Urbanisation and counter-urbanisation in Italy, 2001-2022[a]

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1. Introduction

In the year 1981, Italy's population reached almost 57 million inhabitants compared to 47 million after World War II. In the following twenty years, the population basically stagnated, after which it only experienced a new (brief) expansionary phase in the new millennium. Three phases can be identified, based on the rise or decline of the population in the provincial capital cities (from now on also PCCs), relative to the rest of the provincial territories. From 1951 to 1981, an intense process of urbanisation is observed; this declines in the second phase (1981-2001), marked by significant dynamics of de-urbanisation; while in the third phase (2001-2021), significant, albeit limited, signs of re-urbanisation were observed.

Figure 1 shows the time series of Italian population from 1951 to 2021. In year 1 of each decade, the population in the provincial capital city or in the province excluding the capital has been calculated. When the ratio between the two, represented by the piecewise linear curve, increases, the population in the capital rather than in the provincial areas increases.

Figure 1: Total Italian population, divided between provincial capitals (black bar) and remaining municipalities (grey bar), ratio of the two populations (black line).
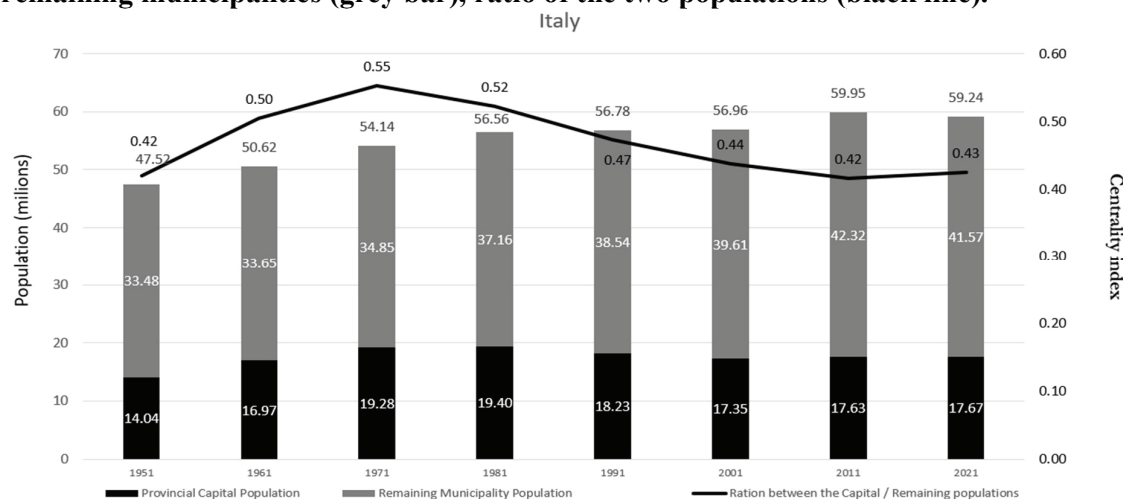
In the period between 1981 and 2001, the population remained substantially stable, but with a shift towards a higher share of inhabitants residing outside the PCCs. At least three dynamics come together in this movement towards the periphery: the coming of age of the baby-boom generation, which moves from the capitals towards the urban belts and into the province, attracted by better housing conditions; the demand for industrial labour, which makes it convenient to build new low-cost factories in the industrial areas built in rural municipalities; the growth of public and private services (schools, clinics, supermarkets, etc.) also in the peripheral areas. The population of the PCCs contracted from 19,400,000 in 1981 to 17,300,000

in 2001, against the background of a very slight growth in the total population. The period coincides with the phase of so-called post-Fordist economic development that began in the second half of the 1970s (Feltrin, Pero 2021; Rullani 2021). In the first phase, population growth mainly concerned the capital cities: in 1971, in fact, the census recorded the highest concentration in the PCCs, with a resident population equal to 36% of the total,[b] which remained roughly similar in 1981 (Figure 1).

