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(Occasional Papers)

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by Antonio Accetturo, Andrea Lamorgese, Sauro Mocetti and Paolo Sestito

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LOCAL DEVELOPMENT, URBAN ECONOMIES AND AGGREGATE GROWTH

by Antonio Accetturo*, Andrea Lamorgese**, Sauro Mocetti** and Paolo Sestito**

Abstract

The aim of this paper is to present an overview of the results of a recent research project by the Bank of Italy. The paper analyses the interplay between historical origins, congestion costs, and agglomeration benefits in shaping the Italian urban system. It shows that urban agglomeration externalities (on wages, productivity, or innovation) tend to be smaller in Italy than in other developed countries; it also shows that the costs of congestion are relatively high and that high housing cost – explained by both physical constraints and public administration inefficiencies – discourage mobility. These features have a relevant impact on the development of an advanced urban system with possible negative consequences on the country's ability to grow.

JEL codes: O10, R10, R30.

Keywords: economic growth, agglomeration, congestion costs, urban premium.

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1. Introduction

In recent decades, the rate of growth of the population has been higher in urban areas than in non-urban areas in all the advanced economies.¹ A large body of literature, both theoretical (Lucas, 1988) and empirical (Melo et al., 2009) has emphasized the role of urban areas as an engine of economic growth. Agglomeration economies enhance productivity in part because they foster innovation by creating and developing new products (Duranton and Puga, 2001) and by improving the allocation of resources (De La Roca and Puga, 2016). The distribution of the population between cities, therefore, has a very significant impact on the aggregate economic growth of a country (Castells-Quintana, 2017), especially for the advanced economies (Frick and Rodriguez-Pose, 2018).

For long the city has not been a unit of analysis in economics, in general and in Italy in particular, the focus being on other spatial units (e.g. region or province, corresponding to NUTS2 and NUTS3 Eurostat classification of territorial units, respectively). This choice has been primarily dictated by data constraints. Indeed, data on finer partitions of the territory – i.e. municipalities or Local Labour Markets (LLMs) – are scarcer (especially for the main economic variables) than those regarding other (larger) administrative units. Moreover, the LLMs have been introduced only in 1981, which precludes long-run analysis at this level of breakdown. Finally, the economic debate on spatial differentials in Italy has been mostly focused on the North-South divide and on the role of industrial districts rather than on cities as source of agglomeration economies.

A recent research project by the Bank of Italy has attempted to assess in quantitative and qualitative terms the role of urban areas in the economic growth of Italy.² The objective of this introductory paper is to show – in a necessarily selective manner – some of the key findings in order to contribute

¹ Between 1920 and 2010 the population in the metropolitan areas of the United States grew by 17.9 per cent every ten years on average, exceeding the nation-wide rate by 5.3 percentage points. Over the same period, urban areas in Spain grew by 18.1 per cent every ten years, twice the national average. In France urban population growth was 7.7 per cent every ten years in the period 1937-2007, 2 percentage points above the national average. In Italy, the population of the municipalities that in 1911 had more than 20,000 inhabitants rose by 7.2 per cent every ten years between 1911 and 2011, against 4.9 in the national average (Giffoni et al., 2017).

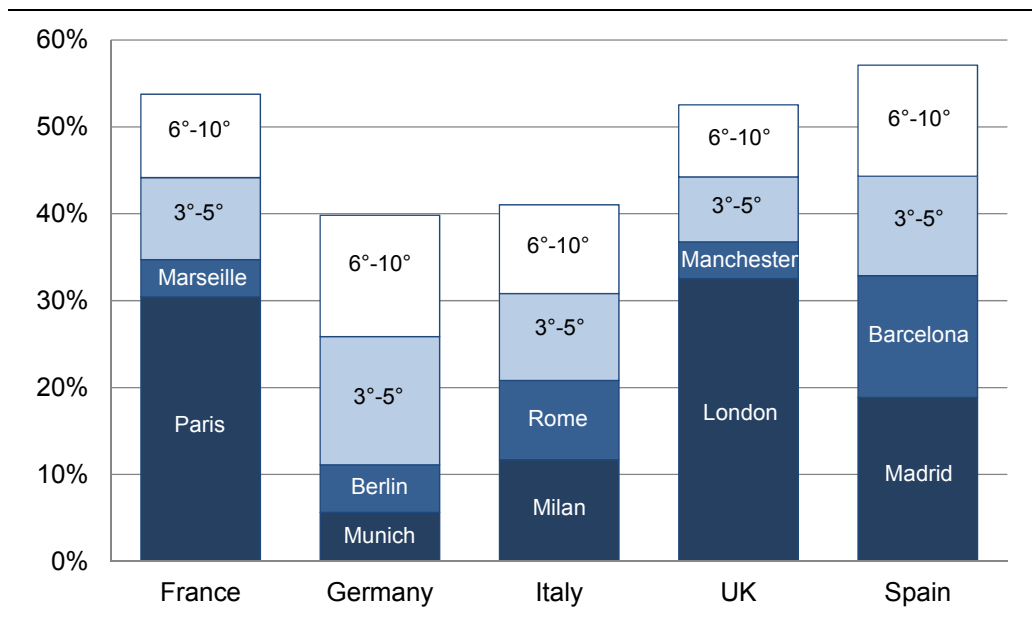
² Unless otherwise specified, ‘urban areas’ are LLMs – as defined by Istat in 2011 on the basis of commuting patterns – with a population density above 1,500 inhabitants per square kilometre. See Lamorgese and Petrella (2019) in this issue for more details.

to the economic policy debate on the role of urban centres in national development.³

A first piece of evidence is that the contribution of Italy’s large urban agglomerations to the national economy is lower compared with the other advanced countries; Italy’s large urban centres have a smaller share of the population and generate a relatively lower value added compared with France, the United Kingdom, Spain and, to a lesser extent, Germany (Fig. 1).

