



Re-defining the Boundaries of Major Italian Cities

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► To cite this version:

Antonio G. Calafati, Paolo Veneri. Re-defining the Boundaries of Major Italian Cities. Regional Studies, 2011, pp.1. <10.1080/00343404.2011.587798>. <hal-00724180>

HAL Id: hal-00724180

<https://hal.science/hal-00724180v1>

Submitted on 19 Aug 2012

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HAL Authorization



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Journal:	<i>Regional Studies</i>
Manuscript ID:	CRES-2010-0148.R1
Manuscript Type:	Main Section
JEL codes:	R11 - Regional Economic Activity: Growth, Development, and Changes < R1 - General Regional Economics < R - Urban, Rural, and Regional Economics, R12 - Size and Spatial Distributions of Regional Economic Activity < R1 - General Regional Economics < R - Urban, Rural, and Regional Economics, R23 - Regional Migration Regional Labor Markets Population < R2 - Household Analysis < R - Urban, Rural, and Regional Economics, R38 - Government Policies Regulatory Policies < R3 - Production Analysis and Firm Location < R - Urban, Rural, and Regional Economics
Keywords:	City, Metropolitan area, Coalescence, City de facto

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RE-DEFINING THE BOUNDARIES OF MAJOR ITALIAN CITIES

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(Received May 2010: in revised form April 2011)

The processes of spatial polarisation and territorial integration that have taken place in Italy since the 1950s have not been accompanied by corresponding institutional adaptations, generating the current huge discrepancy between the functional and political-administrative organisation of the territory. As argued in the paper, this institutional lock-in is rooted in a mistaken conceptualisation of territorial integration, which has focused solely on the identification of the emerging 'functional urban areas', neglecting the fundamental phenomenon of the formation of inter-municipal territorial systems which have acquired the nature of cities *de facto*. On the basis of both functional and morphological features, the paper identifies the cities *de facto* with regard to the eight largest Italian cities *de jure*.

City	City <i>de facto</i>	Metropolitan area	Coalescence
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JEL Classifications: R11, R12, R23, R38

INTRODUCTION

A deep and widespread discrepancy between the political-administrative and functional organisation of territory characterises contemporary Italy. It has been generated by what may be called 'territorial coalescence without institutional coalescence'. In fact, the intense processes of spatial polarisation and territorial integration that have taken place since the 1950s have not been accompanied by corresponding institutional adaptations. The spatial organisation of the political-administrative system has not been changed, nor have consistent forms of governance for the emerging functional urban areas been introduced.

The current discrepancy between the functional and political-administrative organisation of the territory has been generated by a lock-in in the evolution of the institutions on which the policy-making process at local level is based. It is argued in this paper that an important step in getting out of this lock-in would be to go beyond the conceptualisation of territorial integration that has prevailed. To date, the analytical focus has been exclusively on the identification of 'functional urban areas', whereas the fundamental issue of the formation of 'cities *de facto*' has remained unaddressed.

If a clear distinction had been drawn between the formation of cities *de facto* and the formation of metropolitan areas, it would have become evident that a further critical distinction was necessary between, on the one hand, expanding the administrative boundaries of cities *de jure* to make them overlap with cities *de facto* and, on the other, designing appropriate governance schemes for the corresponding metropolitan areas.

The aim of this paper is to explore, in the cases of the eight largest Italian cities (Rome, Milan, Turin, Florence, Bologna, Naples, Palermo, Genoa), the relationship between cities *de jure* and their territories. It will be argued that the cities *de jure* examined have coalesced with a set of contiguous municipalities. The ensuing cities *de facto* are the key territorial actors of the Italian economy, representing 18.6% and 25.1% of total Italian population and employment respectively, while covering only 3% of the territory.¹

The paper is organised as follows. The next section deals with the main interpretations of territorial coalescence put forward in Italy. The third section focuses on the lock-in that has characterised Italy with regard to its regional

governance mechanisms. The fourth section proposes a new perspective on the Italian territory, and in particular suggests distinguishing ‘cities *de facto*’ from ‘functional urban areas’ in the conceptualisation of the territory. The fifth section puts forward the main hypothesis about the cities *de facto* corresponding to the eight largest Italian cities, on which the analysis is focused. The sixth section discusses the empirical evidence with which to corroborate the hypothesis advanced in the previous section. Finally, policy implications are drawn and some concluding remarks are made.

INTERPRETING TERRITORIAL COALESCENCE IN ITALY

How the new territorial organisation of society should be conceptualised has been a question debated in the Italian social science community since the 1970s (cf. CALAFATI, 2009b). The implications of territorial integration for the suitability of the rules shaping local policy-making processes have also been extensively addressed. Yet the positive and normative analyses conducted to date have not cross-bred. And after five decades of profound territorial transformation – so profound as to be unparalleled in Europe – and three decades of extensive discussion, Italy still lacks a shared spatial conceptualisation of its territory and a scheme for reform of the local policy-making process.

The Italian industrial take-off in the decades between 1950 and 1980, and the ensuing large redistribution and concentration of population and employment,

brought about an extraordinary change in the spatial organisation of the economic and social process. What amounted to an outright ‘territorial revolution’ started to attract scientific attention in the mid-1970s, along three quite different lines of inquiry. Firstly, particularly in relation to the ‘industrial districts question’, there came about a shift of focus from ‘regions’ to ‘local systems’ in industrial and regional economics (BECATTINI, 1979; CALAFATI, 2002; 2009a). Secondly, repeated identification exercises were performed on Italian ‘metropolitan areas’. A third line of inquiry, also quite influential and developed mostly by economic geographers and urban planners, focused on identification of ‘territorial networks’.

Stimulated by the emerging research programme of the ‘economics of local development’ the Italian Statistical Office (ISTAT) addressed the issue of territorial coalescence by drawing up a map of Italy in terms of ‘functional areas’ (ISTAT-IRPET, 1989). This map, which ISTAT updated twice in the subsequent decades (ISTAT, 1997; 2005), established a new way to conceptualise the Italian territory.

