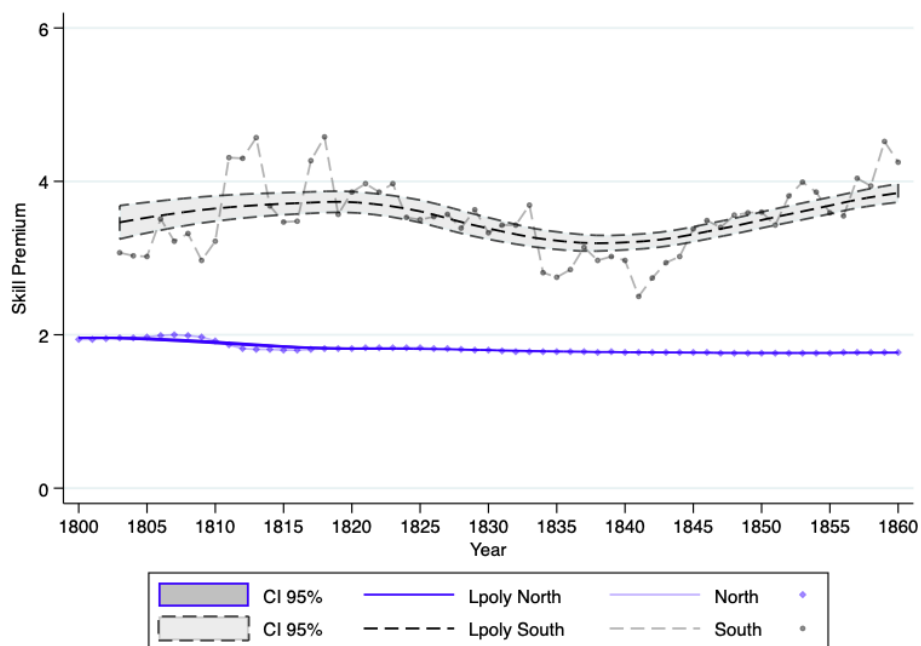


Note The ratios are obtained dividing the daily CPI of northern Italy with the CPI of the South The fitted lines with the 95% confidence interval are obtained using the lpolyci command in Stata 16 Sources: Allen (2001) for northern data, Fiore Melacrinis (unpublished) for southern data. The composition of the baskets is the same and shown in table 7

III. Comparison

In this section there are the skill premium and real wages comparisons. Starting with the skill premium, it is obtained dividing the predicted daily skilled wages with the predicted daily unskilled wages (daily truly unskilled for the South). The mean value of skill premium in the North is 1.81 while in the South 3.51. We can see that in northern Italy it remains almost flat for all the period observed, with a slight negative slope from 1807 (from 1800 it decreased of 8.8% until the unification). We observe a different trend if we look at the skill premium in the South. In this case there is a much more fluctuating trend which has a negative inclination from 1820 until 1841 (-35.2%) and then positive tendency until Italy's unification (+70%).

