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Housing Affordability and Income-Threshold in Social Housing Policy

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Abstract

The issue of affordable housing has again become crucial in ensuring a greater social equity, increasing social cohesion and reducing inequalities within metropolitan or regional systems which, in the current climate of severe economic crisis, have to respond to global challenges of development, innovation and sustainability.

This study aims at building a system of knowledge about the housing affordability on the territorial scale, by which to identify the local characteristics of housing problems that could be solved through traditional planning tools or new practices of social housing, which involves private stakeholders and/or public administrations. This system of knowledge should include the analysis of the wealth distribution both in terms of income and real estate market price, and the calculation of the income-thresholds (based on the HAI-Housing Affordability Index) that filter the access to the real estate market. All these data are used to define the correspondences between groups of people and affordable housings, distinguishing them both by income and urban location. This approach is applied to the case study of the territorial system of the Province of Syracuse (Italy) and it allows appraising the gap between housing prices and income level in different areas of seven towns. To know the size and the spatial distribution of these gaps is a valuable tool to orientate the housing policy, to select the best model of social housing and to design the equitable parameters of social housing projects for each town.

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1. Introduction

The economic crisis can be anabolic or catabolic, creating or destroying wealth, urban and territorial shape, of plus/minus valuation of capital goods and real estate. The distribution of wealth is variable with different patterns depending on whether the wealth is produced by cash flows or is incorporated in the price of the capital assets, and it may contribute to wide inequalities and social exclusion. Moreover, the reduction in GDP, added value and demand generates job cuts and high levels of unemployment, amplifying the difficulties in finding affordable housing. This study proposes a methodology to assess the housing affordability at metropolitan level, in order to obtain a system of basic information to support public decision making process regarding the housing policy.

This system is instrumental in identifying the local demand and detailed social needs on which territorial development policies and practices of social housing could be delineated to support the goal of increasing social equity. The methodology proceeds by identifying the pattern of distribution of income, and by analyzing the real estate market for residential use. These data are combined and, subsequently, the income-threshold is calculated to measure the access to housing market by income groups of households and by different location of housing. To know the spatial distribution of these data can aid to promote the best model of social housing (immediate o postponed purchase; temporary or long-term renting; co-housing, etc.), to design the characteristics of housing projects for each town (different mix of social housing, housing on sale and rent housing; different mix of private capitals and public funds; etc.), and to select the households involved (low income, middle income) (CDP, 2014).

The methodology is applied, as a case study, to the territorial system consisting of seven cities (Syracuse, Avola, Canicattini Bagni, Noto, Pachino, Rosolini and Portopalo di Capo Passero) in southeastern Sicily, through the following steps:

- Analyzing patterns of income (by income levels and their territorial distribution);
- Analyzing patterns of wealth in terms of real estate prices (by town, urban area and building type);
- Appraising income-thresholds (by income level, urban area and building type);
- Analyzing of the results to support social housing policy/projects.

2. Patterns of local income

Every economic crisis causes not only a contraction of the main indicators of wealth (GDP, added value, number of employees, etc.), but also generates its different distribution, accentuating or diminishing the social equity. The unfavorable socioeconomic conditions of the Province of Syracuse can be described by many indicators: in 2013 there were almost 30,000 unemployed, the unemployment rate was +21.6% of the workforce (much higher than the national average which is 12.2%) and the youth unemployment rate (15-24 years) reached 55.6% (Regione Siciliana, 2014). It is also significant for the purposes of this study that 91% of the evictions were due to the arrearage and that the number of requests for eviction execution was substantial (1,080 a year). Another significant element is the presence of 12,413 foreign residents because, although they represent a small percentage (3.1%) of the provincial population, they are mainly lower income households.

To understand the origin of income flows, the economic base of the province is analyzed. Construction sector, in particular, is severely affected by the economic crisis with a significant reduction in the number of companies, active workers and wage mass (€-4,432 million in 2013) caused by the contraction of private sector and public works that decrease both in number and amount (-23.33% and -81.25%). Conversely, the tourism sector registered in 2013 an increase in tourist flow (+4.0% of arrivals) as a positive outcome of policies to promote the local historical, archaeological, architectural and cultural heritage.

A more detailed analysis on income data is carried out in the seven towns of the case study (Fig. 1.a) that correspond, on a provincial basis, to 57% of the population and to 59.2% of the income declared in 2013. Figure 1.b shows the relationship between the population size of town and its average yearly income, pointing out that the declared average income in Syracuse is significantly higher than in the other towns, among which there is a certain internal variability, even if income levels always range from 15,000 to 20,000€. The trend of the average income/number of inhabitants shows that, with the exception of Syracuse, the pro capita yearly income is very low, in fact it varies from 5,000 to 7,000€ for all towns.