ISTAT's conceptualisation drew on the English analysis of ‘daily urban systems (DUS)’ (COOMBES *et al.*, 1979; DREWETT *et al.*, 1976), which in its turn followed the work by BERRY (1973) on the United States. The elementary units of the ISTAT’s map consist by definition of ‘functional areas’ which are invariably ‘clusters of contiguous municipalities’. These are referred to in the literature as ‘local systems’ – or, more precisely, as ‘Local Labour Systems’ (LLSs) – because the key information used by the algorithm to generate them consists in data on travel-to-work commuting. The map of LLSs drawn by ISTAT

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4 was extensively used. A large number of territorial comparative studies were
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6 conducted which adopted LLSs as units of analysis, this being the case of most
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8 comparative studies on 'industrial districts' (CAINELLI *et al.*, 2006; SIGNORINI,
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10 2000).
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14 Another noteworthy line of analysis sought to identify a more specific type of
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16 'functional areas', namely 'metropolitan areas'. The first notable work in this
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18 strand of the Italian literature was that by CAFIERO and BUSCA (1970), who
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20 identified 32 metropolitan areas on the basis of morphological criteria like
21
22 absolute population, employment, and residential density thresholds for a set of
23
24 contiguous municipalities. Two decades later, CECCHINI (1988) and BARTALETTI
25
26 (1992) used similar criteria to identify 39 and 29 metropolitan areas
27
28 respectively. Other identification exercises, again conducted from a
29
30 morphological perspective, were those by VITALI (1990) and MARCHESE (1997).
31
32 Recently, the Italian Central Statistical Office (ISTAT, 2008) has proposed a map
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34 of Italy plotted in terms of 'metropolitan regions'. Up to 41 'metropolitan regions'
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36 are proposed, each conceived as a cluster of previously identified 'local labour
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38 systems' (according to ISTAT's 2005 map). In a recent work, BOIX and VENERI
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40 (2009) have made a further attempt to identify Italian metropolitan areas by
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42 applying the algorithm of Gemaca II (BRUNEL, 2002) and a new specification of
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44 the same algorithm as proposed by the U.S. Federal Register (OFFICE OF
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46 MANAGEMENT AND BUDGET, 1990), generating the so-called 'Dynamic
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48 Metropolitan Area' (DMA).
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57 The third line of inquiry with regard to the changing organisation of the Italian
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59 territory focused on the identification of territorial networks and on their
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4 evolution. This approach was concerned mainly with change in the strength and
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6 nature of territorial relationships, rather than on the evolution of the territorial
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8 nodes. It was developed along two quite different routes. Firstly, encompassing
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10 explorations of the whole Italian territory were conducted from this perspective –
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12 the most notable being CLEMENTI, DEMATTEIS and PALERMO (1996) as well as
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14 BONAVERO, DEMATTEIS and SFORZI (1999). These analyses were intended to
15
16 furnish an analytical basis for the planning of infrastructural investments at the
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18 macro-regional and national scale – a policy question of great importance in
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20 Italy. The institutional counterparts of this approach were coordination between
21
22 different tiers of government and inter-municipal co-operation. Inter-municipal
23
24 co-operation was also the institutional counterpart of the analysis of territorial
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26 integration conducted by urban planners while devising spatial development
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28 plans for the major Italian cities. These analyses invariably underlined territorial
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30 integration and ended up proposing flexible and project-based forms of inter-
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32 municipal planning.
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AN INSTITUTIONAL LOCK-IN

Notwithstanding acknowledgement of territorial integration as a critical
phenomenon – and notwithstanding widespread scientific debate on inter-
municipal planning prompted in particular by the third line of inquiry –, the
spatial organisation of the Italian policy-making process has not undergone any
major revision or change. Firstly, the administrative boundaries of the Italian

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4 cities, which date back to the early nineteenth century (FERLAINO and MOLINARI,
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6 2009), have remained unchanged; secondly, metropolitan areas have not been
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8 established as 'policy units'; thirdly, no stable or significant re-allocation of
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10 political power among cities and inter-municipal coalitions (in the rare cases in
11
12 which they have been established) has been accomplished.
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16 Formally, the question of 'institutional coalescence' as a response to
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18 'territorial coalescence' received significant political recognition in Italy with law
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20 no. 142/1990 – which promised to be a turning point in the country's political-
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22 administrative history; it was followed by other laws issued during the 1990s
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24 and the 2000s.² With regard to the spatial organisation of the policy-making
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26 process, these laws were intended to pave the way to a number of meta-
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28 institutional changes of critical importance. On the one hand, the law n.
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30 142/1990 identified nine potential metropolitan areas (Turin, Milan, Venice,
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32 Genoa, Bologna, Florence, Rome, Bari, Naples) – although it made no
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34 reference to their possible boundaries – and it conceived strong coordination
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36 powers for them. On the other hand, it introduced into Italian legislation a
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38 number of legal instruments that could be used to grant political power to new
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40 political-administrative units – and also to temporary 'territorial coalitions' that
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42 could be built with all the requisite flexibility in terms of procedures and the
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44 meta-objectives pursued. These new political-administrative agents were
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46 supposed to take the form of binding agreements on strategic issues or of
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48 complete institutional integrations (mergers) among contiguous municipalities.
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56 The Italian legislation implicitly raised two quite different-policy questions:
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58 firstly, establishment of 'metropolitan areas' by granting them political power – in
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particular, in strategic and spatial planning; secondly, institutionalisation of clusters of contiguous municipalities. Two scientific questions were associated with these two policy questions. On the one hand, endowing metropolitan areas with a governance mechanism would first require their identification. On the other hand, introducing the possibility of incorporations and mergers through a bottom-up process would require the identification of the cities *de facto* generated by territorial coalescence.

The question of identifying metropolitan areas attracted some attention and then disappeared from the Italian scientific debate, and no effort was made to produce a shared map (COSTA and TONIOLO, 1992; CAMAGNI and LOMBARDO, 1999; MARTINOTTI, 1999). ISTAT's LLSs have been never seen as approximations of new political-administrative units. In fact, LLSs, despite being occasionally proposed for the NUTS 4 territorial level, have been interpreted neither as the new cities *de facto* nor as metropolitan areas nor as the territory of potential policy coalitions.

