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ARE MEDIUM-SIZED CITIES STRONG NODES IN THE SETTLEMENT SYSTEM? DEMOGRAPHIC TRENDS OF ITALIAN PROVINCIAL CAPITALS FROM 2000 TO THE COVID-19 PANDEMIC

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Abstract

Medium-sized cities are an important component of the settlement system and are often described as a joining link between urban and rural areas. However, in recent decades they have been impacted by growing competition from large cities which have tremendous appeal for the post-Fordist economy and for various segments of the population. This paper analyses the demographic trajectories of 99 medium-sized cities in Italy with provincial capital status, from the beginning of the twenty-first century to the outbreak of the COVID-19 pandemic. Over a twenty-year period marked by many difficulties for the Italian economy in an international context, what has the demographic performance of these cities been? The research addresses two areas. On the one hand, it analyses the demographic vitality of the provincial capitals compared to the metropolitan centres; on the other, it follows the redistribution of populations in the provincial capitals' urban areas, which coincide with the employment areas (*Sistemi locali del lavoro*). Significant behavioural discontinuities emerge between the decade of 2000-2010 and the following decade, which was characterised by a gradual recovery after the shock of the Great Recession. The picture was changed further by the COVID-19 pandemic. Furthermore, persistent differences between the medium-sized cities of Northern and Southern Italy stand out, but so do new internal divisions within the country, reframing this historical dualism.

Key words

medium-sized cities • provincial capitals • demographic dynamics • employment areas • Great Recession • COVID-19 • Italy

Introduction

In the current age of planetary urbanisation (Brenner & Schmid, 2014), not everything revolves around the large metropolitan

agglomerations, as much as these are key meeting points in a hyper-connected world. A large proportion of the population, particularly in Europe, resides in small and medium-sized cities, which often form very dense

networks (ESPON, 2014). Italy is a case in point: in 2020, municipalities outside of the bounds of the 14 *Città metropolitane* established by Law No. 56/2014¹ were home to 63% of the population and generated 59% of GDP (ISTAT statistics). As Iommi (2016) mentions, the predominance of hilly and mountainous areas has limited the processes of settlement concentration. The country's history should also be taken into consideration, having been established in 1861 by the unification of independent states, each of which had its own 'little' capital. Lastly, it has a model of economic development that is based on small enterprises gathered in industrial districts, which have exploited the material and immaterial resources rooted in the peripheral areas (this is extremely evident in Northeast and Central Italy).

This study focuses on medium-sized cities (MSCs) which are difficult to identify in the urban continuum but are nevertheless important for the balanced (polycentric) structure of regional areas (UN-Habitat, 2015). Being medium-sized leads to a peculiar condition in terms of the functions carried out, of the 'community capital' available for processes of development and the physical features of the areas: the settlement density is not high when compared to the metropolises; often the boundary between the city and the countryside is still visible and there is a significant presence of cultural assets, a legacy of the historical importance assumed by these cities as administrative or religious hubs or as junctions for commercial traffic (Dicecca, 2019).

The future of medium-sized cities is uncertain. The 'bigger is better' narrative of New Economic Geography (Fujita et al., 1999) leads one to think that these cities may lose out from globalisation. They should be condemned to live in the shadow of the larger cities, which have greater economies of urbanisation and key assets for innovation and competition. However, this is not always

the case in practice. Many MSCs – especially if aggregated into polycentric networks – have displayed good economic performance, including during the Great Recession. Furthermore, MSCs often beat larger cities on environmental quality and social cohesion (Dijkstra et al., 2013; Camagni et al., 2015; Parkinson et al., 2015; Kresl & Ietri, 2016; Rodríguez-Pose & Griffiths, 2021).

This study investigates the demographic trajectories of 99 Italian MSCs from the beginning of the twenty-first century to the outbreak of the COVID-19 pandemic. These cities have not been identified on the basis of predetermined population sizes, but rather by their administrative roles: we have considered 99 provincial capitals which represent the second level of the administrative framework after the 14 metropolitan hubs recognised by Law No. 56/2014 (the justification for this choice has been clarified in section 2).

Population is a key indicator of the vitality of the cities. As Turok and Mykhnenko (2007) mention, population and economy are closely linked: the demographic trajectories reflect the urban conditions, in particular local economic opportunities, while also influencing them at the same time.

Many authors highlight how, in recent decades, urban studies and public debate have been influenced by a metrocentric approach (Bell & Jayne, 2009; Demazière, 2017; Wagner & Grove, 2021). Effectively, large cities also take centre stage for demographic issues. In particular, great attention was paid to their recent population growth, which was linked to economic restructuring (Carter, 2016), a process that is also evident in Italy (Buzar et al., 2007a; Cirilli, 2010; Salvati & Carlucci, 2016; Carlucci et al., 2018). However, the evolutionary trajectories of MSCs are less clear. They do not all succeed in 'keeping pace' with the large cities, which are more internationalised and more attractive for highly innovative and knowledge-based enterprises. This demanding pursuit, which can also be seen in demographic terms, is the basis for an increase in disparities between communities in many European countries: a trend that

¹ In descending order of population: Rome, Milan, Naples, Turin, Bari, Palermo, Catania, Bologna, Florence, Venice, Genoa, Messina, Reggio Calabria and Cagliari.

has been reinforced with the Great Recession and which risks being further exacerbated by the COVID-19 pandemic (Viesti, 2021). This jeopardises cohesion and the possibility for sustainable development in all places; key themes on the European agenda (Vandecasteele et al., 2019).

Beginning with these observations, this paper analyses the demographic trajectories of the 99 MSCs selected (provincial capitals) over the period 2000-2020 and outlines the behavioural discontinuities that manifested in the 18 months following the outbreak of the COVID-19 pandemic. The MSCs' ability to be strong nodes in the settlement network from a demographic point of view will be investigated, with three intertwining lines of inquiry relating to different scales of analysis. First of all, by identifying the cities as purely administrative entities (urban localities: Rozenblat, 2020), the demographic trajectories of the provincial capitals and the metropolitan hubs will be compared in order to assess their level of vitality, but also the different combinations of natural and migratory dynamics. The second line of inquiry relates to the demographic performance of the provincial capitals in relation to the urban areas in questions, which coincide with the employment areas (*Sistemi locali del lavoro*). We therefore consider the 'real' cities as determined by the network of commuter movements between home and work (Calafati, 2009; ISTAT, 2017). In doing so, we focus on the functional links, with a different approach to other studies that set the perimeter of the urban areas by adopting morphological criteria (Bretagnolle et al., 2019; Guérois et al., 2019). Lastly, the third line of inquiry relates to the impact of the COVID-19 pandemic on the demographic situation of the cities in question: we will assess the behavioural discontinuities compared to the past, which could be a new phase in relationships between cities of different sizes.

The paper is divided into six sections. In the first we will reflect on the conflicting evolutionary dynamics of MSCs which are influenced by their different place in the settlement network, while in the second we will

address the problem of their identification. The following sections (3-6) are reserved for the three lines of inquiry described above.

MSCs moving along various trajectories

When discussing balanced and sustainable regional development – one of the main objectives of territorial policies in many countries – the importance of MSCs and second-tier cities is often mentioned (Roberts, 2014). The theme is prominent in the EU, where attention to these cities (and to small cities) has grown to the point of justifying extensive research to understand their characteristics and evolutionary pathways (ESPON, 2014). In *Cities of tomorrow* (EC, 2011: VII) – one of the most influential documents in European urban policies of the last decade – it is pointed out how MSCs “can play an important role in the well-being not only of their own inhabitants but also of the surrounding rural populations. They are essential for avoiding rural depopulation and urban drift and for promoting balanced territorial development”. The *Territorial Agenda 2030* (EC, 2020) has given new momentum to polycentricity as an optimal strategy to foster competitiveness and cohesion in the Union, both of which were put under strain by the Great Recession. Against this backdrop, MSCs are called on to play a key role in 'green and just' growth in the expansive territories beyond the metropolitan agglomerations.