The relatively limited magnitude of urbanization in Italy is deeply rooted in history. At the beginning of Italy’s ‘economic miracle’ and, therefore, of the country’s transformation into an industrialized economy, its urban network was highly polycentric in the North and strongly bimodal in the South (while the rest of the population in this geographical area lived in inland, remote areas). The internal migrations of the following decades only partially altered this situation: starting in the 1970s, larger urban areas have expanded mainly by absorbing peripheral municipalities in their LLM and extending the commuting radius (Section 2).

Figure 1. GDP in the main urban areas: international comparison



Source: authors' elaborations on data drawn from OECD.
Each area represents the share of the urban area(s) GDP on the national GDP.

Against the backdrop of an international economic environment marked by the growing importance of services (especially advanced), which benefit greatly from economies of agglomeration, the limited development of

³ See, for example, the role that ‘smart cities’ play in the [European Commission’s development agenda](#).

the Italian urban system could translate into a further brake on the national economy. Not much is known, however, of the causes of the limited development of urban centres in Italy.

Our findings show that the costs of agglomeration in Italy are high. We highlight how Italian urban areas display a level of vehicle congestion that is, all other things being equal, higher than in many other European cities. Moreover, urban rents, especially in the centre of the large urban areas, are very high and discourage mobility into big cities. Finally, and partly related, housing supply elasticity is low in an international comparison. These characteristics are affected not only by geographical constraints but also lie in the chronic inefficiency of the public administration, ineffective and insufficiently widespread public transport, and under-utilized real estate (Section 3).

While the costs are high, the benefits of agglomeration are instead quite limited (Section 4). The productivity and innovation ‘premium’ for workers and firms is lower than that estimated for other countries, and this is reflected – also because of the existing labour market institutions – in a lower wage premium for those living in a large urban centre in Italy.

What are the economic policy implications? Section 5 sets out some possible exit strategies, mainly centred on decongesting urban areas.

2. Italy’s urban network: historical roots and evolution over time

Italy has been an urban civilization for a very long time (Bairoch et al., 1988; Malanima, 2005; Michaels and Rauch, 2018). Already in Roman times the Italian peninsula displayed a high level of urbanization.⁴ Despite the severe decline they suffered in the early Middle Ages, Italian cities regained significant economic importance before the Renaissance, as long-distance trade resumed. The current situation, however, is one in which the contribution of the urban areas to the national economy is somewhat limited. Italian cities are very numerous but smaller in size compared with other advanced economies.⁵ The paper by Accetturo and Mocetti (2019) in this

⁴ According to [Pleiades](#), in late Roman times Italy had 2.5 settlements per 1,000 square kilometre, twice the density in France (1.2) and Spain (1.0) and five times that in Germany or Great Britain (0.5 for both); a settlement here means a city (with walls, aqueducts, theatres etc.) or village of Roman or earlier origin.

⁵ The share of population living in the main urban area (‘urban primacy’) is 7 per cent in Italy, comparable to that in Germany, but is significantly higher in the United Kingdom, France and Spain; considering the share of the population living in an urban area with at least half a million inhabitants, Italy is by far the country with the lowest share (31 per cent), not only in comparison with France and the United Kingdom (41 per cent for both) and Spain (38 per cent), but also compared with Germany (40 per cent).

special issue reviews and discusses the historical origins and the subsequent development of the Italian urban system.

The formation of an urban network is the result of the interplay between a territory's history and geography. Geographical features (physical geography, geology, seismicity) can play an important role in the development of an urban area because they constrain the supply of new housing and, hence, the territory's ability to attract new workers during positive labour demand shocks. Events affecting a territory – such as war, disease outbreaks, or changes to national borders – also have a significant impact on the economic and demographic development of a city, changing its long-term growth potential.

The evidence available in the regional economics literature in Europe and the United States shows that geographical features play a significant, but not predominant part in defining the urban network of a country (Combes et al., 2010; Henderson et al., 2019).⁶

Historical shocks may have had an equally significant impact on the configuration of the Italian urban network. In Northern Italy, frequent conflicts (Dincecco and Onorato, 2016) and political fragmentation (Cervellati et al., 2018) contributed to the development of many medium-small urban centres (Hohenberg, 2004), often in competition with one another not only politically and militarily but also economically. In the South, the more limited political fragmentation enabled the growth of Palermo and, especially, Naples.⁷ The two large urban centres of the South, however, were mainly administrative centres which to a very high degree lived off the surrounding areas (Bosker et al., 2008). Therefore, they acted as poles of economic attraction also because the rest of the population was scattered in small, remote centres, which were preferred in part because of the risk posed by pirates in the Mediterranean (Accetturo et al., 2018b).⁸

The impact of historical events on the initial setting of an urban system is particularly long-lasting (Hohenberg, 2004; Michaels and Rauch, 2018). In Italy, historical factors basically constrained the development of larger urban areas despite the fact that both Italian Unification and, especially, the “economic miracle” (since the 1950s) changed the spatial distribution of the Italian population due to changes in both political conditions (the end of

⁶ Considering a large sample of characteristics relating to geology, physical geography and seismicity, geography explains about 30 per cent of the differences between cities in terms of population, and about 50 per cent of the differences in term of population density.