Graph 4, Skill Premium in northern and southern Italy, 1800-1860



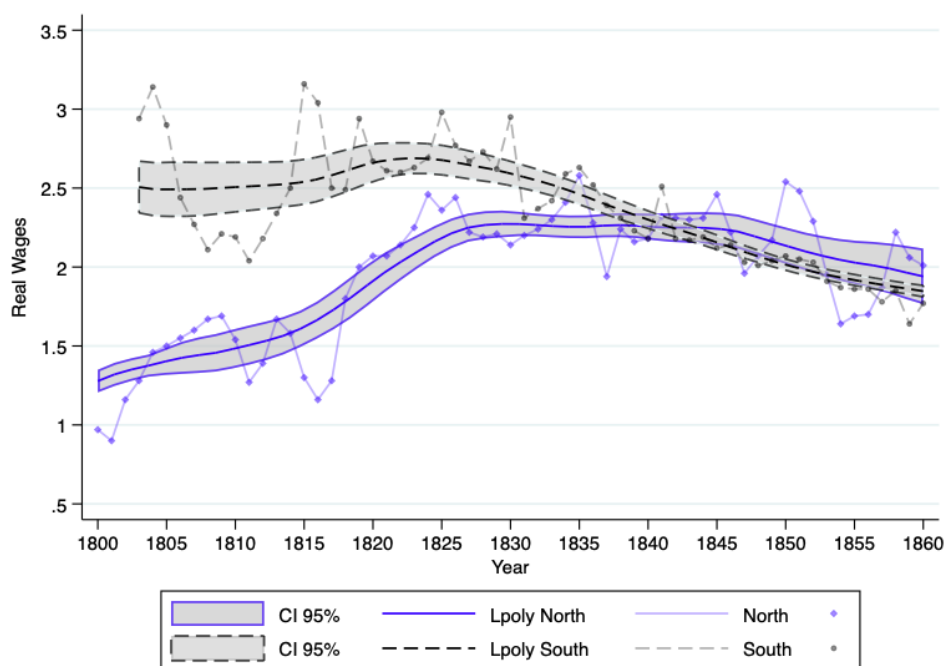
Note: The skill premium are obtained dividing nominal daily skilled wage for the daily unskilled wages (truly unskilled for the southern Italy); The fitted lines with the 95% confidence interval are obtained using the `lpolyci` command in Stata 16

Sources: see text

Turning the attention on the graph 6 we can see the real wages comparison between the North and the South. The values shown the daily nominal wages divided by the daily CPI. The north at the beginning

of the period has the lowest value and its ratio with the real wage of the south in 1803 is 0.44. From the beginning of the series and up to the Vienna's Congress, the standard living in the South grew by 7.4% while those in the north by 34%.

Graph 5, Real wages in Italy, 1800-1860



Note: The real wages are obtained dividing nominal daily wage for the daily CPI. The fitted lines with the 95% confidence interval are obtained using the `lpolyci` command in Stata 16

Sources: see text

In the years following the Restoration, a convergence began between the two series, and it took place in 1840 when the North/South wage ratio was 1. In these years, from 1815 to 1840, the South registered a -30.9% and the North + 67.7%. From 1840 to 1860 both series decreased, albeit to different degrees (South - 19%, North - 8%), delivering at the time of the Italy's unification a ratio between standard North/South living equal to 1.14. In terms of consistency in the results, the North/South gap at the unification seem to be in line with the conclusion presented in Federico et al (2019) rather than the revisionist approach proposed by Daniele and Malanima (2007, 2017) and Malanima (2006).

IV. Hypothesis

Some hypotheses explain the two main questions that come from the comparisons: Why was there a divergence between the North-South skill premium? Why did southern living start to decline from 1830?

Starting with the first question, an explanation could be found in Van Zanden (2009) who observed that the skill-premium of continental Europe has a stable value from 1550 until 1990, while southern Europe had an increasing trend since 1825. He hypothesised that the structure of employment relationships could be at the roots of that divergence and explained that two segments constituted the labour market in the premodern periods. The first "segment" of small size, was represented by the labour market, defined as internal. Its characteristic was that, since it was small and "internal", it had stable employment relationships and almost fixed salaries. The second "segment" represents the "external" labour market and had different characteristics from the first. The workers of the second segment were often seasonal migrants from other geographical locations and were employed based on work projects. The instability of work was reflected in wage fluctuations much more unstable than those of the first segment. In this light, the stability of nominal wages, caused by a tighter labour market, translated into stable and fixed skill-premiums. Vice versa, a more significant opening of the labour market implied a growth of the skill premium.

Another explanation can be added to this by looking at the work of Postigliola and Rota (2020). Looking at the distribution of the literacy rate before Italy's unification, they found that there was a concentration in the northern provinces and lower values in the South. Lower literacy values correspond to a deterioration of human capital, which corresponds in general to a decrease in the total number of skilled workers. If the number of skilled workers decreases, the number of unskilled workers increases. Therefore, literacy could matter in terms of increasing the total of unskilled people and the ample supply of unskilled workers lowers their daily wages.