Many studies focus on the variety of socio-economic profiles of MSCs. If we look at the extremes, some cities have a solid service economy and actively compete with metropolitan centres (even when it comes to cultural and creative activities); others revolve around the manufacturing industry and often undergo a difficult transition, especially in the presence of sectors of low to medium technological intensity, which are more exposed to international competition (Henderson, 1997; Oberti, 1997; Puissant & Lacour, 2011; Hamdouch et al., 2017; Meili & Mayer, 2017). The picture is just as variegated

if we consider the position of MSCs in the settlement network: some cities are located close to a metropolis, some are isolated in the heart of rural regions, some are clustered in polycentric networks, and some are located along cross-border corridors (Kunzmann, 2010; Sýkora & Mulíček, 2017; UCLG, 2017). Various associations promote the interests of MSCs both nationally and internationally. This gives visibility to a group of cities that are often neglected in public debate, enabling the exchange of experiences. However, this runs the risk of emphasising the strengths (or weaknesses) of MSCs as a whole, while overlooking individual situations. Still, the above factors push MSCs down different pathways and fuel different responses to economic shocks (Kunzmann, 2010; Taulelle, 2010; Servillo et al., 2017; Zwick et al., 2018).

With regard to specific population trends, the research on individual countries returns, inevitably, varying pictures, with MSCs that are thriving (for example in Spain: Cebrián Abellán et al., 2021), have fallen into spiralling decline (for example in France: Chou-raqui, 2020), or have pronounced pushback in the social and economic performances (for example in Italy: Mecenate 90, 2020). A conflicting map emerges from studies on a European scale that have investigated the demographic dynamics of the lower levels of urban structures, going beyond the established benchmark of large cities (ESPON, 2014; Bretagnolle et al., 2019; Guérois et al., 2019; Zdanowska, 2020). Generally, these studies consider urban agglomerations that are defined with morphological criteria (continuity of the built environment).

Population dynamics are often investigated using the 'city life cycle' model developed by Van den Berg et al. (1982). However, the studies mainly concern the big urban systems. Their entry into the reurbanisation phase has been studied (purely hypothetical phase in the original model) and different behaviours have been observed, especially between Western and Eastern Europe (Champion, 2001; Kabisch & Haase 2011; Haase et al., 2017; Wolff, 2018; Dembski et al., 2021).

There have been criticisms of this model in three crucial areas: (1) non-uniform criteria for the identification of urban systems, producing conflicting results; (2) the view of urban systems as closed spaces, with strict boundaries and a monocentric approach; (3) the lack of consideration for the behaviours of different groups within the population (Nyström 1992; Buzar et al. 2007; Kurek, Wójtowicz 2018; Humer et al. 2021).

MSCs are more people-friendly than big cities, offering a better quality of life and lower property values. These factors make them very attractive to people deciding to leave the big cities behind them (Champion, 1998; Bonifazi & Heins, 2003; Adam, 2006; Runge, 2016). The *Cuenca Declaration* (UN-Habitat, 2015) also highlights MSCs as centres that 'remove the pressure' from highly urbanised areas. In turn, MSCs are the epicentre of micro-regions where suburbanisation processes often occur, which result in high land take and a flattening of hierarchies, both of which are very evident in Italy and Spain (Indovina, 2009; Cebrián Abellán & Sánchez Ondoño, 2019). However, this is only a part of what is actually happening. Many MSCs located in rural and older industrial areas or far from major infrastructural corridors are affected by urban shrinkage phenomena. This poses huge dilemmas for policymakers on how to inject new vitality into the transition to a green and digital economy (Oswalt, 2005; Mykhnenko & Turok, 2008; Martinez-Fernandez et al., 2016; Salone & Besana, 2016; Wolff & Wiechmann, 2018; Caselli et al., 2020; Schlappa & Nishino, 2021).

The pandemic caused by the SARS-CoV-2 coronavirus, which broke out in the early months of 2020, marked the start of a new phase. The evolution of the population patterns is concerning. The pandemic has severely impacted natural population dynamics and is altering both the flow of deaths (rising) and births (falling) (Chamie, 2021; Egidi & Manfredi, 2021; Friedman & Parker, 2021; Harper, 2021). Moreover, a 'mobility crisis' has been sparked off, which has reduced international and domestic migration (CSIS, 2021). Reverse

migration phenomena have also been recorded in a number of cases, which take precious labour away from developed countries and exacerbates the problems in low-income countries (Singh et al., 2020; FAO, 2021).

There is growing interest in the spatial implications of the pandemic (Mouratidis, 2021). The link between settlement density and the spread of infection is not always confirmed, as shown by the excellent review carried out by Teller (2021). In addition to density, many other factors are considered, including places connectivity, form of settlements, pollution levels and the measures introduced by governments to curb the virus circulation (Murgante et al., 2020; Barak et al., 2021). However, some countries have experienced a drift from big cities to less densely populated areas due to the COVID-19 pandemic (Fielding & Ishikawa, 2021; Ramani & Bloom, 2021; Whitaker, 2021). MSCs could benefit from this movement (Song et al., 2020; van der Merwe & Doucet, 2021), thanks to a density that is not too high and a size that ensures fast access to all essential services (MSCs resemble the '15-minute city', a model that is attracting great interest). However, MSCs might also lose inhabitants in the future: they are still 'big' and densely populated compared to small surrounding municipalities or remote areas. The intertwining of pandemics and climate change could limit the importance of agglomeration economies and could push many people towards decentralised places, in search of more sustainable living patterns.

Identification of the MSCs

Researchers and policymakers agree on the importance of MSCs for the balanced structure of regional spaces. Their opinions differ, however, when it comes to marking the boundaries between these cities and those of other sizes: different definitions are frequently found even when looking at the same areas. For that matter, as recalled by Brunet (1997), MSCs are unidentified real objects, while for Michel (1977) they are a statistical

illusion in the urban continuum. To distinguish MSCs from other cities, demographic and/or functional criteria can be used and then applied to individual municipalities or urban systems (ESPON, 2006). This inevitably produces diversified maps that prompt different interpretations of the problems and evolutionary dynamics of these cities. Population criteria are widely used, even by European institutions, which generally include cities of between 50,000 and 250,000 inhabitants in the MSC group. These are the same values adopted by Eurotowns, a network created in 1991 to promote the interests of European MSCs. Kunzmann (2010) criticises this choice and prefers to consider cities with a population of 20,000 to 200,000 inhabitants. Departing from the usual approaches, the TOWN study (ESPON, 2014) was based on the unified classification of degrees of urbanisation in the EU, which evaluates the population and population density in a grid of 1 square kilometre cells irrespective of administrative boundaries. A definition of small and medium-sized towns is thus proposed based on a morphological criterion.²

The MSCs in this study

In Italy there is no single or official definition of MSC. Many authors use population sizes, but with somewhat different figures; for example, Dicecca (2019) considers municipalities with between 50,000 and 250,000 inhabitants; Garavaglia (2017) those with between 10,000 and 250,000 inhabitants; while Galeone (2009) those with between 200,000 and 1,000,000 inhabitants. Cori (1986) and Lemmi (2012), in order to distinguish MSCs from the others, take into account the resources of five types of urban functions (commercial, banking, administrative, education

² Polygons with at least 300 inhabitants/Km² and 5,000-50,000 inhabitants and polygons with 300-1,500 inhabitants/Km² and more than 50,000 inhabitants. Small and medium-sized towns are broken down further according to the population (small, medium, large) and population density (low, medium, high).