In the first decade of the 2000s, a new phase of overall population growth was recorded, mainly fuelled by immigration from abroad, resulting in population growth both in the PCCs and in the rest of the provinces. A first trend reversal is thus observed, i.e. a positive balance in the PCCs' resident population, something that had not been recorded since the 1970s. In the second decade of the 21st century, the change of phase is confirmed, with an increase in the relative weight of the provincial PCCs regarding the resident population. What has been observed at the national level results from the combination of phenomena of the same type, albeit with different intensities, in the macro-areas of the country. Moreover, there are numerous phenomena that have occurred over time that can be analysed in correlation with the urbanisation, de-urbanisation and new urbanisation phases. In addition to the already mentioned periodisation of the economic cycle (Rullani, 2023), other significant factors can be found in lower birth rates, immigration and the combination of both with the transformation of labour demand.

Only some of these elements are developed in this paper. Specifically, we will evaluate the weight of the following socio-demographic components: social burden, labour market attractiveness, renewal rate. Have the cities that had an older population between the late 1990s and the beginning of the new millennium seen their age composition remain unchanged, or is the resurgence of centrality accompanied by a relative slowdown in the ageing process? Is the PCCs attractiveness for the workforce also increasing over time? Furthermore, an attempt will be made to understand the relationship with the overall growth processes of the territory: is there a relationship, and if so of what type, between variation in the provincial population and the weight of the provincial capital city? Finally, the existence of an ecological correlation between the variation in the degree of relative specialisation in the main economic macro-sectors and the variation in the centrality index of the PCCs will be investigated.

The rest of this paper is organised as follows. Section 2 introduces the data and the model used for data analysis. Section 3 presents the main results of the statistical analysis. Section 4 discusses the results with reference to the mainstream literature on urbanisation.

2. Data and analytical model

Given:
P, a population (the number of people living in a certain province capital or remaining region);
W, a workforce (the number of people working in a certain region and / or economic sector)
$c = 1, \ldots, 107$ a PCC;
$r = 1, \ldots, 107$ a remaining area (province without the PCC);
p-q = a range of ages (e.g., 0-18 means between 0 and 18; 65+ means 65 or greater);
$s = \{Warehousing, Manufacture, Land\ services, Expansion\ support\ services, Tourism, Construction, Personal\ services, On\text{-}demand\ business\ services\}$ is an economic sector.

Note that *c* and *r* in the same formula refer to the same province. The capitals have been reclassified into three size classes and are distributed in the macro-areas, as established by the Italian National Institute of Statistics (ISTAT).

The following indicators were analysed:

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[b] The 1971 peak is also recorded when considering the median of the index value, although obviously lower than the index referring to the cumulative data (0.338 vs. 0.553).

Centrality index :
$$I1 = \frac{P_c}{P_r} \; ; (1)$$

Δ Productive attractiveness :
$$\Delta I3 = I3_c - I3_r \; ; (2) \quad \text{where } I3_c = \frac{W_c}{P_{c35-64}} \text{ and } I3_r = \frac{W_r}{P_{r35-64}} \; ;$$

Δ Social load :
$$\Delta I4 = I4_c - I4_r \; ; (3) \quad \text{where } I4_c = \frac{P_{c0-18} + P_{c64+}}{P_{c19-64}} \text{ and } I4_r = \frac{P_{r0-18} + P_{r64+}}{P_{r19-64}} \; ;$$

Δ Demographic renewal :
$$\Delta I5 = I5_c - I5_r \; ; (4) \quad \text{where } I5_c = \frac{P_{c0-18}}{P_{c65+}} \text{ and } I5_r = \frac{P_{r0-18}}{P_{r65+}} \; ;$$

Relative population change between 2019 and 2012:
$$\Delta P_{c2019-2012} = \frac{P_{c2019} - P_{c2012}}{P_{c2012}} * 100 \; ; (5)$$

Relative Specialisation Index 2019:
$$SRI_{cs} = \frac{\frac{W_{cs}}{W_c}}{\frac{W_s}{W_{area}}} \; ; (6)$$

3. Results

Table 1 shows the statistical population frequencies of PCCs grouped by geographic area. Considering the demographic size, it can be observed that the dynamics of growth in the concentration index tend to characterise the larger municipalities and, to a lesser extent, those of medium size, while the smaller PCCs are affected by relative weight stability. If we cross-reference size and area, the groups of statistical units are too small to provide reliable statistics, so, for further analyses, we group them into two macro-areas (North+centre, South+islands).

Table 1: Number of Italian provincial capital cities in 2023 by demographic size and geographical macro-area.