While focusing on the conceptualisation of the emerging patterns of territorial integration, no effort has been made to discuss the appropriateness of the boundaries of the extant legal cities. The fundamental issue of merging contiguous municipalities – raised by the aforementioned laws – when fully integrated, both spatially and relationally, has remained without a scientific frame of reference. And this notwithstanding the fact that the institutional acknowledgment of cities *de facto* through the expansion of the boundaries of the corresponding cities *de jure* has certainly not been a rare occurrence in Europe during the past century.³

IDENTIFYING CITIES *DE FACTO*

Practically all clustering procedures applied in Italy to identify 'functional areas' share the same weakness: the inner territorial organisation of the functional areas identified (local systems) is not explicitly examined and discussed. The remarkable differences in the degree of territorial integration to be found in any cluster are not explored, and they play no role in the conceptualisation of coalescence processes. Analysing the inner territorial integration of functional urban areas would instead be necessary, given the nature of clustering procedures. In fact, by definition, these generate clusters that may comprise municipalities with very different degrees of integration with each other (including the pivot cities). This point has been overlooked in the scientific discussion. In fact, contiguous municipalities – as has so often happened in urban history – may not simply 'integrate' with one another; rather, they may 'melt into' each other, generating what are new cities.

The clustering procedures leading to identification of the 'functional areas' of the Italian territory have taken the pivotal units for granted. The territories around them have been scanned to assess whether the degree of integration with the pivotal cities is above a given threshold, but the information gathered by means of this scanning process has not been used to question the appropriateness of the legal boundaries of the pivotal units. In this paper it is suggested that an appropriate strategy with which to conceptualise the Italian

territory would be to shift – as a first step – from Figure 1a to Figure 1b, which refer to two different why-questions. When identifying a functional urban area, it should not be taken for granted – as has happened to date in Italy (but also in many other European countries) – that its urban core is the corresponding legal city (Fig. 1a). Instead, it should be borne in mind that the urban core may comprise a cluster of municipalities (Fig. 1b).

[Figure 1]

A city *de facto* is a territorial system that from both a functional and a morphological perspective is a city – even though it may not have a political-administrative recognition. As recently argued by PARR (2007), a city *de facto* is different from a generic ‘functional urban area’ – like a travel-to-work area or a ‘metropolitan area’. The notion of city *de facto* is proposed in this paper as a step forward in the categorical system to be used in the conceptualisation of territory.

In order to understand its significance, the category of city *de facto* may be confronted with that of ‘functional urban region’ (FUR), understood here as a variant of the more general concept of metropolitan area, as proposed to conceptualise the European territory by HALL and HAY (1980) and subsequently used in various comparative studies on the performances of European metropolitan areas (CHESHIRE and HAY, 1989; CHESHIRE and MAGRINI, 2006; 2009). According to CHESHIRE and HAY (1989, p. 15), the FUR attempts to capture the entire economic sphere of influence of a city and it is composed of a