⁷ Up to the 19th century, Naples was one the largest cities in Europe.

⁸ The data presented by Bosker et al. (2008) show how in the South urban primacy calculated on cities with more than 10,000 inhabitants was significantly higher than in the Centre-North (15 and 9 per cent respectively), but the average population per city was lower (21,000 versus 32,000 inhabitants).

political fragmentation in the country and of piracy in the Mediterranean) and economic conditions (the structural transformation of the economy and the major shrinking of the agricultural sector).

As happened in other countries (Michaels et al., 2012; Desmet and Rappoport, 2017), between 1951 and 2011 small population centres steadily lost population to larger ones. Since 1951, the population has grown at a relatively faster pace in the North Italian Plain and in areas surrounding the large urban centres of Central and Southern Italy (Accetturo et al., 2018b). The Apennine Mountains have instead been gradually depopulated. During the economic miracle years (1950s and 1960s) the depopulation of small towns favoured the larger urban areas, especially those located in the 'industrial triangle' of North-Western Italy. Since the 1970s, instead, internal migration (still to the detriment of small towns) has been directed towards medium-sized centres.

How is it that it was Italy's medium-sized cities (and not the large ones) that attracted population?

One possible explanation has to do with the changes that have occurred in Italy's economic geography since the 1970s, i.e. the industrialization of the 'Third Italy' (the North-East and the Centre of the county) and the significant development of the industrial district system, which is naturally centred around medium-sized cities.

This explanation, however, is not exhaustive and, more importantly, is not very consistent with the gradual tertiarization of the economy and the crisis that affected the district-based system in the last decade. As Accetturo and Mocetti (2019) point out, the breakneck process of industrialization of the 1950s and 1960s led to a very sharp increase in congestion costs, making large urban areas relatively less attractive even when there was a strong demand for labour coming from them (Ciani et al., 2017).

Since the 1970s, in the absence of large migratory flows, growth in the large urban areas has been sustained by the gradual enlargement of the commuting areas: the growing cost of housing in the bigger cities has led workers to accept ever longer commuting times with strong negative consequences in terms of traffic congestion and individual well-being (Loschiavo, 2018).

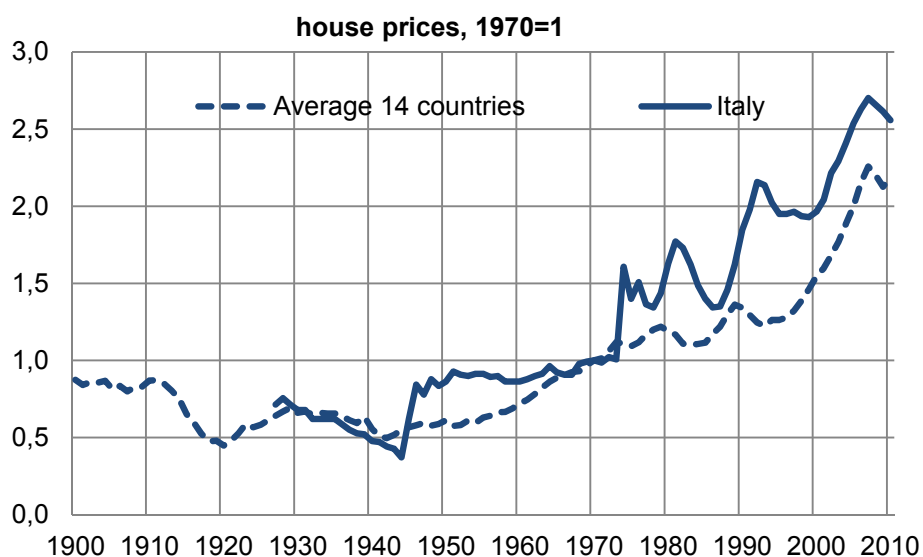
3. The real estate market

One of the main determinants of the increase in commuting times within urban areas was the rise in housing costs in Italy's main agglomerations.

House prices in Italy have grown significantly in recent decades, both in nominal terms and as deflated using consumer prices. Net of inflation, they displayed modest growth until the second half of the 1960s. Between the 1970s and the mid-2000s (at the peak of the real estate cycle) house prices tripled in real terms (Cannari et al., 2016), growing at a faster rate overall compared with other advanced economies over the same period (Fig. 2).

These dynamics are reflected in house prices that are higher relative to income compared with the other European countries. Based on Deloitte data for the main European countries, in 2016 in Italy the value of a 100 square metre house was 8.5 times that of per capita GDP, slightly above the average for the countries considered.⁹

Figure 2. International comparison of real house prices (1970 = 100)



Source: Cannari et al. (2016) and Knoll et al. (2018).

However, house prices display high heterogeneity in a given country, and tend to be higher in the more developed and densely populated areas. Manzoli and Mocetti (2019), in this special issue, provide extensive descriptive evidence on heterogeneity across and within LLMs in Italy.