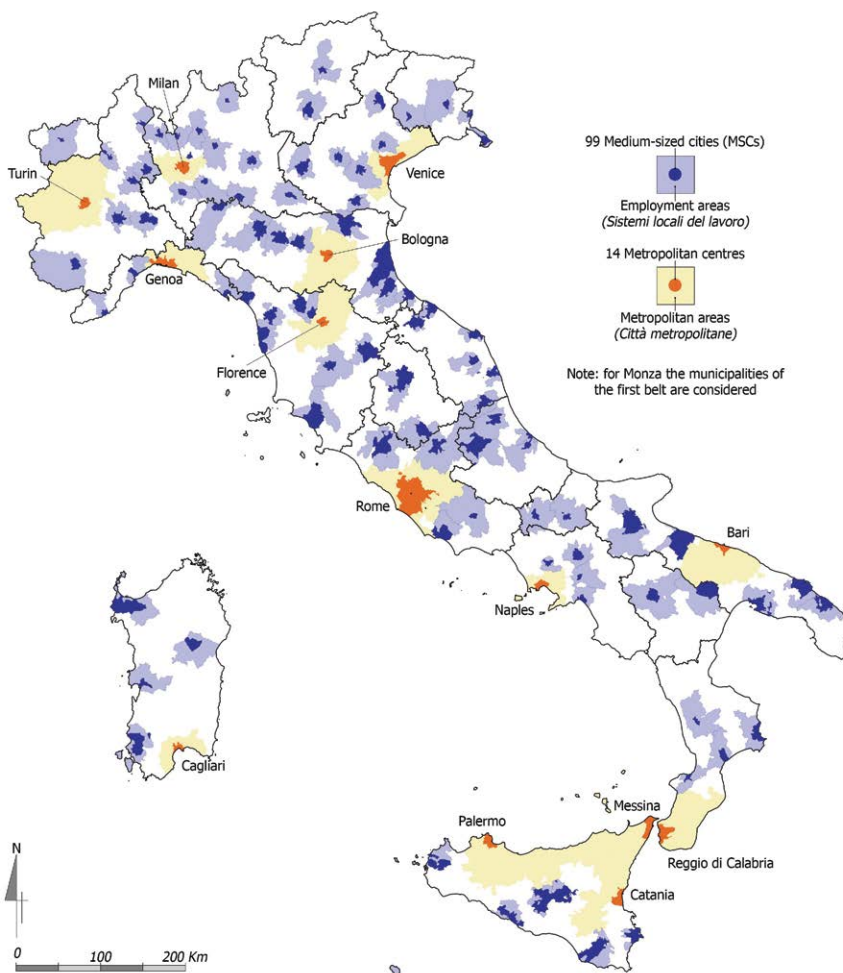


Figure 1. The 99 MSCs under study and their employment areas (2011 boundaries)

Source: own elaborations on Istat data.

and healthcare)³, while other authors employ a mixture of demographic and functional parameters (Mecenate 90, 2020)⁴.

We take into account the 99 provincial capitals that do not fall under the hubs of the 14 *Città metropolitane* established by Law No. 56/2014, as does the Council 'Medium-sized

³ Lemmi (2012) identifies 129 MSCs, while there are 16 and 222 large and small cities respectively.

⁴ This study identifies 161 MSCs.

cities and strategic planning' created in 2016 by ANCI (the National Association of Italian Municipalities). The Council is a respected representative of the interests of these cities – which are described as small, regional metropolises – which, despite playing an important role in the economic development of the country, were penalised by the administrative reform of 2014 and by the attempts to suppress the provinces. Among the many initiatives set up by the consultations, there

is also a project (2021) for supporting the provincial capitals in determining urban policies that are consistent with the objectives of the *Green Deal* and the *Next Generation EU* programme.

Even the *White paper on the government of Italian cities* (Dematteis, 2012: 22) focuses on the provincial capitals when outlining the importance of MSCs: “a characteristic aspect of the [Italian] urban system is the fact that the best and also most stable urban qualities generating wellbeing (therefore also in terms of shared assets, provision of public assets, of public-private cooperation) are found in medium-sized cities. These are provincial capitals or even ‘minor’ urban centres, that is in the order of tens of thousands of inhabitants”.

As of 1 January 2020, the 99 cities in question represent 14.5% of the national population (8.7 million inhabitants). The weighting is significant in Northeast (25.3%) and in Central Italy (15.9%), where there is a close union between these cities and the industrial districts, which are based on the agglomeration of small and medium-sized enterprises specialising in traditional industries. In terms of population, Urbino (14,000 inhabitants) is much smaller than Verona (259,000 inhabitants): there is a wide range of values, but this is due to the variety of the Italian settlement system, with provincial capitals located in lowlands, along the coast and in hilly and mountainous areas.

In the next paragraphs, we will investigate the demographic dynamics of these cities, both as administrative bodies and as the hearts of urban areas, the boundaries of which correspond to those of the employment areas (*Sistemi locali del lavoro*) linked to the capital MSCs (Fig. 1). The geography of the employment areas, which is produced by the network of commuter movements between home and work, illustrates, to a good degree of approximation, the “daily urban systems, places in which the majority of the everyday movements and activities of people and economic parties are found” (ISTAT, 2015: 43). In other words, the employment areas delineate the ‘real’ cities – which

extend far beyond the administrative boundaries of the municipality – and “better approximate the perimeters of the relationships, networks, exchanges and flows that characterise the areas” (*ibid*).

Population patterns on a municipal scale

In Italy, the population of 99 MSCs considered rose significantly between 2000 and 2010 (Tab. 1). While their vibrancy was not comparable to that of smaller cities (+3.0% compared to +6.6%), the situation was in any case better than in the metropolitan centres, which were still declining, with the exception of Rome. The focal point of population growth shifted to Central-Northern Italy and in particular to the regions in the North-East, which stood out for their vibrant economy. In the South – an expansive area of delayed development – there was limited population growth, and three regions (Basilicata, Molise and Calabria) entered a downward trajectory.

The pattern changed in the following decade. The difficult recovery from the ‘long crisis’ – related to subprime mortgage bubbles (2008-2009) and sovereign debt (2011-2012) – slowed down migratory flows from abroad, which were no longer able to offset the natural balance (a population loss, gradually deteriorating). Italy therefore suffered a population loss starting in 2015. The trend involved the entire South (–599,347 inhabitants between 2010 and 2020), but was not limited to this part of the country. In fact, the population continued to grow only in 5 of the 20 regions (Lombardy, Trentino-Alto Adige, Veneto, Emilia-Romagna and Lazio). There was a radical reshuffling in the performance of the various types of city: after 2010, metropolitan centres were the driving force, and this could also be seen in the South, where they experienced lower population loss than other municipalities. The unique situation of the North-East stood out against the general backdrop: only there did MSCs continue to outperform metropolitan centres, albeit by a narrow margin in the most recent phase.