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4 core, where people and employment concentrates, and a commuting hinterland.
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6 Therefore, as proposed in this paper, FUR and cities *de facto* are
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8 complementary concepts in the sense that the city *de facto* may be seen as the
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10 urban core of the corresponding FUR. Moreover, both concepts find their
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12 theoretical foundation in Christaller's theory of central places (CHRISTALLER,
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14 1933), since their definition starts with identification of the territorial centralities.
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19 FURs are much wider territorial units than cities *de facto*, since they also
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21 include the relatively weakly connected hinterland. On the other hand, LLSs and
22
23 DUSs are spatial units different from FURs. In fact, they cover all national
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25 territories and they are built by means of an inductive procedure where
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27 centralities play a lesser role. Their theoretical foundation rests mainly on the
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29 time-geography of HÄGERSTRAND (1970), with much less emphasis on the
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31 hierarchical structure of the territory. A city's kind of socio-economic integration
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33 – hence a city *de facto* – is characterised by a complex set of relational
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35 interdependences that generate urban agglomeration economies and cannot be
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37 reduced to commuting flows patterns alone (DURANTON and PUGA, 2004; BODE,
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39 2008).
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45 A city *de facto* is similar to a 'built city' (PARR, 2007) to the extent that spatial
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47 and social proximity shapes the interaction patterns of its residents. The
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49 difference lies in the fact that cities *de facto* are 'dispersed' cities that have
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51 emerged from processes of territorial coalescence between a pivotal
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53 municipality and its neighbouring ones located in the rings. Since GEDDES
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55 (1915) introduced the category of 'conurbation', the shift from the 'compact' to
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57 the 'dispersed' spatial organisation of metropolises has become a central issue
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4 in urban studies (LANG and KNOX, 2009). What has certainly not been
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6 acknowledged in the Italian scientific and policy debate is that emphasis on the
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8 relational dimension of cities – and acceptance of their dispersed nature –
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10 would have required redefining cities' boundaries and reshaping their political-
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12 administrative systems (see Calafati and Mazzoni (2008) and Calafati (2011) for
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14 an exploration of Central Italy's territorial organisation and local economic
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16 performances from this perspective). In fact, when considering territorial
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18 development, one should distinguish between two different phenomena: on the
19
20 one hand, the expansion of cities in space; on the other, the formation of larger
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22 functional urban areas around them.
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28 The methodological perspective proposed here does not diminish the
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30 importance of conceptualising and identifying 'functional urban regions', 'city-
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32 regions' and 'mega-city regions' (HALL, 2009). It only highlights that at least in
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34 the Italian case – given the initial condition in terms of territorial organisation
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36 and given the territorial development trajectory that has been followed – the first
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38 step should have been to redefine functionally and reshape institutionally cities,
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40 that is the 'urban cores' of functional areas which emerged from territorial
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42 integration.
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47 Figure 2 proposes a very simple representation of the different spatial
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49 aggregates to which reference is usually made when discussing the functional
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51 organisation of the territory. Starting from the pivotal municipality – the legal
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53 city, in the case of Italy – which is located at the origin of the axes, and which is
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55 the most elementary spatial unit with the data available, the further one moves
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57 outwards the more the degree of integration between municipalities and their
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4 corresponding pivots decreases. It may be imagined that there exists a
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6 threshold, associated with a certain distance, in the degree of integration
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8 between the core and its surrounding municipalities that identifies the city *de*
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10 *facto*.
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18 [Figure 2]
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26 Point 'a' in Figure 2 indicates a threshold in the degree of integration between
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28 each pivot and its corresponding ring municipalities that identifies the city *de*
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30 *facto*. Below this threshold, the degree of integration is very strong and related
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32 to the typical interactions that take place within a single contemporary city. At
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34 this level, morphological aspects, internal functional organisation and integrity of
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36 social organisation play a significant role (SÝKORA and MULÍČEK, 2009). Above
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38 this threshold, the city *de facto* ends, but we are still in the same travel-to-work
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40 area – which in Italy can be approximated with the LLS. More distant from the
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42 centre, point 'b' marks the end of the LLS, which is only one part of a wider
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44 metropolitan area (FUR). A further functional unit, the city-region, could be
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46 added for particularly wide metropolitan contexts (HALL, 2009; PARR, 2008).
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51 If approached from a pragmatic perspective, the identification of the cities *de*
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53 *facto* may prove to be an exercise with a simple solution. The hypothesis put
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55 forward here with regard to the largest Italian cities is that the municipalities
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57 located in the first and second rings are so strongly integrated – in relational
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4 and spatial terms – with the corresponding pivotal cities *de jure* that, taken
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6 together, they constitute the new Italian cities. These are the new cities *de facto*
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8 to be turned into cities *de jure*, thus restoring a correspondence between
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10 functional and political-administrative structures.
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21 IDENTIFYING THE ITALIAN NEW CITIES: SETTING THE EMPIRICAL
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23 CONTEXT
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28 Against the background of the debate on the functional organisation of the
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30 Italian territory, let us now focus on six types of territorial units which seem
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32 relevant to setting the context for identification of the new boundaries of the
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34 Italian cities (see Table 1): a) the legal city; b) the legal city plus the first ring of
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36 municipalities; c) the legal city plus the first and second rings of municipalities
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38 (only municipalities belonging to the same LLS have been included in the rings);
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40 d) the local system identified by ISTAT (LLS); e) the Province (NUTS-3); f) the
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42 metropolitan area (FUR).
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47 Territorial units (a) and (e) have a ‘legal status’ that characterises them as
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49 ‘levels of government’ in the Italian political system; territorial units (d) and (f)
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51 have a functional status in the way they have been identified, but no level of
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53 government or governance corresponds to them. Territorial units (b) and (c)
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55 have not attracted any attention, being considered part of the corresponding
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4 'functional urban areas' (LLSs) – whereas, as it is maintained in this paper, they
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6 can approximate the city *de facto*.
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11 [TABLE 1]
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16 A glance at Table 1 suffices to discern two fundamental features of the Italian
17 territories surrounding the cities examined in this paper. Firstly to be noted is
18 how small the municipalities contiguous to the Italian largest cities are – in
19 terms of population and territorial extension – compared to the corresponding
20 pivotal cities. Secondly to be noted is how numerous are the municipalities in
21 the first and second rings – and in any corresponding functional territorial unit
22 (LLSs, FURs). These features raise two questions which will be discussed later
23 in the paper: a) the very low distance separating the urban settlements located
24 in the first and second rings from the 'focal points' of the pivotal city; b) the
25 marked difference in the economic and social strengths of the 'focal points' in
26 the pivot city – in terms of scale, variety and quality of the 'goods' offered –
27 when compared to the focal points located in the first and second rings.
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44 The case of Milan – Figure 3 – can be taken to exemplify some of the
45 questions raised above. The LLS of Milan, as defined by ISTAT, is composed of
46 115 municipalities, while the corresponding metropolitan area – identified
47 according to the FUR' algorithm (BOIX and VENERI 2009) – and the
48 corresponding province comprise 499 municipalities and 189 municipalities,
49 respectively. The city *de facto* identified by the cluster of municipalities made up
50 of the legal city and the municipalities in the first and second rings counts 45
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4 'small' units. The city *de facto* is significantly smaller in terms of territorial
5 extension than the two other functional aggregates (LLS and FUR) in which it is
6 embedded.
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14 [Fig. 3]
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18 A similar pattern of relationships between the city *de jure* and the
19 corresponding functional urban area, although constrained by its geography, is
20 exhibited by Naples – the third largest metropolitan area in Italy (Fig. 4). In this
21 case, the first and second rings comprise 26 municipalities – all embedded in
22 the corresponding LLS, which, in its turn, is embedded in the metropolitan area
23 (the LLS and the FUR of Naples count 37 and 125 municipalities, respectively).
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35 [Fig. 4]
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44 IDENTIFYING THE NEW CITIES IN ITALY: CORROBORATING THE
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46 HYPOTHESIS
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51 In order to corroborate the hypothesis put forward in the previous section
52 some empirical evidence is now discussed concerning the current organisation
53 – and its recent changes – of the territorial functional areas associated with the
54 eight largest Italian cities. The types of empirical evidence examined are (a)
55 distances among urban settlements, (b) commuting-to-work patterns, (c)
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changes in the spatial distribution of population and employment and (d) residential and employment density patterns.

The first step of the analysis is investigation of the first- and second-ring municipalities of the eight largest Italian cities in terms of their 'distance' from the legal cities. In this regard, it is necessary to qualify the concept of 'distance'. Firstly, one must refer to distance in this context as a 'cultural', not 'geometric', concept. Travel time, propensity to move, and technology of mobility are more relevant than physical distance when identifying the 'distance' from two points on a territory. Secondly, the relevant distance is the one separating the most important 'focal points' of the territory under scrutiny. Large cities have numerous focal points, and some of them are closer to the urban settlements located in the first- and second-ring municipalities than to the city centre (Fig. 5).

[Figure 5]

Distance is important for the analysis because it constrains peoples' circadian cycles and, therefore, the spatiality of their transaction patterns. As a consequence of mass car use, improvements in public transport and increases in transport infrastructures, there has been an increase in the average distances travelled by individuals on a daily basis. KARLSSON and OLSSON (2006, p. 1) state that the daily average distance travelled by Swedish people increased from half a kilometre in 1900 to 45 kilometres in 1999. Moreover, as highlighted by BRETAGNOLLE *et al.* (1999) and by CAMAGNI *et al.* (2002, p. 28), increases in

daily average distances have not been accompanied by increases in journey duration.

As to the length of the circadian cycles in the Italian cities, it might be considered the threshold of 25 kilometres, which, according to a recent survey by CENSIS (2008), is the daily average distance travelled by Italians. Since this value is an estimate of the entire Italian population, it seems reasonable to assume that in large cities – like those examined here – the daily average distance is more than 25 kilometres.