House prices in the Centre-North are almost 70 per cent higher than those of comparable dwellings in the South.¹⁰ The heterogeneity of house

⁹ Austria, Belgium, Denmark, France, Germany, Italy, the Netherlands, the United Kingdom and Spain. The highest values were recorded in France and the United Kingdom (where the ratio of house prices and per capita GDP was more than 12), which are affected by the high real estate values of Paris and London respectively.

¹⁰ Geographical differences remain significant if house prices are compared with income, especially between areas displaying different degrees of urbanization. The cost of a 100

prices is, however, only in part attributable to the traditional dichotomy between these two macro-areas. Indeed, urban areas are characterized by house prices that are more than 50 per cent higher than in non-urban areas. Moreover, within urban areas, house prices in the more central areas are almost 80 per cent higher than in the rest of the city.¹¹ The geographical location of housing, and especially its distance from the city centre, represents a key element in its pricing.¹² On average, moving 10 kilometres away from the city centre results in house prices that are more than 40 per cent lower; moving from 10 to 20 kilometres away leads to a further reduction in prices, but not such a significant one (less than 10 per cent).

Urban areas are characterized not only by higher house prices on average, but also by a steeper centre-periphery gradient; conversely, the peripheral areas of urban settings do not display significantly different prices compared with non-urban settings. For the central areas of cities, instead, the difference is very marked. This evidence offers a fairly convincing explanation of why the growth of Italy's urban areas has been based more on an enlargement of commuting areas than on migration.

Why have house prices displayed such significant dynamics in the last four decades? And why city centres are so expensive with respect to other urban areas?

As happened in other countries, a significant part of their rise is ascribable to an increase in the prices of building plots (Cannari et al., 2016), which in turn was due to the growing demand for housing against the backdrop of existing constraints on the supply side, most notably in terms of a scarcity of building plots within urban centres.

On the one hand, the demand for housing is higher where the employment rate, average income and population density are higher (Caldera

square metre house is equal to about eight times the average income declared by taxpayers: the value is more than 10 for metropolitan labour market areas and more than 12 for the centroid municipality of the labour market area.

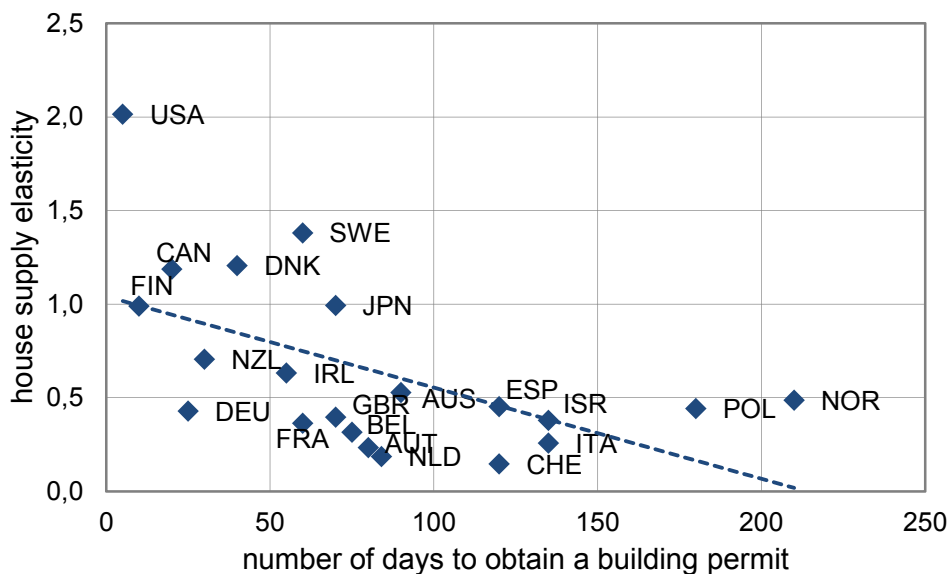
¹¹ Calculations performed using data from the Survey on Household Income and Wealth survey, which make it possible to gain a better understanding of the qualitative differences between buildings, confirm these findings. The prices by square metre are almost 60 per cent higher in the Centre-North than in the South. The gap narrows by 10 percentage points when controlling for cadastral category, year of construction, availability of a heating system, and the presence of two or more bathrooms. Within cities, house prices are 20 per cent lower in the suburbs than in the city centre (only just over 10 per cent when taking account of the features of the houses). These figures are about twice as high in municipalities with more than 200,000 inhabitants.

¹² Differences between the various areas of a given city can reflect, among other things, a different composition of the population living there, both in terms of economic conditions (Manzoli and Mocetti, 2019) and of other socio-demographic characteristics, for example citizenship (Accetturo et al., 2014).

and Johansson, 2013, Manzoli and Mocetti, 2019), all factors that set apart urban areas from non-urban areas.

On the other hand, the supply of dwellings is quite rigid in Italy, especially in urban areas. Namely, the existing evidence shows that the housing supply is more elastic in North America and some Nordic countries, while it is more rigid in continental Europe, especially Italy (Caldera and Johansson, 2013). The greater rigidity in the housing supply in Italy could also be ascribable to the higher relative inefficiency of public administration in terms of, for example, the higher number of days necessary to obtain a building permit, or administrative issues (Fig. 3). In a similar vein, physical constraints such as the presence of mountains or bodies of water (Saiz, 2010), can hamper residential development. As far as Italy is concerned, Accetturo et al. (2018c) show that physical geography explains about 10 per cent of the differences in terms of the elasticity of the housing supply between Italy's main urban centres.