Table 1. MSCs, metropolitan centres and other municipalities: resident population, 2000-2020

Cities	Resident population ¹		Balance 2000-2010	Balance 2010-2020	% Change 2000-2010	% Change 2010-2020	% Pop. on total area
	2000	2020					
North-West							
MSCs	1,537,193	1,592,071	26,360	28,518	1.7	1.8	10.0
Metropolitan centres	2,768,267	2,829,904	-34,323	95,960	-1.2	3.5	17.7
Other municipalities	10,597,318	11,566,704	895,865	73,521	8.5	0.6	72.3
Total	14,902,778	15,988,679	887,902	197,999	6.0	1.3	100.0
North-East							
MSCs	2,486,662	2,686,754	123,515	76,577	5.0	2.9	23.1
Metropolitan centres	646,632	654,101	-10,370	17,839	-1.6	2.8	5.6
Other municipalities	7,404,496	8,286,682	800,819	81,367	10.8	1.0	71.3
Total	10,537,790	11,627,537	913,964	175,783	8.7	1.5	100.0
Centre							
MSCs	1,777,749	1,876,977	87,225	12,003	4.9	0.6	15.9
Metropolitan centres	2,933,317	3,175,220	65,550	176,353	2.2	5.9	26.8
Other municipalities	6,175,668	6,778,895	614,846	-11,619	10.0	-0.2	57.3
Total	10,886,734	11,831,092	767,621	176,737	7.1	1.5	100.0
South							
MSCs	2,517,748	2,463,860	13,060	-66,948	0.5	-2.6	12.2
Metropolitan centres	2,937,455	2,761,136	-117,216	-59,103	-4.0	-2.1	13.7
Other municipalities	15,141,019	14,969,184	301,461	-473,296	2.0	-3.1	74.1
Total	20,596,222	20,194,180	197,305	-599,347	1.0	-2.9	100.0
Italy							
MSCs	8,319,352	8,619,662	250,160	50,150	3.0	0.6	14.4
Metropolitan centres	9,285,671	9,420,361	-96,359	231,049	-1.0	2.5	15.8
Other municipalities	39,318,501	41,601,465	2,612,991	-330,027	6.6	-0.8	69.8
Total	56,923,524	59,641,488	2,766,792	-48,828	4.9	-0.1	100.0

¹ Data as of 1 January.

Source: own elaboration on Istat data.

In the 2000-2010 period, MSCs even experienced high growth rates in Central Italy, but this was followed by a slowdown associated with natural disasters (earthquakes in 2016 and 2017 in the Marche, Umbria and Lazio)⁵ and the difficult transition of certain areas with an uncompetitive manufacturing system. Lastly, it should be pointed out that

⁵ After the earthquake that destroyed L'Aquila (Abruzzo) on 6 April 2009.

MSCs enjoyed steady growth over time in the North-West, something not seen elsewhere.

The evolutionary trajectories of individual MSCs are conflicting (Fig. 2). Cases of growth halved over time, with as many as 54 MSCs out of the 99 losing inhabitants in the last decade. There is a clear divide between North and South, reflecting different economic development dynamics. Between 2000 and 2010, many MSCs in the South lost inhabitants, but there was still vitality in several cases (16 out of 34). In the rest of Italy, on the

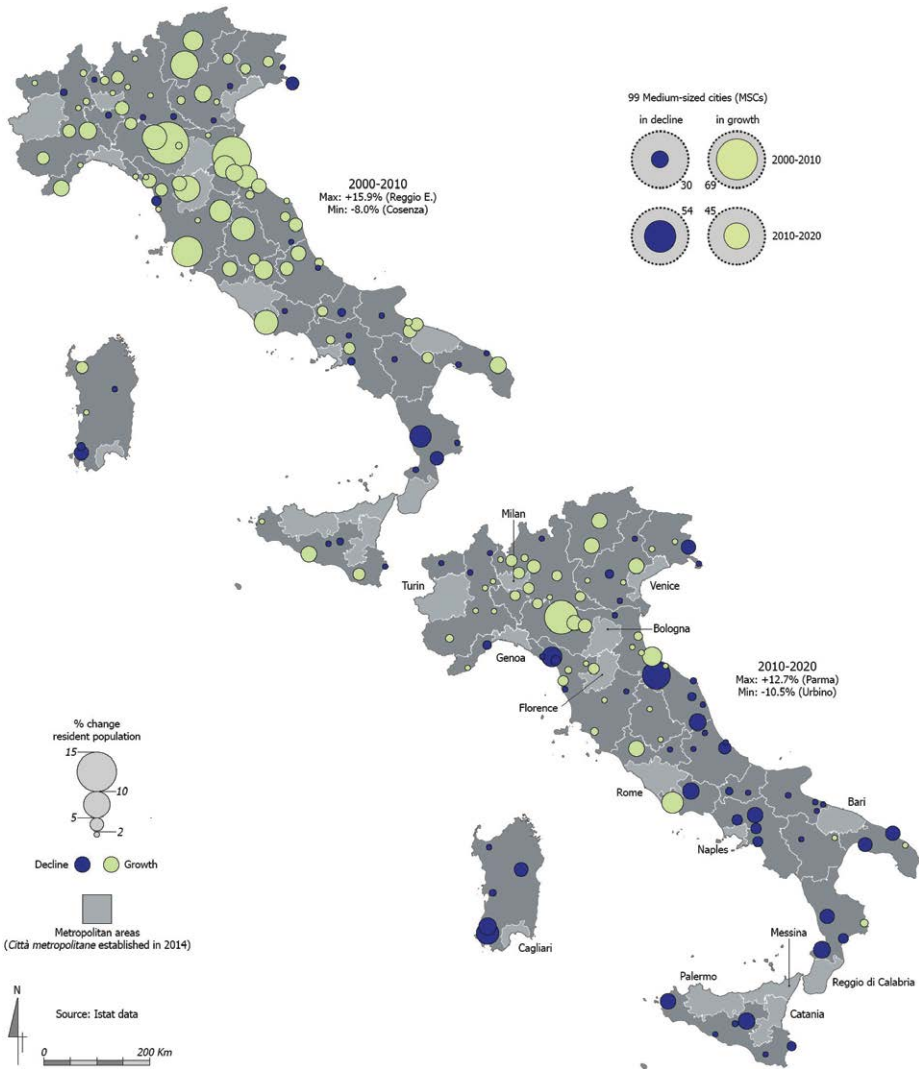


Figure 2. Change in resident population in MSCs, 2000-2010 and 2010-2020, % values

Source: own elaboration on ISTAT data.

other hand, growth was predominant, with very high values along the 'Via Emilia' road (particularly between Parma and Rimini). In the subsequent decade, the situation in the South deteriorated significantly: only three MSCs maintained a net population gain (Matera, Lecce and Crotona). In the North, on the other hand, most MSCs continued to attract inhabitants, but the momentum of the past

was no longer there, and cases of negative growth increased. The situation was very contrasting in Central Italy, where the MSCs in the Tyrrhenian area were in contrast with those of the Adriatic area, performing better and worse respectively.

These data show growing difficulty for MSCs over the last 20 years. While the picture is worrying in the South, MSCs in the rest

of the country are not immune to population shrinkage either, which often occurs in areas that have fallen into the ‘middle-income trap’ (Iammarino et al., 2020; Viesti, 2021).