Therefore, explaining the divergent trends of skill-premiums between southern and northern Italy could be a mix of hypotheses. In the South, there may have been an open market of labour and a more significant presence of the second "segment" in the labour market, which, integrated with an implicit increase in the total number of unskilled workers, led to an increase skill-premium level. Because the unskilled workforce was readily employable outside its area, it was able to frequently change its occupation according to the seasonality and profitability of the work involved (Mocarelli, 2019). However, to measure this aspect in more detail, it would be necessary to look at the population and increase the sample of data in terms of occupations, wages and covering other geographical locations and integrate the role of apprenticeship systems throughout the Italian territory.

As regard the second question, also in this case, a mix of hypotheses could help us to find an answer.

In 1830, Ferdinand II of Bourbon became King of the Two Sicilies and remained in power until 1859. His main economic policy was aimed at preserving his idea of collective well-being of the people and reaching and maintaining a balanced public budget. These policies were attainable by keeping low taxation and limiting public investments. The reduction, or rather, the avoidance of public investments has directly

affected the absence of schools which has affected literacy rates, thus linking, as in the explanation of the skill premium, to an increase in the number of people with the possibility of remaining unskilled. This hypothesis linked to the growth in the southern population (Mariella et al 2020) could be seen as a hypothesis that explains the decrease in the wages of unskilled workers.

The King also aimed at protectionist policies and internal liberalist approach. In fact, during Ferdinand II era, the monarchy applied protectionist policies for preventing the entry of foreign products into the domestic market, in order to protect the new enterprises created by the crown (in full Colbert's approach). This provoked a similar and opposite foreign reaction causing an increase in local prices, and reductions in exports. At the same time the King tried to unify the Kingdom of the Two Sicilies by removing internal customs duties. This was combined with a general increase in domestic prices caused by the protectionist policies. The rise in prices and the fall in nominal wages may have led to a collapse in real wages.

IV. Conclusion

With the analysis of the new data presented for southern Italy and the published series for the North, this paper presents several results in two main topics: real wages debate and the Italian Little Divergence.

Since the pioneering works of Phelps Brown and Hopkins (1955, 1956), and the seminal Allen's work (2001), real wages are considered essential for the measurement of the economic performance of a specific area. In literature, real wages have often been used as a proxy of the GDP per capita, but as Broadberry (2021) pointed out, this approach requires care. For example, a disparity between GDP per capita and real wages was found in Italy at the regional level in the post-unification period by Federico et al (2019). Similarly, Angeles (2008) also highlighted real wages growth in Italy being much slower and decreasing much faster than GDP per capita between 1500-1820. If we assume this, then in future we might expect GDP per capita reconstructions before unification to demonstrate that southern Italy decreased more slowly while the North grew faster compared to the series presented in this paper. In the meantime, the first result of this paper is that real wages of the building sector, rather than being considered a proxy of GDP per capita, can be considered a good "apple to apple" comparable index also useful for unveiling the dynamics of Italian divergence.

The paper also clearly demonstrates that real wages are not monotonous and binary skilled/unskilled series, since this division of workers ignores the complexity of the historical labour market. Wages are, or should be, the expression of the "wage spectrum" that encompasses different facets of the historical reality of an economy and the characteristic of the labour market. Here, it has been possible to observe series of *truly unskilled* workers within the unskilled series with the high/low 50 division. The identification of the truly unskilled series is essential for the creation of real wages since different elements may bias the unskilled series and result in a premium. Elements like levels of trust between worker and employer, age, workers' experience and necessity or demand-side "pull" factors for the building jobs are likely to be intrinsic elements in the labour market, and their expression is graphically evident in the "wage spectrum". The need for creating the *truly unskilled* series is because, with the OLS model, we can control only the compositional effect of occupations, sources, year, and season but not for those elements in absence of information.