Table 2 (a) shows the average physical distances from the city centre of each pivot to the city centres of their first- and second-ring municipalities. With the sole exception of Rome, which is distinguished by the unusually large size of its pivotal municipality, all the first-ring municipalities lie well within the territory identified by a 25-kilometre circadian cycle – which, as pointed out above, is a very cautious estimate of the distance travelled daily by the inhabitants of the large Italian cities. The same applies to the second-ring municipalities – with the sole exceptions of Genoa and Palermo, whose average distances from the pivot anyway never exceed 30 kilometres.

[TABLE 2]

On considering the distance issue from a perspective closer to that of firms and households, account should be taken of the time spent travelling. The last three columns in Table 3 (a) show the average times taken by commuters in 2001 to travel by car to their workplaces within cities *de facto*. With the sole and

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4 usual exception of Rome, all the municipalities in the first ring of each city *de*
5 *facto* are below a time-distance of 30 minutes. If also the second-ring
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7 municipalities are taken into account, the time spent travelling almost never
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9 exceeds 35 minutes. The analysis of 'cultural' distance may be concluded by
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11 stating that, in principle, the territory of the first and second rings of the eight
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13 Italian largest cities is likely to be part of the corresponding city *de facto*
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15 because it lies within what is the usual areal of individuals in modern society.
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21 On the basis of these findings on 'distance' in the functional urban areas of
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23 the largest Italian cities, it is now possible to proceed with the corroboration by
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25 using the available empirical evidence on the basis of the causal meta-model
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27 illustrated in Figure 6. It is possible to start by observing the intensity of the
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29 inter-municipal flows of commuters – both to workplaces and to commercial and
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31 socialisation sites – in the territorial systems that are considered as cities *de*
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33 *facto* and the extent to which these flows increased in the period 1980-2000.
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35 However, Italy started to collect data of this kind with the 1981 Census. The
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37 available data consequently do not measure the change in the commuting-to-
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39 work flows in the decades 1950-1980 – the decades during which the most
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41 profound territorial transformation occurred in these territories.
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52 [Fig. 6]
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57 Travel-to-work flows have been taken as measures of the current functional
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59 interconnections among the municipalities. The fourth column of Table 2 (c)
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shows the share of people that live and work within the city *de facto* (pivot plus first- and second-ring municipalities). The fifth column considers only people who live in the pivot and in the first ring and who also work in that same area. In all the cities examined, this index has values very close to 1, which suggests a strong pattern of interaction within each spatial aggregate.

Another way to investigate the functional interconnection within each city is to consider the degree of autonomy of each municipality in terms of employment (see Tab. 2 (c)). The majority of people who live in the rings work in the pivot, where the bulk of employment is located. In this sense, ring municipalities can be regarded as neighbourhoods of the same city, since their main activities take place in the pivot, which is close enough to be the major node where almost every map of individuals' territorial strategy intersects.

The shares of people living and working in the first ring municipalities range from 28% (Milan) to 39% (Rome and Palermo). Considering, instead, the shares of people living and working in the second-ring municipalities, one should note values ranging from 31% (Milan) to 53% (Palermo). Comparison between these data and the degree of self-containment of each city (Tab. 2 (c), fourth column) highlights that first-, – and to a lesser extent – second-ring municipalities are rather strongly integrated with the territory of the pivot municipality in functional terms. Again, this functional pattern of interaction, taken together with the territorial development trajectories previously discussed, is consistent with the hypothesis that ring municipalities are parts of a single wider city *de facto*.

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The Italian industrial take-off – and the ensuing strong polarisation of the economic process – took place during the first three decades after the Second World War. The highest increases in employment and population experienced by the functional urban areas examined occurred during those decades. In particular, the most remarkable increases were recorded by the first- and second-ring municipalities of the cities examined. Given the motorisation of the circadian cycles that made a substantial extension of the cycles themselves possible, these patterns of spatial development can be explained by the ‘short’ distance, as discussed above, from the focal points of the pivotal cities to the focal points of the surrounding territory.

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Table 2 (b) shows population and employment growth rates between 1951 and 2001 in the pivots, and in the municipalities located in their first and second rings. To be noted is that, while some pivots have experienced both population and employment decreases, municipalities located in the first and second rings have always recorded population and employment increases. A similar finding has been reported by EMANUEL (1999), who finds that dis-urbanisation processes from metropolitan cores do not indicate urban decline, but rather a diffusion of population and activities. Moreover, it can be observed that, with the sole exceptions of Genoa and Palermo, first-ring municipalities almost always display higher growth rates than second-ring municipalities. These findings are consistent with the thesis that pivot municipalities have expanded into their contiguous territories. The fact that some of them have experienced a reduction in employment and population, whereas first- and second-ring municipalities have always grown, together with the consideration that ring municipalities are

located within a distance where daily urban circadian cycles occur, is consistent with the hypothesis that cities *de facto*, in the cases under scrutiny, are much larger than their corresponding pivotal, legal cities.⁴ If one does not consider the existing legal boundaries, the territorialisation of the economic and social process can be interpreted as a process of ‘city construction’, accompanied by a new spatial organisation. This dispersion of cities in space is the standard spatial development trajectory so often observed in the history of cities, especially since mass motorization (SECCHI, 2005; BRUEGMANN, 2005).

The same point can be highlighted by looking at changes in population density within each city. Although residential density in absolute terms differs significantly among the eight cities examined, in 2001 each of them shows values of residential density which decrease smoothly with the distance from the pivot municipality (Tab. 2 (d)). Figure 7 plots the relation between residential densities and distance from the pivot municipality in the case of Turin (all the municipalities belonging to the same LLS). The figure illustrates that the density pattern is visually consistent with the simple negative exponential density function proposed by CLARK (1951), and with the idea of the monocentric urban spatial organisation. In fact, on moving away from the city centre, no particularly high residential-density place is observed. In particular, no density peaks seem to emerge in the proximity of the external border of the city.⁵

This empirical evidence obtained by examining the residential density function supports the idea that cities *de facto* are organised around one single centre (the pivot) and that no other urban centrality exists in their pertaining territories. Hence, the areas examined possess only one centre of power. This

may not be the case if one considers metropolitan areas, where polycentric patterns of development may be present (VENERI, 2010).