The North/South divide is extremely useful in analysing the population dynamics of MSCs – an obvious choice in many ways, given the country’s history – but it is not the only factor that can be used. We have considered three other factors: the size of the cities, their location within different types of regions and their links with Trans-European Transport Network (TEN-T) corridors (Tab. 2). Size has considerably affected the growth of MSCs: performance was poorer in those with less than 50,000 inhabitants in both decades taken into account and in all geographical regions. This confirms the results of more large-scale studies (Cirilli, 2010). Smaller sizes result in smaller urbanisation economies, and this can be problematic in the current model of economic development. The effect of their location in urban, intermediate or rural regions – as defined by the OECD – is unclear. On a national level, the strength of MSCs

located in urban areas stands out (and this would confirm the crucial role of urbanisation economies). However, this is not always the case in the various geographical regions: in Central Italy, the MSCs located in rural areas are much more vibrant than the others. The link to big infrastructural corridors appears to have a positive effect on the performance of MSCs, in line with what is occurring in other countries (in Spain especially: Escudero Gómez et al., 2019). However, this is more evident in Northern Italy. Elsewhere, the ‘corridor effect’ is weaker. This could be due to the progress of infrastructural works and the country’s peculiar model of decentralised development (Iommi, 2016).

Natural and migratory dynamics

The evolutionary trajectories of MSCs are inferred from the different mix of the natural population rate (NR), the internal migration rate (IMR) and the foreign migration rate (FMR). If we consider the period from 2010 to 2020 (Tab. 3), it is clear how the MSCs had

Table 2. Change in resident population in MSCs by size and location, 2000-2010 and 2010-2020, % values

MSCs	2000-2010					2010-2020				
	North-West	North-East	Centre	South	Total	North-West	North-East	Centre	South	Total
Size classes ¹										
<50,000 inhab. (26)	1.7	0.4	2.3	-1.8	0.8	0.8	-2.2	-3.9	-4.8	-2.2
50,000-100,000 inhab. (43)	2.0	3.4	4.2	1.5	2.5	1.1	3.4	0.4	-2.2	-0.4
>100,000 inhab. (30)	1.3	5.4	6.7	-0.4	3.9	3.4	3.2	2.4	-2.8	1.9
OECD regional typology										
Urban regions (29)	1.7	4.3	5.4	3.5	3.7	2.5	2.1	1.6	-1.3	1.6
Intermediate regions (49)	1.8	6.1	2.9	-0.1	2.5	1.3	4.2	-0.7	-3.4	-0.03
Rural regions (21)	1.3	3.8	7.8	-0.5	3.0	-1.8	-1.1	1.8	-2.0	-0.4
Relations with TEN-T corridors ²										
Long corridors (38)	1.9	5.3	2.7	-2.1	3.4	2.3	3.0	-0.6	-4.5	1.6
Not long corridors (61)	1.4	1.2	6.0	1.1	2.6	1.2	1.7	1.3	-2.2	-0.4

¹ Resident population on 1 January 2020.

² Corridors 1 (Baltic-Adriatic), 3 (Mediterranean), 5 (Scandinavian-Mediterranean) and 6 (Rhine-Alps).

Source: own elaboration on ISTAT data.

Table 3. Demographic rates in MSCs and metropolitan centres, annual average values 2010-2020, ‰

Geographical areas (NUTS 1)	Natural rate (NR) ¹	Internal migration rate (IMR) ¹	Foreign migration rate (FMR) ¹
MSCs			
North-West	-4.01	2.42	3.81
North-East	-3.18	2.91	3.43
Centre	-3.53	1.41	3.04
Centre-North	-3.50	2.32	3.41
South	-2.09	-2.40	1.98
Total	-3.09	0.95	2.99
Metropolitan centres			
Centre-North	-2.83	1.95	5.73
South	-1.80	-2.58	2.33
Total	-2.52	0.59	4.71
Italy			
Italy	-3.07	-	2.17

¹ For year i-th:

NR = [(live births - deaths) / average resident population] * 1,000

IMR = [(registered from other municipalities - cancelled for other municipalities) / average resident population] * 1,000

FMR = [(registered from abroad - cancelled for foreign countries) / average resident population] * 1,000

Source: own elaboration on ISTAT data.

a negative natural balance, which was however offset by migratory flows from abroad and from other Italian municipalities (transfers of residence). The situation differed only in the South: the FMR was slightly positive and did not counterbalance the negatives on other fronts. The fate of MSCs depends a great deal on the entry of foreign citizens rather than on the ability to 'capture' movements from within the country. For that matter, in recent decades, domestic migratory flows have lessened in other developed countries as well (Alvarez et al., 2021).

MSCs and metropolitan centres have different demographic profiles. MSCs have a more negative NR. Thanks to their large labour markets, metropolitan centres are the preferred landing place of foreign population, which is generally younger and with higher fertility rates. In fact, the FMR is very positive in the metropolitan centres (especially in Central-Northern Italy): the value is roughly twice the recorded one in the MSCs (4.71‰ compared to 2.99‰). The strength of MSCs lies

in their greater ability to catalyse domestic migration (Rérat, 2012): of course, here too, the entry of foreign citizens constitutes a key contribution to demographic stability, but there is greater balance between FMR and IMR, which suggests that these cities are more welcoming and more pleasant to live in than the big cities. Some cities close to metropolitan centres could benefit from transfers of residence from the latter, particularly where there is an efficient public transport network (this is the case of MSCs around Milan, where the cost of living is high).

Local conditions clearly make the difference, determining six combinations of natural and migratory dynamics (Tab. 4). All MSCs experiencing growth in the 2010-2020 period had a positive FMR. The IMR was positive almost everywhere; in just three cases (Reggio Emilia, Latina and Crotone) was the NR, which contributes only slightly, also positive. Migratory flows thus drive population growth (profile C: 39 cases). The FMR plays a key role - which is not surprising - but in 16 MSCs

Table 4. Demographic profiles of MSCs, 2010-2020

Profiles	NR/IMR/FMR combinations (annual average values)	N° of cases by geographical area (NUTS 1)				
		North-West (22)	North-East (21)	Centre (22)	South (34)	Total (99)
Growing MSCs (45)						
Profile A	+++	0	1	1	0	2
Profile B	+-+	0	0	0	1	1
Profile C	-++	15	14	10	0	39
Profile D	--+	1	0	0	2	3
Declining MSCs (54)						
Profile B	+-+	0	0	0	3	3
Profile C	-++	6	5	4	4	19
Profile D	--+	0	1	7	22	30
Profile E	---	0	0	0	0	2

Source: own elaboration on ISTAT data.

in the Centre-North the growth was mainly due to transfers of residence. While profile C was predominant in the Centre-North, the few growing MSCs in the South always had a negative IMR (profiles B and D). In the group of MSCs with a shrinking population, Carbonia and Iglesias stand out, where all the rates were negative (profile E): a truly peculiar condition for cities with provincial capital status. In 19 MSCs, population loss was caused by natural dynamics not offset by migratory flows (profile C). More frequently, however, both the NR and the IMR were negative (profile D: 30 cases). This situation is very widespread in the South but was also found in various MSCs in Central Italy in the last decade: population is lost and often, unfortunately, young, skilled human capital is also lost, adversely affecting territorial development in the short- and long-term.

Contrasting forces at play in the urban areas around MSCs

Moving onto a different scale, we will now consider the population dynamics of MSCs in relation to their urban areas, which coincide with their employment areas (Fig. 1).⁶ The 'city life

cycle' model (Van den Berg et al., 1982) is very useful in this respect, despite some criticism (see section 1). It involves alternating phases of urbanisation, suburbanisation, desurbanisation and reurbanisation, in turn broken down into absolute and relative terms, based on population change in the core and ring of the urban system (for definitions, see Fig. 3).