Inhabitants	Geographical area					
	Nord west	North east	Centre	Islands	South	Italy
Less than 50,000	9	3	5	4	4	25
50,000 - 150,000	12	10	12	7	15	56
More than 150,000	4	9	5	3	5	26
Total	25	22	22	14	24	107

In the north-west of Italy, the maximum level of the centrality index of the largest PCCs was reached in 1961 and a steady decline was recorded until 2010, when a shift took place. The numerous small PCCs showed no appreciable change. In the North-east, the maximum centrality in the largest municipalities was reached in 1981 and here too there was a steady decline until 2010, the year after which an even more noticeable change of phase can be noted. The medium-sized PCCs show a similar trend to the larger ones, with the peak in 1971 and a stabilisation since 2000. In the larger PCCs of the Centre, the maximum weight is recorded in 1971, and here too the rebound occurs around 2010. The medium-sized municipalities show a similar trend, while the variation in smaller municipalities is not significant. Similar trends are also recorded in the larger southern cities, with the index stabilising from the beginning of the new millennium and, unlike elsewhere, the weight of the PCC in the smaller towns tends to increase steadily. However, this increase of centrality is shown in a context of demographic decline.

The correlation coefficients between the change in population and the change in the centrality index of the PCCs were also analysed (Table 2). Where a statistically significant relationship emerges, the sign is always negative, a fact that depends on two different situations: at times when the provincial population increases, the provincial capital loses relative importance; when the population decreases, the capital increases in importance or experiences a smaller decline in population than the rest of the province. The periods in which the relationship is significant correspond to the phase of first urbanisation and then, in the first decade of the 2000s, to the re-urbanisation phase. Looking at the data by individual macro-areas, it can be observed that the dynamic is driven by the North-west.

Table 2: Correlation coefficients between change in the relative population and change in the centrality index, Italy.

Years	Correlation coefficient	p-value	
51-61	-0.389	<.001	***
61-71	-0.489	<.001	***
71-81	-0.188	0.053	
81-91	0.012	0.904	
91-01	-0.216	0.025	*
01-11	-0.404	<.001	***
11-21	-0.152	0.117	

Secondly, it should be noted that over the last twenty years the PCCs have increased their *productive attractiveness*, measured by the ratio of those employed in the capital city to the population aged 35 to 64 in the province. The same index was calculated for the rest of the province and the difference (Δ) was calculated. The medium-sized and large capitals of the northern and central regions significantly increased their attractiveness over the past two decades. Although with some variations depending on the size class, the productive attractiveness of the capital cities also tends to increase in the South and the Islands. The difference (Δ) of the *social load index* has been decreasing over the last decade in the central and northern provinces and increasing in the southern ones. Finally, the difference (Δ) of the *demographic renewal index* has been increasing in the PCCs of the northern and central regions over the last twenty years, while in the southern ones it increased only in the larger cities and decreased in the Islands.

Analysing the two components of the Δ separately, we find that the renewal index is decreasing both in the PCCs and in the rest of the province with, however, a relatively more favourable ratio in the capitals. Thus, a certain similarity emerges between the macro regions of the Centre and the North with respect to the South and the Islands.

Also, we analysed the relationship between the 2012-2019 change in the capital centrality index and the change over the same period in the relative specialisation index in the various sectors (Table 3), separately for the north and centre, on the one hand, and the south and the main islands of Italy, on the other.[c] Regarding the North+centre area, the multivariate analysis showed a significant positive relationship with an increasing variation in the relative specialisation index in the sectors of construction, advanced services and tourism. However, a negative relationship emerges with an increase in the relative specialisation index in personal services and business services. So, the hypothesis that cities where the concentration index increases showed a relative specialisation in advanced services increase, while their relative specialisation in conventional services decreased, appears to be confirmed. Regarding the other southern regions, the PCCs that recorded an increase in relative specialisation in the hotel and restaurant sector in the 2012-2019 period also see their concentration index increase.