[Fig. 7]

Changes in residential densities between 1951 and 2001 occurred especially in the municipalities close to the pivots (Tab. 2 (d)). In fact, the increase in the density of first- and – to a lesser extent – second-ring municipalities made the 2001 density function higher than that of the 1950s (Fig. 7). Figure 7 shows that the density gradient in 2001 was steeper than in 1951, especially for municipalities closer to the centre. This finding seems consistent with the hypothesis of the formation – in the five decades considered – of wider cities through a process of territorial coalescence.

POLICY IMPLICATIONS AND CONCLUDING REMARKS

The paper has questioned the appropriateness of the extant administrative boundaries of the largest Italian cities. The first conclusion is that the Italian urban systems can no longer be represented by taking current cities *de jure* as the units of analysis. In so doing, one obtains a mistaken representation of the Italian urban landscape. The understanding of territorial performances in Italy,

and the outcome of any comparative exercise at the national and European scale, would be deeply distorted.

From a normative perspective the question raised in this paper is straightforward. Against the background of the foregoing analysis, two different questions should be carefully distinguished: the identification and institutionalisation of metropolitan areas (and metropolitan regions), on the one hand, and of cities *de facto*, on the other one. Territorial coalescence, in Italy – as everywhere in Europe – has raised the well-known question of identifying cities’ functional urban areas and establishing new governance mechanisms for them. As stressed in the paper this is a question extensively addressed at analytical level, even though only a few countries in Europe seem to have made important steps in the institutional acknowledgment of the new territorial patterns. But we have suggested that there is a question that should be addressed before identifying and introducing governance mechanisms for metropolitan areas: namely, the identification and institutionalisation of cities *de facto*.

Achieving this step would have important consequences on the policy-making process. As previously seen, cities *de facto* are significantly *larger* in terms of population and territory than cities *de jure*. Therefore, making cities *de jure* overlap with cities *de facto* would have two fundamental consequences. It would lead to: a) a significantly different policy agenda – different items and above all a different hierarchy of objectives; b) a significantly different “space of effects” in the evaluation of alternative collective choices, determining different allocations of the urban surplus. This would amount to a long-overdue change

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4 in the institutional fields within which agency takes form in Italian cities and
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6 urban development trajectories unfold – a question of great significance against
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8 the background of the strategic role that cities are asked to perform in the
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10 European space and of the increasing decentralisation of political power in
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12 Europe.
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TABLES

Table 1a Basic statistics, at different spatial levels, for the eight major Italian cities

	Main municipality	(a) + 1 st ring municip.	(b) + 2 nd ring munic.	LLS		NUTS3		FUR			
	(a)	(b)	n.*	(c)	n.	(d)	n.	(e)	n.	(f)	n.
Population											
Turin	865,263	1269725	14	1485146	38	1,684,336	88	2,165,619	315	2,000,018	215
Milan	1,256,211	1,852,320	22	2,416,471	45	2,975,754	115	3,707,210	189	5,249,727	499
Genoa	610,307	672,376	13	716,760	24	723,633	32	878,082	67	847,241	62
Bologna	371,217	540,013	10	645,448	21	723,366	32	915,225	60	907,764	56
Florence	356,118	543,511	6	654,411	14	677,196	19	933,860	44	1,197,190	51
Rome	2,546,804	3,113,130	29	3,294,292	51	3,374,511	70	3,700,424	122	4,338,854	239
Naples	1,004,500	1,556,532	14	2,009,307	27	2,235,602	37	3,059,196	92	3,512,698	125
Palermo	686,722	789,357	7	844,564	14	856,152	17	1,235,923	82	1,062,993	43
Employment											
Turin	412,067	576,848	14	660,406	38	724,413	88	887,085	315	826,479	215
Milan	808,642	1,093,324	22	1,318,406	45	1,541,171	115	1,790,042	189	2,390,954	499
Genoa	241,820	255,094	13	266,937	24	268,541	32	314,083	67	303,322	62
Bologna	206,088	298,861	10	350,478	21	375,157	32	446,451	60	442,561	56
Florence	199,678	276,074	6	315,109	14	323,441	19	417,896	44	528,145	51
Rome	1,098,172	1,255,450	29	1,286,231	51	1,300,482	70	1,369,044	122	1,538,633	239
Naples	328,116	426,327	14	488,314	27	536,292	37	690,830	92	778,587	125
Palermo	174,490	184,940	7	194,030	14	195,983	17	255,659	82	224,744	43

Table 1b

	Main municipality	(a) + 1 st ring municip.		(b) + 2 nd ring munic.		LLS		NUTS3		FUR	
	(a)	(b)	n.*	(c)	n.	(d)	n.	(e)	n.	(f)	n.
	Area (square kilometres)										
Turin	130.2	414.1	14	889.2	38	1,879.0	88	6,824	315	4,041.4	215
Milan	182.1	406.5	22	727.4	45	1,348.3	115	1,983	189	5,169.7	499
Genoa	243.6	540.6	13	759.1	24	930.4	32	1,840	67	1,549.8	62
Bologna	140.7	623.1	10	1,379.6	21	2,046.7	32	3,705	60	3,390.1	56
Florence	102.4	404.6	6	1,045.9	14	1,262.8	19	3,515	44	3,407.5	51
Rome	1,285.3	2,461.7	29	3,276.9	51	3,661.1	70	5,343	122	10,767.6	239
Naples	117.3	241.9	14	434.3	27	565.0	37	1,171	92	1,746.9	125
Palermo	158.9	854.6	7	1,135.2	14	1,176.4	17	4,989	82	2,169.3	43
	Density (population per square kilometre)										
Turin	6,647.2	3,066.2	14	1,670.2	38	896.4	88	317.4	315	494.9	215
Milan	6,899.6	4,556.8	22	3,322.1	45	2,207.0	115	1,869.5	189	1,015.5	499
Genoa	2,505.4	1,243.8	13	944.2	24	777.8	32	477.2	67	546.7	62
Bologna	2,637.8	866.7	10	467.9	21	353.4	32	247.0	60	267.8	56
Florence	3,477.4	1,343.3	6	625.7	14	536.3	19	265.7	44	351.3	51
Rome	1,981.5	1,264.6	29	1,005.3	51	921.7	70	692.6	122	403.0	239
Naples	8,565.7	6,434.6	14	4,626.5	27	3,957.2	37	2,612.5	92	2,010.8	125
Palermo	4,322.3	923.7	7	744.0	14	727.8	17	247.7	82	490.0	43

