

## SCIENTIFIC RESEARCH AND BEST PRACTICES FOR PUBLIC ADMINISTRATION

“*Territorio Italia: Governo del territorio, Catasto e Mercato immobiliare*” (Land Administration, Cadastre and Real Estate) replaces the “*Rivista dell’Agenzia del Territorio*” (Land Agency Magazine), which is characterised by its long-standing and consolidated tradition.

The new journal has been updated with regard to content; it also focuses on the change that has influenced the Agency’s activities - as well as the opportunities provided by the evolution of Information Technology (IT) - both in terms of favouring the rationalisation of the public administration and pursuing its own institutional aims, including fiscal equity, which are becoming increasingly integrated with land management and administration.

“*Territorio Italia*” is intended as a tool for dialogue between the University and the Public Administration in order to ensure that scientific research becomes increasingly supportive of policies and best practices in an international dimension which sees our country gaining an increasingly higher profile on the European stage. In today’s crisis, which is global in nature, research cannot continue to be directed toward its own ends or toward experimentation with highly developed models that are not transferable to reality. The University does not intend to be self-referencing; it feels the growing need to participate in the nation’s renewal in which the Agency can play an important role given its institutional responsibilities. In this light, with this new publication, the Agency opens to the university world and vice-versa, the University demonstrates its interest in collaborating in sectors within the Agency’s areas of responsibility which are held to be of great importance for the nation’s development.

In this historic moment of considerable difficulty, due to the profound nature of the changes taking place, the Cadastre is, first and foremost, of particular interest in terms of the demand for equity, also given the increasing scrutiny to which real estate taxation is being subjected. A second crucial question regards the transparency of the real estate market and, as a consequence, the monitoring of values and market dynamics, carried out by the OMI, real estate monitoring bodies, and the data banks of the Conservatories of Real Estate Registers. Finally, increasing importance is also placed on point and mass estimation and real estate assessment, a sector in which the Agency operates, taking into consideration the government’s programme for the divestment of state-owned property. During the last decade, the Cadastre’s cartographic and alphanumeric data banks, along with those of the Conservatory of Real Estate Registers and the real estate monitoring bodies (OMI), have been progressively organised through the use of GIS systems and interoperability. Thanks to the potential of Information Technology, the Land Agency’s data banks play an increasingly important role, with a value and potential going far beyond strictly institutional purposes precisely because they are organised in Land Information Systems. First, they can become the heart of “Land Administration Systems” characterised by the fact that they are integrated or integrable with many other different types of land information infrastructures in order to support land policies and administration on several levels, ranging from economics and taxation to environmental issues. Secondly, they are - in and of themselves - a fundamental infrastructure for processes that can enable the rationalisation of the public administration which, on different central and local levels, are responsible for land administration, monitoring, protection and

development, processes which can also have important effects in terms of linking together various land development and use policies.

As we can see by the title, the aim of the new journal is to draw attention to the extensive renewal which has taken place in recent years in the Italian system known as the “Cadastré, Real Estate Publicity and Real Estate Market Monitoring Body” thereby also providing the Agency with international visibility. More specifically, its purpose is to present an opportunity to compare “best practices” on an international level – starting with our own country – and provide access to scientific studies with highly innovative content incorporating multiple disciplines from information technology (IT) to economics, finance, mass estimates and point assessments; this has operational implications aimed at supporting the implementation of “best practices” or referring to processes of renewal and/or re-engineering of Land Information Systems based on the 2007 European Commission Inspire Directive which should be fully implemented by 2019. The purpose of “*Territorio Italia*” is to emphasise our country’s specificity and identity, as well as the wealth of its historic, architectural and environmental heritage as seen from a European perspective. Hence the decision to publish an English version of the journal and its English subtitle “Land Administration, Cadastré and Real Estate” outlining the main fields of interest and a new, highly transversal and multidisciplinary editorial project.

The first article, by Mauro Salvemini, draws attention to land administration through the evolution of e-government toward geo-government and the implications of geo-services with regard to the establishment of land infrastructure, also taking into account the Inspire Directive. Geo-government (geo-gov) anticipates the evolution of administrative services to better serve citizens, professionals or institutions involved in land protection, administration and development. The creation of “SDIs - Spatial Data Infrastructures,” bearing in mind the multiplicity of institutions with territorial jurisdictions, can produce remarkable benefits, for example establishing processes for the rationalisation and modernisation of the public administration, the structure of which will depend on the number and complexity of the public administration sectors involved.

Simone Ombuen draws our attention to the potential of GIS systems with regard to confronting cadastral information with planning information, precisely from the viewpoint of supporting fiscal and federalist policies through interoperability in terms not only of greater equity but also integrated land administration policies.

With Turin Polytechnic’s “*iVincoli*” project, Cristina Coscia demonstrates the importance of having the most transversal view possible when creating Land Information Systems, especially when it is necessary to consider a specific and localised administrative act, such as the one subjecting buildings of historical, architectural and environmental value in the city of Turin to planning and landmark restrictions. The prototype was based on the GIS of Turin’s real estate monitoring body (OICT), created in 1999 in order to define the city’s cadastral micro-areas and to monitor changes in real estate values and the dynamics of the real estate market. Georeferencing the planning constraints required by the Cultural Heritage Department was used as an opportunity not only to rationalise the administrative process by managing it online – with considerable advantage for private owners and

professionals – but also to increase the potential for protecting and monitoring historical buildings subject to restrictions and, finally, to promote cultural itineraries based on the historic-architectural characteristics of the designated and georeferenced buildings.

