



Factors influencing the value of houses: Estimates for the city of Cagliari, Italy



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ABSTRACT

The aim of this paper is to analyze the relationship between housing values and a set of determinants, related both to the urban environment and to the structural characteristics of the housing market, in the metropolitan area of Cagliari. In order to achieve this aim, a sample of residential properties spread across the urban context was taken into account. For every single residential unit we study the value of houses, identified as their estimated value, cadastral value, rent value, value supplied by the National Observatory on Real Estate Market, and finally sale value as related to factors which are identified as relevant variables in several studies concerning the real estate market.

The adopted approach implies data collection concerning value and characteristics of houses. The resulting dataset is geocoded and spatially analyzed, in order to identify spatial autocorrelation of the value of houses and its correlations with respect to the characteristics of houses through the hedonic approach.

The methodological approach can be easily replicated and exported with reference to other Italian and European urban contexts and results could be straightforwardly comparable. Policy implications of the findings could be a point of reference for future Italian and European planning policies concerning housing markets and the improvement of the quality of urban life.

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Introduction

Our interpretive point of view concerning the value of houses is that this value reflects the quality of urban life. The improvement or decline in the quality of urban life determines benefit or damage to homeowners, since they experience a change in the quality of life, and to landlords, who receive higher or lower rents. So, in our view the value of a house is essentially related to its character of a composite good, which is bought and sold in the housing market as a parcel of characteristics, which determine its market price (among many, Palmquist, 1984; Cheshire and Sheppard, 1995).

As a consequence, we propose to study the quality of life concerning an urban context through the analysis of the housing market where we observe equilibrium prices concerning purchases and sales of parcels of housing values's determinants. Such

determinants are grouped into four distinct categories as follows: (i) structural characteristics of the residential unit (such as unit size, distance from the shoreline, qualitative indexes accounting, inter alia, for the building age, the apartment level and the maintenance level); (ii) neighborhood demographic characteristics (such as residential density both in the census ward and in the city district in which the property is located, or the number of permanent foreign residents living in the district); (iii) plan-related characteristics (such as the presence of residential zones within a given distance from the property, proximity to parks or other green areas, and to common public services), and (iv) land cover types. In order to analyze the relationship between housing prices and the aforementioned potential constituent characteristics, we pursue an approach based on a hedonic model in order to figure out the general willingness to pay for a specific commodity among the municipal area of Cagliari (Sardinia).

This paper is organized as follows. In "Factors influencing the value of houses" section, we describe the five measures of the value of houses we adopt in our analysis that is, their estimated value, cadastral value, rent value, value supplied by the National Observatory on Real Estate Market, and sale value. In the following section, we discuss the set of variables that we use as determinants of the value of houses, that is:

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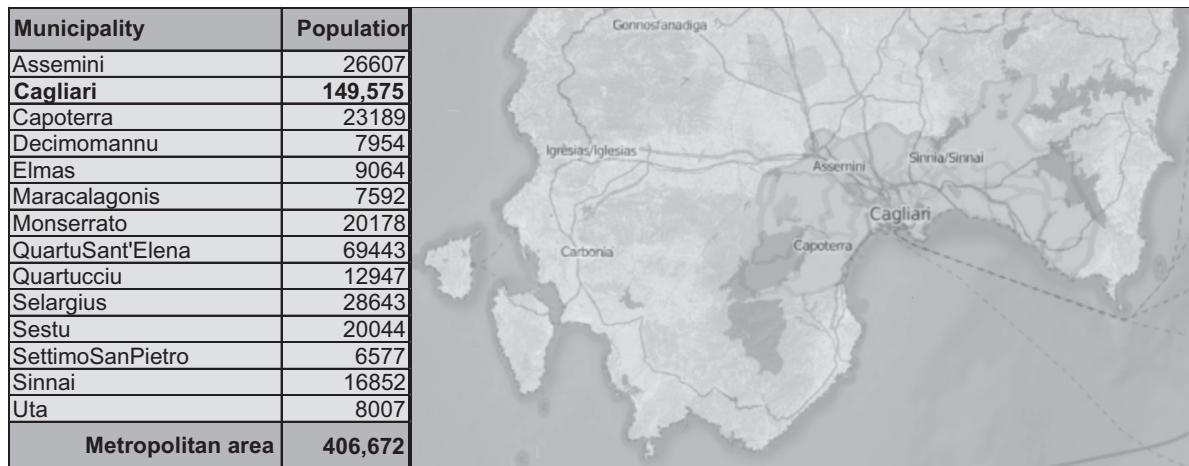


Fig. 1. Distribution (left) and extension (right) of the metropolitan area of Cagliari.