*Columns with 'n.' indicate the number of municipalities that are included in each specific territorial aggregate

Table 2 Physical and functional integration within the eight major Italian cities

a)	Distances (Kilometres)					
	Average distances from pivots to the rings			minutes travelled by car to:		
	entire city (1 st & 2 nd ring)	to 1 st rings only	to 2 nd rings only	entire city (1 st & 2 nd ring)	to 1 st rings only	to 2 nd rings only
Turin	14.7	11.5	17.1	25	24	31
Milan	13.3	11.3	15.8	28	28	32
Genoa	23.9	21.5	28.9	29	27	36
Bologna	17.6	13.0	23.4	23	21	30
Florence	15.1	11.1	20.0	25	24	30
Rome	34.3	30.9	40.5	36	34	43
Naples	12.7	11.7	14.8	28	27	33
Palermo	22.8	20.0	28.8	25	24	30

b)	Population and employment variations (1951-2001) - val. %							
	pivot	var. pop. 1951-2001			pivot	var. empl. 1951-2001		
		1 st ring	2 nd ring	entire city		1 st ring	2 nd ring	entire city
Turin	20.3	253.7	171.0	62.6	-8.8	373.6	366.2	40.9
Milan	-1.4	283.7	176.5	47.9	-2.8	313.4	257.9	44.0
Genoa	-11.4	15.9	20.7	-8.0	-20.3	73.2	58.6	-15.5
Bologna	9.0	132.3	21.0	29.0	35.1	934.6	523.1	131.2
Florence	-4.9	108.3	33.2	19.5	33.7	506.2	297.2	97.3
Rome	54.2	247.3	154.3	74.7	115.7	562.9	337.8	143.1
Naples	-0.6	191.9	117.6	42.7	13.0	480.2	222.8	56.5
Palermo	39.9	69.7	29.6	42.2	61.8	106.8	237.1	69.9

Table 2

c) Functional integration					
	Share of commuters that live and work in the same municipality			Share of commuters that live and work in the city de facto	
	pivot	1 st ring	2 nd ring	within city de facto	within 1 st ring
Turin	0.79	0.29	0.32	0.93	0.89
Milan	0.82	0.28	0.31	0.91	0.88
Genoa	0.95	0.29	0.36	0.97	0.96
Bologna	0.76	0.31	0.35	0.94	0.9
Florence	0.78	0.33	0.36	0.92	0.89
Rome	0.95	0.39	0.34	0.98	0.98
Naples	0.86	0.36	0.4	0.91	0.89
Palermo	0.95	0.39	0.53	0.97	0.96

d) Densities (population per square kilometre)						
	Average densities within cities			Density variation within cities (1951-2001) - val. %		
	density pivot	aver. dens. 1 st ring	aver. dens. 2 nd ring	Pivot	1 st ring	2 nd ring
Turin	6,647.2	1,487.5	489.6	20.3	294.8	184.4
Milan	6,899.6	3,169.6	1,973.2	-1.4	306.5	199.6
Genoa	2,505.4	276.9	338.1	-11.4	15.2	34.7
Bologna	2,637.8	499.6	147.7	9	155.6	25.5
Florence	3,477.4	676.2	258.4	-4.9	110.1	42.5
Rome	1,981.5	630.8	268.6	54.2	204.2	122.3
Naples	8,565.7	6,607.1	3,873.10	-0.6	201.5	111
Palermo	4,322.3	1,099.3	357.5	39.9	130	65

FIGURES

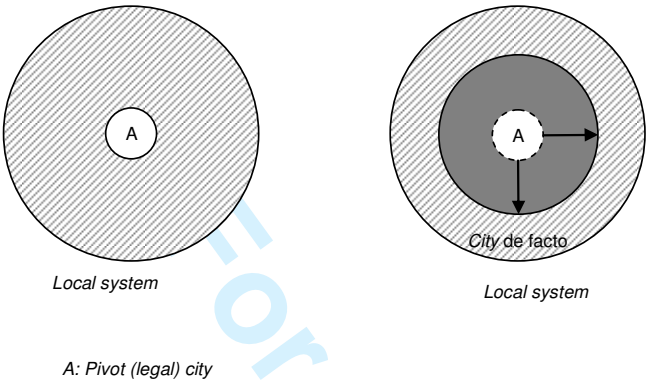


Fig. 1. The inner organisation of Italian local systems

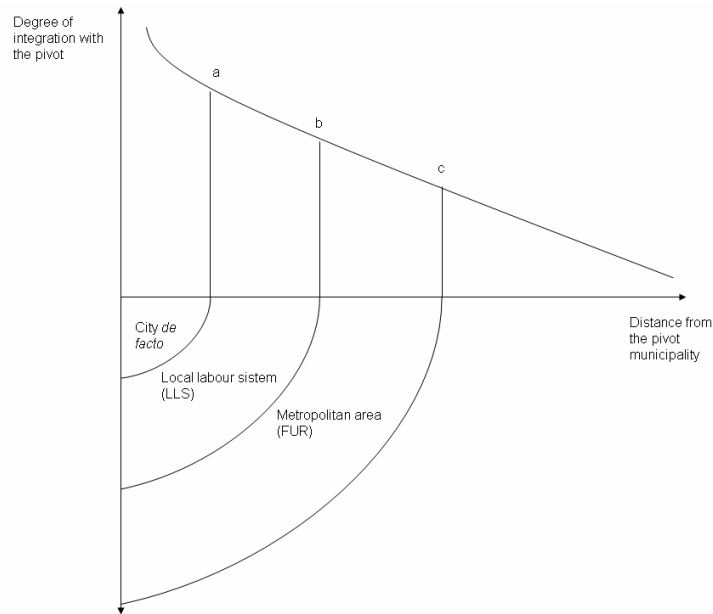


Fig. 2. Different spatial definitions of cities

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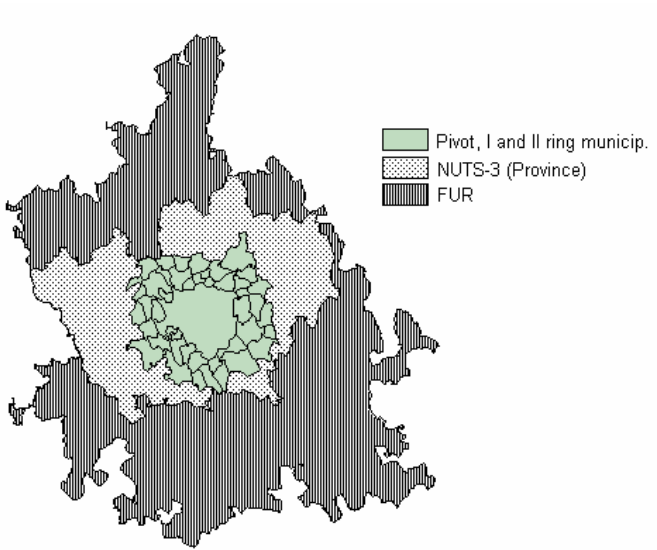