Finally, using the relative change of the population (Δ $P_{c2019-2012}$) as a dependent variable, 16 regression analyses were carried out, one for each of the specialisation indices for year 2019 (separately for two groups, below and above the median of the indices) crossed with the two Italian partitions. A significant relationship emerged with the relative specialisation index in

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[c] Sectors are identified by the Ateco code (https://www.istat.it/it/archivio/17888): Land services: 35-39; Expansion support services: 62, 70, 72, 73; Tourism: 55, 56; Construction: 41-43; Personal services: 45, 47, 75, 85-88, 90-93, 95, 96; On-demand business services: 46, 49-51, 53, 58-61, 63-66, 68,69,71, 74, 77, 79-82; warehousing: 52; Manufacture: 10-33.

advanced services (Expansion support services) only for the North+centre PCCs in the "below the median" group. No significant relation was instead observed in the southern regions.

Table 3: Estimates and significance of beta regression coefficients of the relative change in the concentration index, by Italian region

Predictors	North+centre			South and islands		
	b	Se	T	b	Se	T
Construction	0.303	0.124	2.449*	-0.319	0.181	0.089
Warehousing	0.164	0.119	1.372	-0.236	0.186	0.217
Manufacture	-0.153	0.110	-1.383	-0.227	0.164	0.177
Expansion support services	0.411	0.117	3.509***	0.248	0.168	0.153
Personal services	-0.206	0.110	-1.866	0.027	0.208	0.896
Land services	0.118	0.114	1.040	0.199	0.166	0.242
On-demand business services	-0.391	0.128	-3.058**	0.061	0.209	0.771
Tourism	0.211	0.113	1.867	0.427	0.193	0.037*
Overall provincial population	-0.038	0.127	-0.300	-0.039	0.172	0.823

Table 4: Regression coefficients for the two groups in the northern+central regions, above and below the median (39.05) of the specialisation index for advanced tertiary services.

	b	se	T	p-value	
Below median provinces	0.161	0.062	2.607	0.012	*
Above median provinces	0.015	0.013	1.242	0.219	
Contrast	0.145	0.063	2.319	0.024	*

An analysis of the 2019-21 pandemic period, shows no difference for all indices with respect to the previous years. The municipalities with a larger specialization index are in almost all cases recognisable as university poles. The only exceptions are the cities of Turin and Vicenza, which, despite a high level of the index, recorded a decrease in population.

4. Discussion and conclusion

Compared to the United States, England, and France (Marksuen, Schrock, 2006; Power et al., 2010; Moretti 2012; Dijkstraet al., 2013; Martin et al., 2016; Piketty, 2023), in Italy the phenomenon of re-urbanisation was delayed - undeniable only after 2010 – and less evident (namely, the demographic decline in the PCCs is slower than in the rest of the province). Especially in the northern and central regions, there are cities that perform well in advanced services and see their weight grow more. In the southern regions and the main islands, a positive relationship emerges only with tourism. As has been observed in the literature (Moretti, 2012; Lamorgese, Petrella, 2018; Accetturo et al., 2019; Istat, 2023), tertiarisation has been the engine of economic growth over the last thirty years in many developed countries and this was responsible for the new leadership role assumed by large cities.

In Italy, at certain moments in its economic history, backwardness was turned into a competitive advantage. One might then ask whether we are really in the midst of a new phase (tertiarisation plus re-urbanisation) or we are observing the tail end of a process of establishing the network economy. In the first case, our country's backwardness should be quickly bridged with policies similar to those adopted in other countries to trigger processes of metropolitan tertiarisation (Martin et al., 2014). If, on the other hand, we are at the end of a path and are witnessing a progressive reduction in the relevance of the (metropolitan) factor of scale, also as a consequence of the post-covid readjustment, then a new window of opportunity would open

up – especially for latecomers like Italy – as a consequence of the diffusion of remote working and flexible work organisation.

On the other hand, Koolhaas (2020) assumes that urban life necessitates a return to the countryside, in which a new organisation and automation is on the way. China is working to connect the countryside to 4g and China's rural areas are now more connected than American ones (Aresu, 2022). The question of which is the real driver of contemporary development – advanced services or the network economy – and what are its medium-term effects remains open, inevitably destined, as Kleinknecht (2020) suggests, to be the subject of further investigation.

Hence, these analyses should be further articulated considering the development not only of the provincial capital city but also of the metropolitan cities or of the urban system identified by the capital and its belt, in order to verify whether a lack of growth in the PCC was passed on to its urban belt or to a larger set of municipalities. The relationship with value-added indicators is also to be verified.

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