Turning the attention to the Italian Little Divergence, one of the main findings of this paper is that the "High Wages Hypothesis" approach to the industrialization process is not confirmed in the Italian context. In fact, according to the High Wages Hypothesis, high real wages from unskilled building workers are an essential condition for the industrialization and the economic development of an area. However, as can be observed in this paper, in the case of Italy, this is not verified. In fact, in northern Italy, where we presumed to have higher real wages of unskilled workers, these had lower values than

southern Italy. For instance, in northern Italy, where higher real wages of unskilled workers are presumed, the reality is that these values were lower than in southern Italy. Unskilled workers in the North were not better off than in the rest of Italy in the period before unification. Another interesting point is that the higher wages of the South of Italy, have not translated into more significant economic development and industrialization.

If the question arises here is: are higher real wages in the past synonymous with the contemporary state of industrialization in Italy today? Then, the answer is not. Indeed, it seems to be quite the opposite. Initially, on one side the highest wages were in the south Italy areas where industrialization has not started. In that area, the economic policies implemented by Ferdinand II probably led to a collapse of real wages. On the other side, in 1800 wages in the North were the lowest. Since the Restoration these wages have gradually risen to reach the real wages of southern Italy in 1840, surpassing them and starting to slightly diverge.

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Appendix 1

This appendix presents the archival sources of the data used:

The Archives consulted are:

Archivio di Stato di Napoli (ASN)

Archivio di Stato di Catanzaro (ASC)

Archivio dell'Arcivescovato di Catanzaro (AAC)

(ASN), Archivio del consiglio generale della pubblica educazione n. 662;

(ASN), Archivio delle corporazioni religiose soppresse n. 509, 805, 5026, 5289, 5744, 6232, 6300; ., 6232, 6260, 6300, 6361, 6487; 5837;

(ASN), Archivio del Ministero degli Interni, Inventario-I fascicolo numero: 9, 30, 2028, 2098, Inventario-II fascicolo numero 492; Appendice I, fascicolo numero 9, 30;

(ASN) Archivio Borbonico, Maggiordomia maggiore III inventario, conti e cautele, fascio numero: 1667, 1947; 1495, 1515. 1877; 944, 1535, 1536; 1537, 1539, 1540, 1541, 1542, 1543, 1545, 1548, 1549, 1550, 1553, 1555, 1564, 1566, 1920;

(ASN) Archivio delle arciconfraternite, arciconfraternita di San Mattia Apostolo, fascio 10;

(ASN) Archivi privati: archivio Serra di Gerace: appendice 20, appendice 20bis;

(ASN), Archivi privati, archivio Doria d'Angri, fascicolo numero:735, 756; 580, 777, 788, 792;

(ASN) Archivio privato: archivio Nunziante di San Ferdinando n. II series, B-17;

(ASN), Archivio del Ministero degli Interni, Inventario I, fascicolo numero: 9, 61, 80, 273, 2030, 2029, 2033, 2114, 5913, 2029, 2030, 2033, 2114; Inventario-II fascicolo numero: 131, 504, 3281, 491, 493; Appendice I 9, 273, 80; Appendice II 131;

(ASN) Archivio del Ministero degli Interni, Inventario I, fascio n. 493, 3269; Appendice II fascio n.3, 131

(ASC), consiglio generale degli ospizi e opere pie, conti budget 1, 2, 7

(ASC) amm.ne beni mobili e immobili, Albi I/5,

(ASC) conti morali e materiali Settingiano 19.a,

(ASC) conti morali e materiali Zagarise, 15.3

(ASC) conti; regio liceo, conti morali e materiali, 2

(ASC) amm.ne beni mobili e immobili, Gimigliano 11.8, (ASC) amm.ne beni mobili e immobili Settingiano 19.a;

(AAC), contabilità del monastero santa Maria della stella, amministrazione beni mobili e immobili Pd. 3, 10;

(AAC) mensa vescovile, libri di esito 27, 58,

(AAC) monastero Cropani 7/16, 7/17;

(AAC) mensa vescovile 64;

(AAC) monastero di Santa Caterina amm.ne beni mobili e immobili 2

(AAC) monastero di santa chiara bilancio p27

(AAC) monastero di santa Maria maddalena, bilancio, libro di esito Pd 10.