In the 2000-2010 period, relative and absolute suburbanisation processes were predominant (67 cases), reflecting the vibrancy of municipalities around MSCs. The dynamics then became more varied, even though around one third of the areas were undergoing relative reurbanisation: although the population was declining, the trend was less pronounced in MSCs at the epicentre of urban areas. Different situations were seen with respect to geographical breakdowns. In the South, the picture was initially heterogeneous, but a convergence then emerged around processes of relative reurbanisation (18 cases) and relative desurbanisation (11 cases). The movement in the Centre-North was the opposite: in the 2000-2010 period, most areas were undergoing relative suburbanisation, while the positions diversified thereafter.

ties and 18.9 million inhabitants (31.3% of the national total).

⁶ In 2020, these areas included 2,311 municipali-

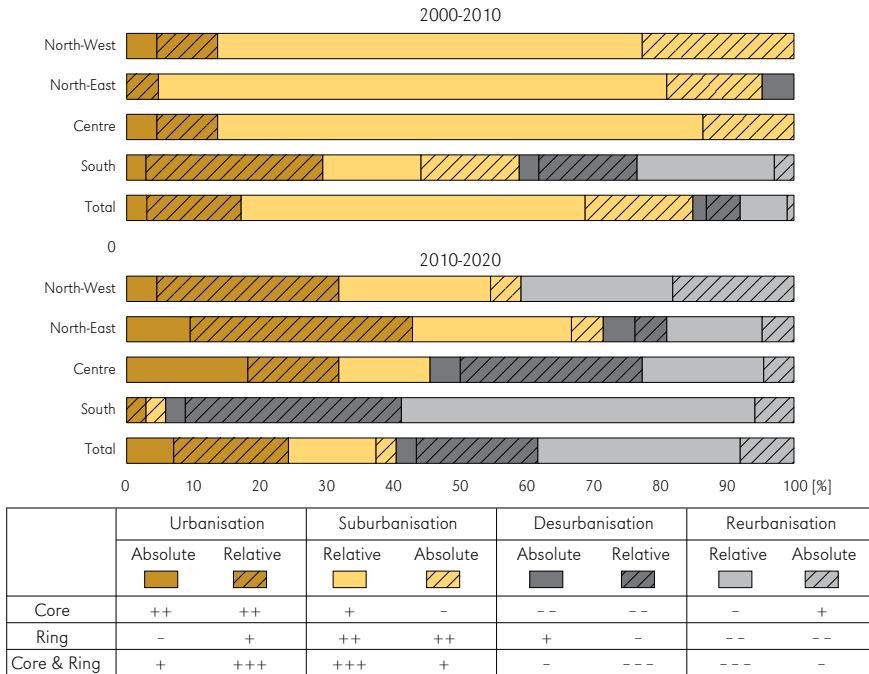


Figure 3. Stages of urban development in the employment areas of MSCs, 2000-2010 and 2010-2020, % cases by geographical area

Source: own elaboration on ISTAT data.

There are recurring situations – relative urbanisation in the North, relative desurbanisation in the Centre – but their weight is not overwhelming, indicating that there are locally differentiated trajectories. Movements in urban areas connected to MSCs often do not respect the theoretical sequentiality. This confirms a behaviour that has already been encountered in European metropolitan systems (Kabisch & Haase, 2011).

Considering the rates of population change in the various parts of each urban area, processes of centralisation and decentralisation can be identified. In the first case, the core (MSC) outperforms the wider area (employment area), while the opposite is true in the second case. All of this can occur in the presence of population growth or decline in the MSC hubs of urban areas. Four situations can therefore be identified (Tab. 5; Fig. 4):

- centralisation and growth of the main hub (CG);

- decentralisation and growth of the main hub (DG);
- centralisation and negative growth of the main hub (CN);
- decentralisation and negative growth of the main hub (DN).

Wolff (2018) considers this approach to be very useful as it allows an overview of population dynamics by ‘states’, instead of by ‘phases’ set out in a strict sequence.

In the 2000-2010 period, the areas around MSCs were fairly vibrant, so the drive for decentralisation was predominant (74 cases) and this also often occurred where there was growth in the main hubs (51 cases). However, the situation was not uniform throughout Italy. A process of decentralisation was underway in almost all urban areas in the Centre-North, whereas the situation was more contrasting in the South. Here, a process of centralisation was underway in 18 out of 34 areas, often coinciding with the growth of the main hubs

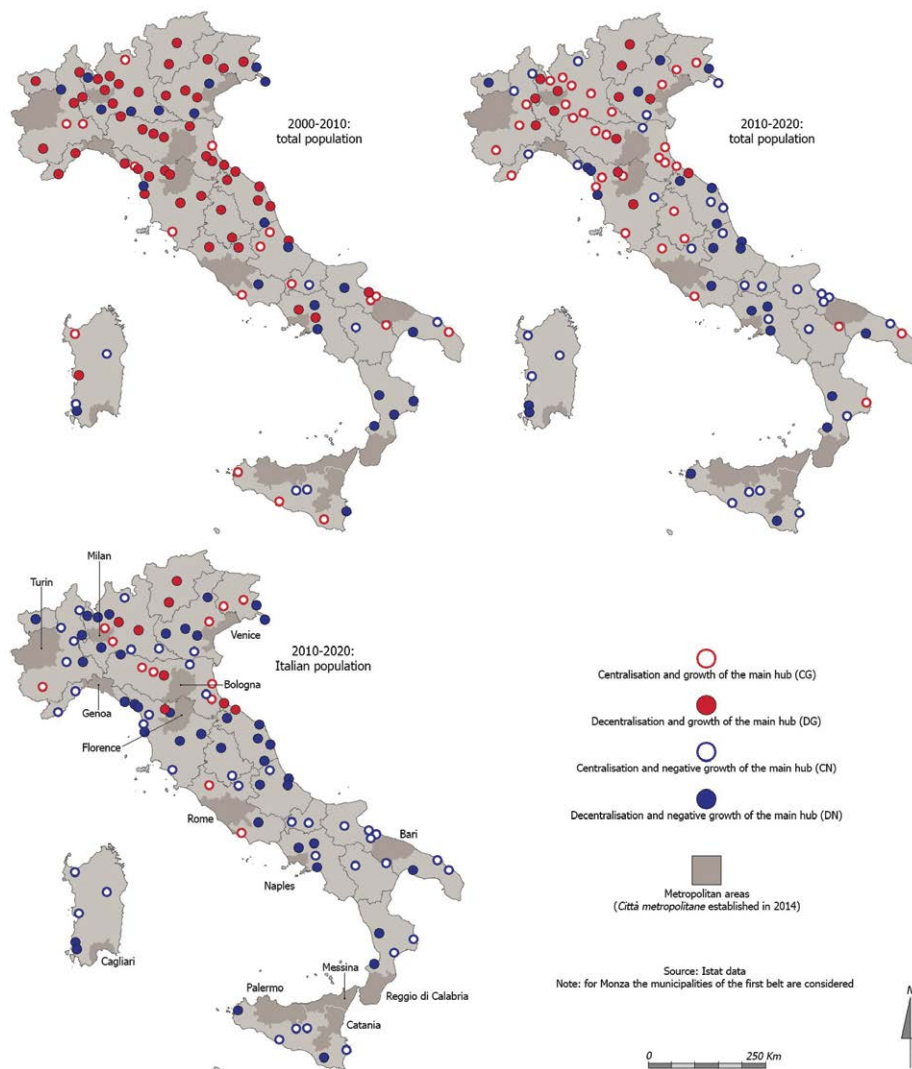


Figure 4. Centralization and decentralization in the employment areas of MSCs, 2000-2010 and 2010-2020

Source: own elaboration on ISTAT data.