Figure 3. Housing supply elasticity and land-use regulation



Source: Caldera and Johansson (2013).

Finally, infrastructural aspects also play an important part in the performance of the real estate market. The centre-periphery gradient of house prices is higher in the more highly congested labour market area (Manzoli and Mocetti, 2019); investment in public transport could mitigate this element, as shown in a recent study of house prices in Florence after the inauguration of a new tram line in 2010 (Budiakivska and Casolaro, 2018).

House prices and the elasticity of housing supply crucially affect the ability of a city to absorb the population growth due to a labour demand

shock. Ciani et al. (2017) shows that the responsiveness of LLMs to decadal shocks in labour demand is quite limited and that this is partly due to house prices whose increase reduced population mobility towards expanding areas. Accetturo et al. (2019c) perform a similar exercise, focusing on the variability of housing supply elasticity across cities. They show that in cities with a less (more) elastic housing supply the impact of a positive shock on economic growth is significantly lessened (increased) while the effects on house prices and wages are larger (lower).

4. The benefits of agglomeration

In the previous sections we have shown that the congestion costs of Italian urban areas are high for reasons relating to history, physical geography, and the country's infrastructural endowment. The competitiveness of large Italian urban areas, however, depends not only on the costs but also on the benefits of agglomerations. The trade-off between agglomeration economies and diseconomies explain why population is spread among many cities, which are, in turn, spatially dispersed and the size of the cities.

The picture that emerges from an analysis of the benefits of agglomerations is multifaceted. Italian cities' productivity and innovation levels are similar or just barely lower in both level and rate of change compared with other advanced economies: these benefits, however, are only marginally reflected on workers' wages (even in the case of the most skilled workers), putting a further brake on the growth of big cities. The paper by Lamorgese et al. (2019) in this special issue examines the extent of wage premium in Italia cities.

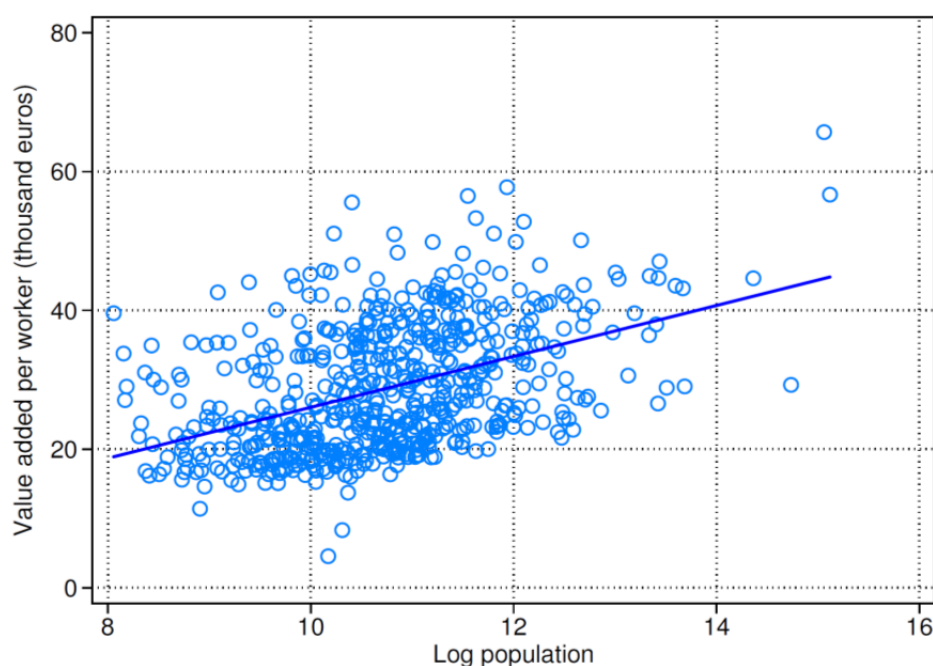
According to OECD data¹³ in 2000 the labour productivity of Italian cities was 16 per cent higher than the national average, displaying a gap similar to that observed in the main European economies (14 per cent in Germany, 8 per cent in Spain, 17 per cent in the United Kingdom, and 19 per cent in France); in the following decade the productivity edge held practically stable in Italy while increasing slightly in France (by 5 percentage points), the United Kingdom (3 points) and Spain (2 points) and decreasing slightly in Germany (by 2 percentage points).

An analysis of micro data on individual firms reveals that non-financial private firms located in urban areas have higher labour productivity (Fig. 4). This is partly due to the more favourable composition of the firms operating in those areas (Lamorgese and Petrella, 2018a). However, there is also an

¹³ See [OECD \(2018\), 'Metropolitan areas', OECD Regional Statistics \(database\)](#).

intrinsic advantage linked to being located in an urban area: looking at firms that have moved their location, it appears that relocating yields a significant gain of 10 percentage points on average as measured four years after the move, and this increase seems to be even greater for firms moving from non-urban to urban areas. However, this increase is of a largely static nature as it tends to stabilize after a certain time period.

Figure 4. Housing supply elasticity and land-use regulation



Source: authors' elaboration on data drawn from Istat.
Each dot represents a LLM.

Location in an urban area also has positive effects of firms' capacity to innovate (Cascarano et al., 2018). Consistently with a large body of international literature (Glaeser et al., 1992; Duranton and Puga, 2001), our evidence confirms that urban areas represent an ideal environment for the birth and development of new ideas thanks to the presence of knowledge externalities and of credit markets that are better suited to provide funding to innovative ideas. Inventors located in urban areas have a higher probability of registering a patent than those located in non-urban areas, although the gap is narrower in Italy compared with other countries.