Source: ISTAT (2012).

- i. structural characteristics,
- ii. demographic characteristics,
- iii. plan-related characteristics, and
- iv. land cover types.

The “Results” section presents the hedonic methodology which we use to investigate the relations between the value of houses and its determinants.

The following section shows the results of the estimates of the hedonic regression models which use the value of houses and covariates in order to analyze if, and to what extent, the value of houses is related to the covariates altogether. Moreover, we compare the results concerning the different measures of the value of houses used as dependent variables in the hedonic regressions. In the concluding section, we discuss, through their hedonic prices, the influence of the determinants found relevant on the value of houses. This influence could be taken into account to define future planning policies to increase the quality of urban life. Exportability to other urban contexts and further developments of the research work are discussed as well.

Alternative measures of the value of houses

To provide a spatial approach to figure out the real estate market condition is problematic because of both the lack of literature on the topic (Boulay, 2012) and the expected uncertainty that characterizes such kind of analysis. After a general investigation on the national and regional housing market condition, we develop a methodology centered on the appraised market value of a sample of properties located in the main residential zones of the Municipality of Cagliari. The following sections refer to the description of the area of study and the adopted appraisal approach.

The metropolitan area of Cagliari

Cagliari is the capital and the major city of the second largest island of Italy and of the Mediterranean Sea (Sardinia). The island covers a total area of about 24,000 km² with an overall population of approximately 1,600,000 people in 2012. As shown in Fig. 1, around 150,000 inhabitants reside in the study area and about 250,000 in the surrounding municipalities (ISTAT). An international airport (Elmas) and one of the most important cruise and cargo port of the Mediterranean Sea provide the metropolitan area with an efficient transportation infrastructure. This feature, combined with the presence of conspicuous historical/landscape heritage, makes the

city attractive as tourist destination, as confirmed by the annual increase in the number of international travelers (+15.68%) registered in January 2014 by the airport managing company (SOGAER).³

The economy of the province of Cagliari is based, in order of importance, on trade and services, industry, and agriculture. In 2013, a note of the Bank of Italy reported a significant contraction of the regional GDP (−2.8%) and underlined the awful situation of the construction sector caused by both strong decrease in demand of new residential properties and reduction in public investments, as confirmed by the Sardinian section of the Italian association of building constructors (ANCE Sardegna, 2013), that registered that the sector had hit its worst state since the last 40 years. As exposed below, this economic condition is fully reflected in the current state of Cagliari's housing market.

Housing market analysis

The latest report published by the National Observatory on Real Estate Market (OMI, 2013) states that the Italian residential property market is experiencing a period of strong stagnation characterized by a significant decrease in the number of property transactions and by a slight reduction in market prices. The report does not consider specifically the metropolitan area of Cagliari, but contains some interesting observations at the regional level. During the period 2004–2012, Sardinia was the Italian region having both the highest annual percentage change in market prices across the national context (about +7%) and the lowest reduction in average market prices throughout 2012 (approximately −0.5%). This particular housing market condition faces with one of the lowest family income at the national level and generates a serious housing affordability problem whose trend can be appreciated by analyzing the related housing affordability index. This index measures the ratio of the average mortgage rate to the disposable family income. In this specific approach, operated by OMI and based on US National Association of Realtors methodology (OMI, 2013), housing purchase is considered affordable if the calculated index shows a positive value. As a matter of fact, during the last eight years the recorded housing market affordability index decreased from 12% to less than 4%. Such fall is second only to the affordability index decrease registered in Liguria. The authors of the report argue that this specific housing market situation is mainly related to the current growth

³ <http://www.sogaer.it/it/archivio-news/930-aeroporto-traffico-ancora-in-crescita-nel-2013.html> [last accessed: 01.08.14].

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