(11 cases). In the period from 2010 to 2020, centralisation dynamics prevailed in the country (62 cases). The South experienced the consolidation of a trend that was already underway, but which is now widely associated with population decline in the main hubs.

The demographic crisis was therefore more severe around the MSCs. However, a clear

trend reversal emerged in the North: the processes of centralisation became prevalent and were brought about by the steady growth of the MSCs in most cases. Central Italy is an entirely different story, due to the simultaneous presence of a number of dynamics.

The failure to take into account the behaviours of the various sections of the population

Table 5. Demographic dynamics in the employment areas of MSCs, 2000-2010 and 2010-2020

Geographical areas (NUTS 1)	Centralisation and growth of the main hub (CG)		Decentralisation and growth of the main hub (DG)		Centralisation and negative growth of the main hub (CN)		Decentralisation and negative growth of the main hub (DN)	
	N°	% ¹	N°	% ¹	N°	% ¹	N°	% ¹
2000-2010: total population								
North-West (22)	3	13.6	14	63.6	-	-	5	22.7
North-East (21)	1	4.8	16	76.2	-	-	4	19.0
Centre (22)	3	13.6	16	72.7	-	-	3	13.6
South (34)	11	32.4	5	14.7	7	20.6	11	32.4
Total (99)	18	18.2	51	51.5	7	7.1	23	23.2
2010-2020: total population								
North-West (22)	11	50.0	5	22.7	5	22.7	1	4.5
North-East (21)	10	47.6	5	23.8	3	14.3	3	14.3
Centre (22)	8	36.4	3	13.6	4	18.2	7	31.8
South (34)	3	8.8	-	-	18	52.9	13	38.2
Total (99)	32	32.3	13	13.1	30	30.3	24	24.2
2010-2020: Italian population								
North-West (22)	3	13.6	2	9.1	9	40.9	8	36.4
North-East (21)	7	33.3	4	19.0	3	14.3	7	33.3
Centre (22)	2	9.1	2	9.1	5	22.7	13	59.1
South (34)	-	-	-	-	21	61.8	13	38.2
Total (99)	12	12.1	8	8.1	38	38.4	41	41.4

¹ Area = 100% unless rounded.

Source: own elaboration on ISTAT data.

is a critical point of this approach. While we should consider a number of aspects, a distinction between Italians and foreign citizens should be made at the very least. The former declined more sharply in MSCs compared to the national data (-3.8% against -2.2% in the period from 2010 to 2020) and supported decentralisation processes. In fact, compared to the picture outlined above, a significant increase in DN cases was observed (from 24 to 41). Of the 45 MSCs undergoing growth in the last decade, only 20 had a population gain for the Italian population. These were mainly cities located in the North-East, especially in Emilia-Romagna. The appeal of these cities owes much to the viability of local economies, but should also be traced back to more inclusive urban policies (less tension in the housing market,

more services for citizens, and so forth), which would be interesting to analyse in detail.

The early effects of the COVID-19 pandemic

The COVID-19 pandemic is upsetting population patterns on all geographical scales. Italy has also been hit hard: between January 2020 and July 2021 – over the course of the first three waves of infection – the population declined by as many as 527,616 people. As we have already recalled (section 1), the pandemic has adversely affected both natural and migratory population dynamics. What has happened in Italian MSCs? Table 6 compares the population rates recorded in the 18 months prior to and following the

Table 6. Demographic rates in the 18 months pre- and post-pandemic of Covid-19: comparison between MSCs and metropolitan centres, ‰ values

Geographical areas (NUTS 1)	Natural rate (NR)			Internal migration rate (IMR)			Foreign migration rate (FMR)		
	Pre ¹	Post ²	(Post/Pre) *100	Pre ¹	Post ²	(Post/Pre) *100	Pre ¹	Post ²	(Post/Pre) *100
MSCs									
North-West	-7.62	-12.99	170	5.18	1.90	37	6.29	4.44	71
North-East	-6.26	-10.26	164	5.61	2.61	47	5.92	4.22	71
Centre	-7.23	-10.38	144	1.79	1.10	61	5.32	3.94	74
Centre-North	-6.91	-11.00	159	4.33	1.96	45	5.83	4.19	72
South	-5.26	-8.01	152	-3.99	-2.91	73	2.60	1.75	67
Total	-6.43	-10.15	158	1.93	0.57	29	4.90	3.49	71
Metropolitan centres									
Centre-North	-5.90	-9.03	153	1.58	-1.28	-81	6.82	5.26	77
South	-3.84	-7.23	188	-4.63	-5.05	109	2.01	1.69	84
Total	-5.30	-8.50	160	-0.25	-2.39	96	5.41	4.22	78
Italy	-5.83	-8.73	150	-	-	-	2.83	2.37	84

¹ Period 1 July 2018-1 January 2020.

² Period 1 January 2020-1 July 2021.

Source: own elaboration on ISTAT data.

outbreak of the pandemic. The NR was already negative, but it plummeted especially in the North-West, the epicentre of the first wave of infection. This was the result of excess mortality combined with an unprecedented fall in the birth rate (in 2020, Italy experienced its lowest birth rate since 1861). The IMR also decreased. This trend was to be expected: the economic recession triggered by the health emergency and the general climate of uncertainty discouraged transfers of residence within the country.⁷ MSCs in Northern and Central Italy have maintained a positive IMR, but their appeal has waned. This concerns northern cities in particular, where the values have halved. The situation has improved in the South, on the other hand: the IMR has remained negative, but the flow of residence transfers has decreased following the health emergency. The FMR has remained positive, but is lower than in the pre-pandemic

phase.⁸ The decrease in values is not as sharp in comparison with the IMR and is more similar among geographical regions.

The IMR dynamics point to an important difference between MSCs and metropolitan centres. Due to the pandemic, the IMR became negative in the cities of Central-Northern Italy, with a marked reversal in the two biggest urban areas, Milan and Rome. In the South, on the other hand, the outflow of residents from the metropolitan centres increased, in complete contrast with what was happening in the MSCs. These data are significant because they concern official movements recorded in the civil registry (not temporary transfers of residence to second homes). We have a clear picture of the situation: with the pandemic, big cities – primarily Milan and Rome – lost their attraction as places of residence, just as in the United States and Japan (Fielding & Ishikawa, 2021; Ramani & Bloom,

⁷ Registrations from other municipalities decreased more than cancellations (-11.7% vs. -8.3%).

⁸ Registrations from abroad decreased less than cancellations (-27.9% vs. -29.8%).

2021). The differences between MSCs and metropolitan centres also concern the FMR: the latter group still has higher values than the former and has seen a smaller decrease.

If we follow the evolutionary trajectories of MSCs in detail (Tab. 7), we can see a deterioration in the NR, which was already negative in most cases. The only two cities in the South with positive values before the pandemic (Andria and Crotone) shifted into the negative field. With respect to the IMR, the picture is varied. Two trends are anticipated: reduced residential attractiveness in MSCs that had positive rates even before the pandemic (trajectory B) and a smaller outflow of residents where rates were negative (trajectory E). This is encountered in 39 and 17 cases respectively, with a clear North/South divide. Although these trajectories are predominant, other dynamics were at play in many MSCs.