Wage premiums in Italian urban areas are instead relatively lower than those calculated for other countries. It is estimated that as the population doubles there is an increase of 2.2 per cent in nominal hourly wages. However, if we take account of the different composition of the population – which differs between urban and non-urban areas as individuals who are

more productive on average trend to live in larger cities – the increase is less than 1 per cent. In other countries the gap is equal to 5 per cent gross of the selection effects, and to 2 per cent net of them (De La Roca and Puga, 2016). If the analysis is restricted to the wages of inventors only, the urban wage premium is virtually nil.

There are a number of possible causes for the lower wage premium in Italy, including also (a) centralized wage bargaining, which results in a marginal role for second-level bargaining, i.e. the level in which differences in productivity between firms and geographical areas are reflected; (b) the presence of higher non-monetary forms of compensation in cities (Dalmazzo and De Blasio, 2011); and (c) the lesser importance of matching as a source of agglomeration in Italy compared with other countries (Andini et al. 2013).

Distinguishing between the wage premium gross of the selection effects and net of them enables us to understand the determinants of growth for a given city and whether they are replicable in other cities.

The selection effect component is linked to the characteristics – both observable and non-observable – of individuals and firms and is not a determinant of growth for a specific city, in the sense that such advantage is replicable in any other setting to which these firms or individuals may move: if a city displays a productivity advantage due to the greater productivity of some individuals residing there, these advantage will not be localized but will instead move together with those firms or workers.¹⁴

The wage premium net of selection effects instead denotes a specific characteristic of a given city, a sort of *genius loci*, in the sense that it is an advantage linked to that location and which benefits all the workers located in that city.¹⁵

The fact that in Italy the wage premium in urban areas (already quite low) is completely dominated by selection effects basically implies that Italian cities succeed (in part) in attracting skilled labour but benefit from and reward these individual skills to a very limited extent. In other words, the positive knowledge externalities that do, in any case, exist in Italian urban areas are very marginally reflected on wages – especially for the most skilled workers – and therefore the effects on migration of workers and

¹⁴ This component is due to sectoral composition, firm size or any other observable or non-observable characteristic of individuals and firms located in a given city, i.e. the effects stemming from the fact that cities attract – on a disproportionate scale relative to the average – faster-growing sectors of firms with a higher growth potential.

¹⁵ Another distinction made by the literature is between the advantages due to this city-specific component and that benefit firms and workers as soon as they move into the city versus those that are acquired gradually. In general, the former disappear as soon as the worker or firm relocates elsewhere, while the latter are a sort of knowledge capital that firms or workers carry with them when they move elsewhere (see De La Roca and Puga, 2016).

accumulation of human capital are reduced. The paper by Ballatore and Mariani (2019) in this special issue examines the territorial differences in human capital endowment and the role of migration.

5. Implications for economic policy

With the gradual tertiarization of the economy, the urban areas of advanced countries have acquired an ever greater centrality and contribute to a larger extent to the aggregate growth of an economy (Glaeser, 2011; Hsieh and Moretti, 2018; Frick and Rodriguez-Pose, 2018); the positive effects of concentration in urban areas, however, can be very different depending on the characteristics of the urban areas in a given country (Castells-Quintana, 2017).

The findings of our research project returns a picture of the Italian urban system struggling to adapt to the challenges of the new millennium. Starting in the 1970s, the largest municipalities have stopped attracting population; the depopulation of smaller centres has all been to the benefit of medium-sized cities, and the growth of the largest urban areas has taken place only through the ‘absorption’ of the belt areas and at the cost longer commuting and growing congestion.

These dynamics have been associated with a sharp increase in real estate rents, which have been quite reactive to demand shocks – far more than wages and population have. Moving back to the present, the wage premium in large urban centres remains quite moderate, also owing to the still strong centralization at national level of wage bargaining and especially when looking at the wage premium net of the selection effects that lead to the concentration in urban centres of a population displaying higher skill levels. This entails a distinctive dimension of inequality within our country which not only opposes urban and non-urban centres, but also those who own a house in the (central areas of the) urban areas by way of inheritance versus those who must accumulate resources to be able to enjoy this benefit (either by renting or buying). Net of these costs, therefore, there is often limited incentive to relocation, which is what triggers those agglomeration processes that generate additional growth.

The current situation, therefore, is one of congestion, limited population mobility, and high real estate rents all acting as a brake to growth for the economy as a whole.

The traditional and persistent dualism between the South and North of the country can and must be reconsidered in light of this distinctive interpretation. A North that is polycentric but marked by the presence of

urban centres that are congested and have difficulty growing and developing beyond a certain threshold is flanked by a South in which the ever growing difficulty of generating growth may no longer be due to the persistence of archaic equilibria in rural areas but rather to the poor institutional quality of its cities, which are unable to act as centres of innovation and development and as poles of attraction of skilled resources.

What are the possible exit strategies?

The capacity of an individual city to function as a pole of development – as a centre of attraction and mobilization of skilled resources in addition to the mere role of activating traditional economies of scale – depends on the institutional quality of governance in that city (i.e. of that urban area a whole plus the links between it and the country to which it belongs). Acting on these aspects is a daunting task and the difficulties of the Italian urban system, especially in the South, can be traced back to a number of intertwined issues.