Fig. 3. Different spatial aggregates in the case of Milan

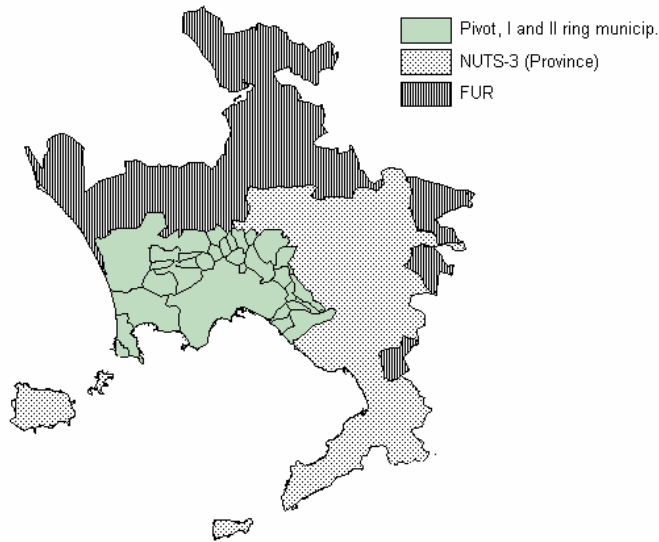


Fig. 4. Different spatial aggregates in the case of Naples

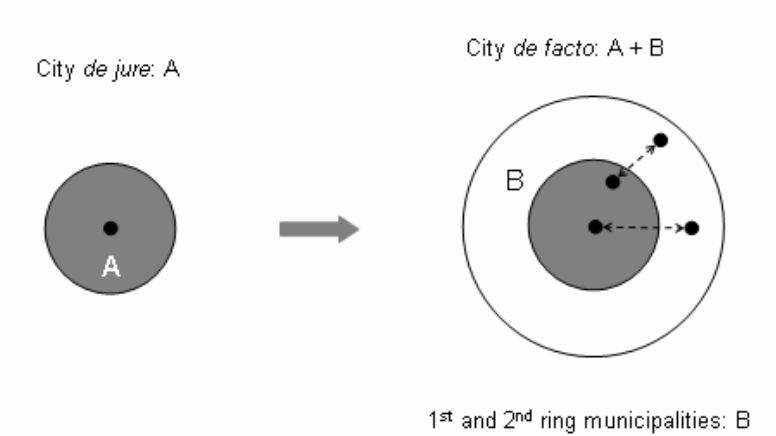


Fig. 5. City *de jure*, city *de facto* and focal points

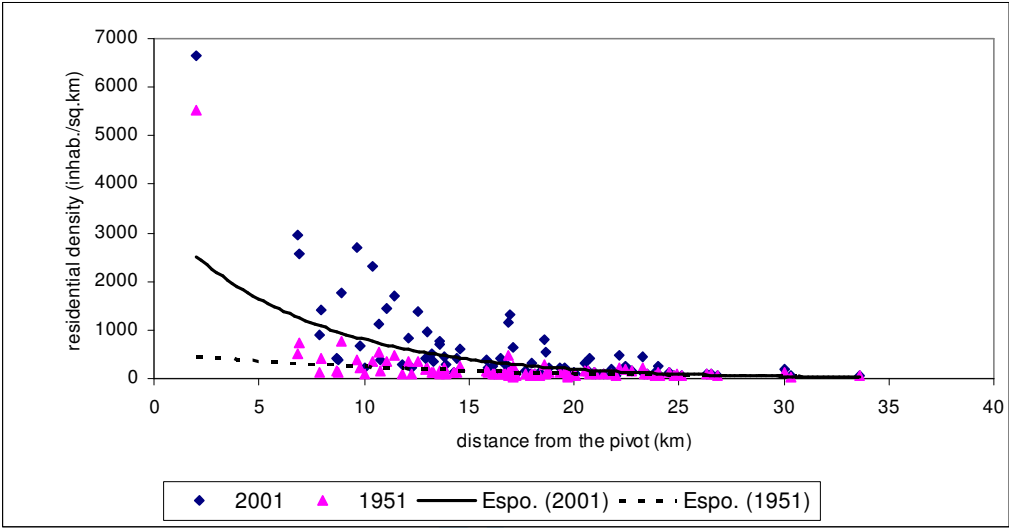


Fig. 7. Residential density and distance from the pivot in 1951 and 2001 – Turin

¹ By considering Functional Urban Regions (FURs) instead of cities *de facto*, the relevance of the areas analysed on the national economy increases significantly. In fact, the major eight FURs, taken together, represent 32.3% and 34.9% of total Italian population and employment, respectively, while covering 10.4% of the territory.

² Law no. 142/1990 was followed by other laws which more clearly and more coherently defined the 'powers' of metropolitan areas: law no. 112/1998, law no. 265/1999, law no. 267/2000 and law no. 42/2009.

³ In Germany especially, processes of territorial coalescence have very often led to the incorporation (*Eingemeindung*) of contiguous municipalities by large, growing cities (ZIMMERMANN 2004).

⁴ Much larger because, by including first- and second-ring municipalities, population increases by 37% on average, and territory by more than 300%.

⁵ Several methods are applied in the literature to identify metropolitan sub-centres. Most of them are based on density approaches (parametric and non-parametric), while others are based on interaction measures. For a recent review, see ROCA CLADERA *et al.* (2009).