There was a shift from positive to negative rates (trajectory A, more widespread in the North) or the other way round (trajectory D, common in the Centre-South). There also are 22 MSCs whose positive or negative dynamics underway in the pre-pandemic phase increased (trajectories C and F) and this behaviour is opposite to what expected. While the geographical breakdowns show some trajectories that are more common than others, the overall picture is varied, especially in the Centre-South. With respect to the FMR, most MSCs maintained positive values, but these values were down compared to the pre-pandemic phase (trajectory B: 61 cases). However, as many as 30 MSCs followed the opposite trajectory. There was a greater variety of situations in the South, with all the trajectories present, whereas the picture was more polarised in the Centre-North.

Table 7. Evolutionary trajectories of MSCs in the 18 pre- and post-pandemic months of Covid-19

Trajectories	Pre ¹	Post ²	N° of cases by geographical area (NUTS 1)				
			North-West (22)	North-East (21)	Centre (22)	South (34)	Total (99)
Natural rate (NR)							
Trajectory A	+	-	0	0	0	2	2
Trajectory F	-	--	22	21	22	32	97
Internal migration rate (IMR)							
Trajectory A	+	-	4	1	3	2	10
Trajectory B	++	+	14	15	7	3	39
Trajectory C	+	++	2	5	4	0	11
Trajectory D	-	+	1	0	4	6	11
Trajectory E	--	-	1	0	2	14	17
Trajectory F	-	--	0	0	2	9	11
Foreign migration rate (FMR)							
Trajectory A	+	-	0	0	0	1	1
Trajectory B	++	+	16	14	14	17	61
Trajectory C	+	++	6	7	8	9	30
Trajectory D	-	+	0	0	0	4	4
Trajectory E	--	-	0	0	0	2	2
Trajectory F	-	--	0	0	0	1	1

¹ Period 1 July 2018-1 January 2020.

² Period 1 January 2020-1 July 2021.

Source: own elaboration on ISTAT data.

In the 18 months following the pandemic, all MSCs experienced a decline in population, apart from Bolzano, Imperia and Pesaro. In aggregate form, the decrease is in line with the national data (-0.9%) and smaller than that of the metropolitan centres (-1.1%). However, the impact was greater (-1.3%) in the North-West, the first area in the grip of the pandemic. The pandemic altered relationships between MSCs and their urban areas: the centrifugal forces were strengthened (Fig. 5). This mainly concerns the Centre-North, where there was an increase in the decentralisation processes associated with population decline in the main hubs, affecting up to 54-59% of areas. The situation is different in the South. Many MSCs have lost inhabitants to a much lesser extent than the surrounding municipalities and this leads to repolarisation phenomena: it was already like this in the past and the trend has been reinforced with the pandemic (from 18 to 24 cases). The period under consideration is short (18 months), but if the trend reversal recorded in the Centre-North is consolidated in the future, we will need to manage a new wave of decentralisation on a broader or lesser scale, with repercussions on the demand for spaces

for housing, land take, infrastructures and the provision of essential services for citizens. In already densely urbanised areas, how can we fit all this in with the quest for a model of sustainable development, made mandatory by climate change? Much will depend on the recrudescence of the pandemic and the place in the 'new normal' for flexible forms of working (online and remote) that free many people – but not key workers – from the constraint of proximity between places of residence and work. There has been an unexpected rise in voluntary redundancies over recent months in Italy. This is also happening in the United States – where it is described as the Great Resignation (Cook, 2021) – and may indicate that many people are seeking greater flexibility in their work. This impacts job profiles, but also affects residential choices and therefore the relations between local areas and cities of different sizes.

Conclusions

From the perspective of population dynamics over the last twenty years, Italian MSCs do not constitute a unitary group. There are both positive and negative aspects. With respect

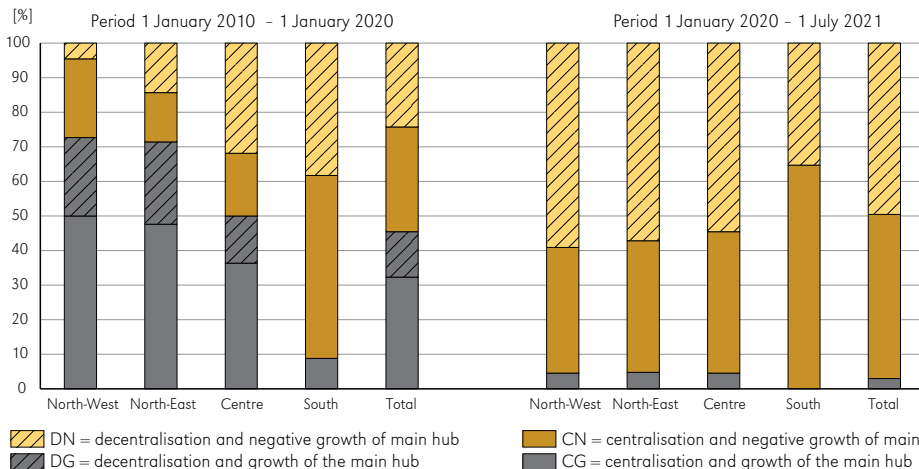


Figure 5. Changing demographic dynamics in the employment areas of MSCs after the COVID-19 pandemic, % cases by geographical area

Source: own elaboration on ISTAT data.

to the first line of research followed in this paper, a difference can be seen between the network of MSCs and the one of metropolitan centres, in terms of the level of population vitality and the underlying factors (NR, IMR and FMR). Specifically, in the period from 2010 to 2020 MSCs, especially the smaller ones, were less vibrant than the metropolitan centres. The North/South divide is prominent, which is to be expected in the light of the country's history: MSCs are not 'free electrons' (ESPON, 2014) and they reflect the different conditions of the regions to which they belong. However, it should be noted how the 'strong' Centre-North is not monolithic: in the last decade the contrasts increased and many MSCs have entered a trajectory of population decline. The narrative of the 'two Italies', which is well-known internationally, should be re-examined.

Observing the redistribution of population in the urban areas connected to the MSCs (employment areas), we can see a shift from a decentralisation phase (2000-2010) to a centralisation phase (2010-2020). In the South, a process of repolarisation has often been set in motion within the context of shrinkage: MSCs are losing inhabitants, but not as many as the surrounding municipalities. In the North, on the other hand, MSCs generally grow faster than their urban areas. However, the drive for repolarisation does not concern the entire population: in the last decade, the Italian population still drove the opposite dynamic, and this threatens to widen divisions in society.

With regard to the impact of the COVID-19 pandemic (the third line of research), a reduction in population rates was evident and more pronounced in MSCs in the Centre-North. Moreover, decentralisation processes were reinforced in the Centre-North in the 18 months following the health emergency. MSCs continue to have different demographic profiles from the metropolitan centres, especially in terms of the IMR. The overall picture is ambiguous: MSCs are more affected than surrounding municipalities, but have reacted better than metropolitan centres.

However, more in-depth research is required on individual geographical areas to monitor the evolving relationships between cities of different sizes. In particular, we need to understand whether a new urban cycle is beginning, characterised by renewed attractiveness of underdeveloped and/or more isolated areas (inland areas), which up until now have emptied in favour of 'strong' places.

Public policies should desirably focus more on MSCs to strengthen their natural role as heralds of polycentricity. The launch of a National Operational Programme for MSCs in the South, in the context of the 2021-2027 cohesion policy, is undoubtedly positive. The problems in the South are bigger, but MSCs located elsewhere should not be overlooked. The Italian National Recovery and Resilience Plan (NRRP) is an opportunity not to be missed. Municipal authorities have important roles to play in its implementation and MSCs could lead the energy and environmental transition in their micro-regions. Intermunicipal policies, an age-old problem in Italy, would therefore be strengthened.

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Unless otherwise stated, the sources of tables and figures are the authors', on the basis of their own research.

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