Two main issues are the functioning of the labour market and that of the real estate market. The former still hinges around the centralized bargaining acting as a significant brake to the allocation function that wages should have on the geographical distribution of the population, stiffening the market structure and hampering, even within individual urban areas, those dynamic matching mechanisms that should instead be one of the strengths of urban areas compared with less densely populated areas. The latter is plagued by all sort of tax or regulatory impediments or disincentives to the use of the existing real estate assets (i.e. renovation, rental or sale) coupled with physical and/or regulatory and administrative constraints to an expansion of the existing real estate, thus discouraging development of a given area and only resulting in higher urban rents.

The transport networks also play a major role, both within a given urban areas and across different one. Within an area it is a tool to expand the geographical dimension of the city (by smoothing the centre-periphery gradient in house prices) and to facilitate dynamic matching processes between firms and workers, avoiding the emergence of urban ghettos devoid of employment opportunities. Across different urban areas, the transport network connects largely dispersed hubs of local development in the Italian urban system, characterized for historical and geographical reasons, by an inherent polycentrism. The functioning of the infrastructural networks does not depend solely on the financial and organizational ability to carry out large infrastructural investment projects. The effectiveness of transport networks is not measured so much by their length in kilometres or the number of lanes on a given road, but rather by the capacity to exploit them by avoiding congestion or bottlenecks. In many cases, the most effective investment is not in the number of kilometres being paved or of rail tracks are being laid, but in

the ability to link portions of the network that were previously disconnected (or hampered by bottlenecks). Governing the access to the network, moving beyond old taboos that it should always and invariably be free of charge, is often more important than the mere physical surface covered by the network. This is especially important in the central areas of cities. Significant changes will presumably come in this domain from a series of innovations which will blur the clear-cut distinction between public transport (running on timetables) and private transport (flexible because it is managed by the individual users, but by definition more costly when measured against the same amount of space occupied), owing to the emergence of new operators and new ways in which the supply and demand of transport services will be expressed (e.g. car rental, on-demand services, and driverless vehicles). These phenomena will require a smart governance at national and global level as well as in the individual urban centres.

Incidentally, transport services are the typical case that highlights how the administrative governance of a city on the basis of municipal boundaries is in many ways out of touch with the underlying economic and social reality. The extension of commuting areas is obviously not limited by municipal boundaries, therefore governance at municipal level is a source of problems (i.e. the issue of taxi licences). The same considerations apply to many more services – for instance the nimbyism in the location of landfills and incinerators in the management of urban waste – and for urban planning in general.

However, the services relevant to the development of an urban area are not only those concerning transport vehicles and infrastructures. Especially in the current conditions in which economic and production systems find themselves, a city's innovative capacity is often tied to the presence of research institutions. Without going into detail on a topic – the functioning of the university system – that is outside the scope of the research summarized here, some essential aspects revolve around the capacity of the best universities to emerge as poles of attraction in one or more scientific domains and to establish fruitful links with local firms, acting as an incubator for innovative firms and start-ups. It will be hard for a vast area such as Southern Italy to feature cities able to act as catalysers of development unless there is an emergence of first-class universities within the local university system.

References

- Accetturo A., M. Cascarano and G. de Blasio (2018a): "Pirates' attacks and the shape of the Italian urban system", mimeo.
- Accetturo A., M. Cascarano and G. de Blasio (2018b): "Population growth and structural change: Italy, 1951-2011", mimeo.
- Accetturo, A., A. Lamorgese, S. Mocetti and D. Pellegrino (2018c): "Housing Supply Elasticity and Growth: Evidence from Italian Cities", mimeo.
- Accetturo, A., F. Manaresi, S. Mocetti and E. Olivieri (2014): "Don't Stand so Close to Me: the Urban Impact of Immigration", *Regional Science and Urban Economics*, vol. 45, pp. 45-56.
- Accetturo, A. and S. Mocetti (2019): "Historical origins and development of Italian cities", *Italian Economic Journal*, vol. 5, n. 2.
- Andini, M., G. de Blasio, G. Duranton and W. Strange, (2013): "Marshallian labour market pooling: Evidence from Italy", *Regional Science and Urban Economics*, vol. 43, pp. 1008-1022.
- Bairoch, P, Batou, J. and P. Chèvre (1988): "La population des villes européennes de 800 à 1850", Genève: Librairie Droz.
- Ballatore R.M. and V. Mariani (2019): "Human capital differentials across urban and rural areas in Italy. The role of migrations", *Italian Economic Journal*, vol. 5, n. 2.
- Bleakely H. and J. Lin (2015): "History and the Sizes of the Cities", *American Economic Review*, vol. 105, pp. 558-563.
- Bosker M., S. Brakman, H. Garretsen, H. de Jong and M. Schramm (2008): "Ports, Plagues and Politics: Explaining Italian city growth 1300-1861", *European Review of Economic History*, vol. 12, pp. 97-131.
- Budiakivska, V. and L. Casolaro (2018): "Please in my Back Yard: The Impact of a New Tramline on Property Values in Florence", Bank of Italy working paper n. 1161.
- Caldera, A. and Å. Johansson (2013): "The Price Responsiveness of Housing Supply in OECD Countries", *Journal of Housing Economics*, vol. 22, pp. 231-249.
- Cannari, L., G. D'Alessio and G. Vecchi (2016): "I prezzi delle abitazioni in Italia, 1927-2012", Bank of Italy occasional paper n. 333.
- Cascarano, M., S. Di Addario and A. Lamorgese (2018): "Do inventors obtain a premium in urban areas? Evidence from matched employer-employee data", mimeo.
- Castells-Quintana, D. (2017): "Malthus living in a slum: Urban concentration, infrastructure and economic growth," *Journal of Urban Economics*, vol. 98, pp. 158-173.