If the first three articles outline the relationship between Land Administration and Cadastre, the subsequent articles address topics of evaluation and the real estate market. Shanaka Herath and Gunther Maier propose an advancement of the hedonic pricing model which includes spatial and temporal variables, thus marking the transition from Hedonic Price Models (HPM), introduced by Rosen, to Spatial Panel Models, including the one developed by Mendelsohn. Based on these models, property prices are not only determined by a building's physical/construction characteristics, but also by spatial and temporal factors. If the subject of spatiality, seen as location and accessibility, has, in the same experiments conducted by the Agency, found solutions through the application of hedonic models to local micro-areas, the introduction of temporal variables is of particular interest from the point of view of the analysis and forecasting of real estate markets and evaluations. Through the introduction of temporal variables, it becomes possible to define the interdependence between real estate markets and macro-economic variables, meaning that it can be possible to identify the co-movement of prices when the latter change.

Gabriele Brondino (to whom the first issue of the magazine is dedicated and to whom a very special mention should also be given) deals with the statistical-mathematical conditions of direct estimation methods in an article written during the course of his short and distressing illness, after a brief exchange of ideas. Gabriele tackles the most crucial points of the methods which can be used in the event of a limited amount of sample data. He simplifies the discussion and considers errors relating to the similarity between the sample estimates and the object of the estimation, the impossibility of identifying all of the characteristics which influence prices and the incorrect definition of the function form. He takes into consideration Regression and Sales Comparison Approach (SCA) in order to underline the close mathematical similarity, but primarily to emphasise how the results obtained by Regression can be used as a starting point for the practical application of the SCA, in which the determination of marginal coefficients by surveyors would otherwise be compromised by large margins of subjectivity. He then draws our attention to new errors which are probable due to the use of marginal prices, linear approximation and the variability of prices with respect to market values, and introduces dispersion graphs, distance matrices and weight vectors in order to verify and improve the effectiveness of the SCA, going so far as to consider resorting to Monte Carlo simulation in order to face the uncertainty of the estimate when deterministic methods, such as the aforementioned SCA, are applied to situations in which multiple stochastic components interact.

The subject of forecasting in real estate estimation and evaluation, dealt with by Brondino, is considered by Bywaters and Thomas in terms of the market and prices, based on the theory regarding the formation and diffusion of expectations applied to data deriving from research carried out by the UK's Royal Institution of Chartered Surveyors. Price forecasting introduces approaches which, in the analysis of real estate markets, are of great interest in moments of crisis such as today's; nevertheless

these approaches have not been sufficiently developed in Italy or are generally considered in the sphere of time series. Therefore, there is great interest in the work by Bywaters and Thomas, who ground price forecasting on the expectations of professionals and surveyors working in the English real estate market on the basis of a logistic model of diffusion based on limited rationality and the interdependence of agents, a model which “could be used as an early warning system for the next season of economic swings and roundabouts.” In fact, there is a strong link between macro-economic variables, market dynamics and real estate values in the sense that the trend in the real estate market is closely connected to the dynamics of economy and finance.

Gianni Guerrieri, proceeding from information theory, draws our attention to the role of transparency in guaranteeing the efficiency of the real estate market, focusing also on the importance of knowledge in terms of macro-economics and finance. In fact, the limit in Italian research is that it takes into consideration the mechanisms of price formation irrespective of the dynamics of transactions and the economic and financial super-system. In 2010, Jones Lang LaSalle put Italy in 21st place at the bottom of the transparency index, an undoubtedly rearguard position even if it is an improvement on 23rd place in 2000. From this point of view, Guerrieri, as director of the Land Agency’s Real Estate Market Monitoring Body, illustrates the progress made and future projects aimed at improving information, which many still believe is not yet completely sufficient to guarantee the transparency of a market that – as economic theories maintain – constitutes a prerequisite for a state of equilibrium. The goal of transparency is easier to achieve for abstract markets and more difficult to pursue for real estate markets, fragmented on a level of supply and demand and made up of assets which differ widely, as in the case of Italy, due to physical-construction, historic-architectural, geographic and environmental characteristics.

Erika Ghirardo and Caterina Andreussi, on the other hand, present us with a cross-section of our country’s real estate market which is not based on values but hinges on the characteristics of buyers and sellers. The authors pay particular attention to transactions and the market’s social basis which, in Italy, is made up of families and is linked to a real estate property structure which has historically expanded to include the middle and lower-middle classes. Their sources are income tax returns and transcription notes of real estate publicity connected with transactions in order to associate residence, declared income, age, predominant employment, geographic origins and destinations, with particular focus on mobility, distinguishing between three market types - local, infra-provincial and extra-provincial - with a clear predominance in all regions of the first and with a certain statistical significance of the third especially in tourist areas. Specific analyses of Milan, Rome and Naples highlight these cities’ capacity to attract real estate investments both within and outside their respective regions.

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