- Cervellati M., S. Lazzaroni, G. Prarolo and P. Vanin (2018): "Sovereign Polities, Territorial Control and City Growth in Pre-Industrial Europe, 1000-1800", mimeo.
- Ciani E., F. David and G. de Blasio (2017): "Local labour market heterogeneity in Italy: estimates and simulations using responses to labour demand shocks", Bank of Italy working paper n. 1112.
- Combes, P.-P., Duranton, G., Gobillon, L. and Roux, S. (2010): "Estimating Agglomeration Economies with History, Geography, and Worker Effects". In *Agglomeration Economics*, National Bureau of Economic Research, Inc.
- Dalmazzo, A. and de Blasio, G., (2011): "Amenities and skill-biased agglomeration effects: Some results on Italian cities", *Papers in Regional Science*, vol. 90, pp. 503-527.
- De la Roca, J. and Puga, D., (2017): "Learning by working in big cities", *The Review of Economic Studies*, vol. 84, pp. 106-142.
- Desmet K. and J. Rappoport (2017): "The Settlement of the United States, 1800-2000: The Long Transition to Gibrat's Law", *Journal of Urban Economics*, vol. 98, pp. 50-68.
- Dincecco M. and M. Onorato (2016): "Military conflict and the rise of urban Europe", *Journal of Economic Growth*, vol. 21, pp. 259-282.
- Duranton, G., and D. Puga (2001): "Nursery Cities: Urban Diversity, Process Innovation, and the Life Cycle of Products", *American Economic Review*, vol. 91, pp. 1454-1477.
- Duranton G. and D. Puga (2004): "Micro-foundations of urban agglomeration economies", in *Handbook of Regional and Urban Economics*, Elsevier North-Holland, Amsterdam.
- Duranton G., P. Morrow and M. Turner (2014): "Roads and Trade: Evidence from the US", *Review of Economic Studies*, vol. 81, pp. 681-724.
- Frick S. and A. Rogriguez-Pose (2018): "Big or Small Cities? On city size and economic growth", *Growth and Change*, vol. 49, pp. 4-32.
- Giffoni F., M. Gomellini and D. Pellegrino (2017): "Capitale umano and crescita urbana in Italia 1981-2001", Bank of Italy working paper n. 1127.
- Glaeser, E. L., H. D., Kallal, J. Scheinkman and A. Shleifer, (1992): "Growth in Cities", *Journal of Political Economy*, vol. 100, pp. 1126-52
- Glaeser E. L., (1999): "Learning in Cities", *Journal of Urban Economics*, vol. 46, pp. 254-277.
- Glaeser E. L. (2011): "Triumph of the City", New York: Penguin Press.
- Henderson V., T. Squires, A. Storeygard and D. Weil (2019): "Spatial Distribution of Economic Activity: Nature, History, and the Role of Trade", *Quarterly Journal of Economics*, forthcoming.

- Hohenberg, P.M. (2004): "The Historical Geography of European Cities", in *Handbook of Regional and Urban Economics*, Elsevier North-Holland, Amsterdam.
- Hsieh C. and E. Moretti (2018): "Housing Constraints and Spatial Misallocation", *American Economic Journal: Macroeconomics*, forthcoming.
- Knoll, K., M. Schularick and T. Steger (2017): "No Price Like Home: Global House Prices, 1870-2012", *American Economic Review*, vol. 107, pp. 331-353.
- Lamorgese A. and A. Petrella (2019): "Stylized facts on Italian cities", *Italian Economic Journal*, vol. 5, n. 2.
- Lamorgese, A., E. Olivieri and M. Paccagnella (2019): "The wage premium of Italian cities", *Italian Economic Journal*, vol. 5, n. 2.
- Loschiavo, D. (2018): "Big city life (dis)satisfaction? The effect of living in urban areas on subjective well-being", mimeo.
- Lucas, R.E. (1988): "On the mechanics economic development", *Journal of Monetary Economics*, vol. 12, pp. 3-42
- Malanima, P. (2005): "Urbanisation and the Italian economy during the last millennium", *European Review of Economic History*, vol. 9, pp. 97-122.
- Manzoli, E. and S. Mocetti (2019): "The house price gradient: evidence from Italian cities", *Italian Economic Journal*, vol. 5, n. 2.
- Melo, P., D. Graham and R. Noland (2009): "A meta-analysis of estimates of urban agglomeration economies", *Regional Science and Urban Economics*, vol. 39, pp. 332-342,
- Michaels G. and F. Rauch (2018): "Resetting the Urban Network: 117-2012", *Economic Journal*, vol. 128, pp. 378-412.
- Michaels, G., Rauch, F. and Redding, S. (2012): "Urbanization and structural transformation", *Quarterly Journal of Economics*, vol. 127, pp. 535-586.
- Saiz, A. (2010): "The Geographic Determinants of Housing Supply", *Quarterly Journal of Economics*, vol. 125, pp. 1253-1296.