The declared incomes in each town are also analyzed by the Lorenz Curve and the Gini coefficient to measure the area between the line of the income distribution and the line of perfect equality (Fig. 2.a): the Lorenz Curves have similar trends, and the Gini coefficient ranges from 18, the minimum value in Rosolini, to 20 in Syracuse and Pachino (on a scale from 1 up to 100), showing that there are no significant differences between the towns, although population and earning capacity are different. By matching the levels of income and the corresponding percentages of taxpayers declaring that income (fig. 2.b), it can be noticed, instead, the curves in Syracuse and Noto differ from the others because the percentage of households in the level of income 10,000-15,000€ is only 16-18%, and is around 50% in the superior level of income, from 15,000 up to 33,500. Instead, the other towns, particularly Portopalo di Capo Passero, Pachino and Rosolini, have a strong concentration of households in low income levels, with a peak that reaches 31% while the percentage in the highest levels ranges from 32 to 43%.
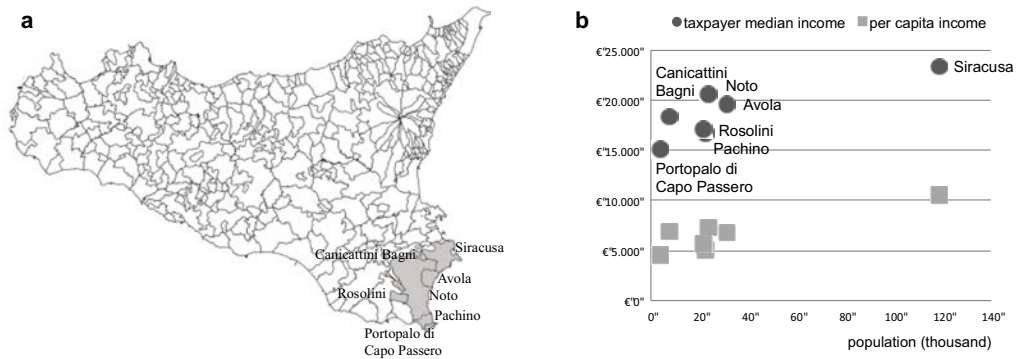

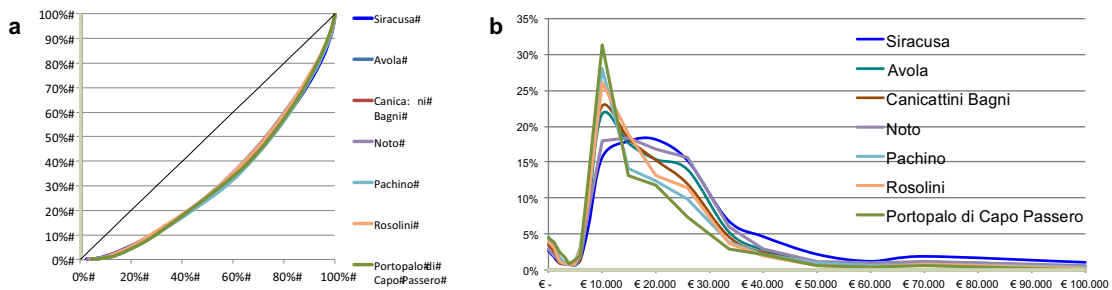Fig. 1. (a) Localization of the towns in Sicily; (b) Population and average yearly income (year 2013).

Fig. 2. (a) Lorenz Curve of the average income (year 2013); (b) Level of income on percentage of taxpayers (year 2013).

3. Patterns of local wealth in terms of real estate assets

The household's decision concerning their location in a city or in a specific urban area depends on many factors, such as economies of agglomeration, accessibility to public facilities, infrastructures, potentiality of interaction, and especially on trade-off "cost of housing/cost of transportation" (Camagni, 1992). The real estate market is, however, dynamic and subject to continuous transformations caused by macroeconomic and microeconomic, macro-territorial and micro-territorial factors which are elaborated by every city in a creative way, producing transmutation of liquidity and variations of temporal and spatial distribution of wealth in terms of real estate values (Rizzo, 2002).

The real estate market of the territorial system of Syracuse is analysed subdividing the land of each town in the *B*, *C*, *D* and *E* areas (as defined by OMI-Osservatorio del Mercato Immobiliare) and noticing the minimum and maximum prices of the OMI's "civil housing" typology (1st semester 2013). The highest prices, as predictable, are in Syracuse (1,750€/m^2), while in the other towns the prices are high for the housing located in the *B* area (which always corresponds to the central area) and, especially, in Avola and Noto where the historical center has a high

architectural value. Also in the *D* and *E* suburban areas market prices can be high if there are environmental and landscape qualities, as in the towns of Pachino and Noto. Conversely, the minimum prices are not very different between all the towns and the areas, and they range from 450€/m^2 to 740€/m^2 (Fig. 3).
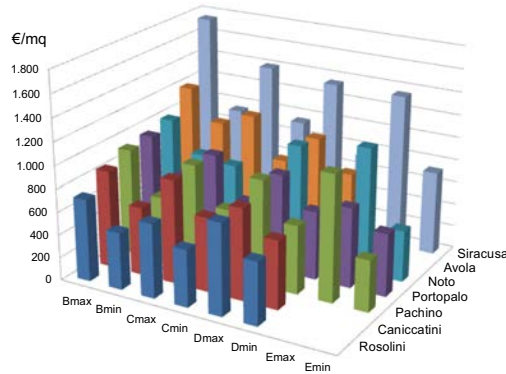

Fig. 3. Maximum and minimum market prices of housing (€/m^2) for urban area (*B*, *C*, *D* and *E*) and town (our processing on OMI data).

4. The Income-threshold

There are many indicators of affordability based on different approach (i.e. ratio paradigm, residual income approach, etc.) for measuring the financial ability to afford the housing (Stone, 2006; Bogdon & Can, 1997). The income-threshold approach proposed in this study is based on the NAR's Housing Affordability Index (National Association of Realtors, 2005), and it can be defined as the minimum yearly income to acquire housing at market prices and to qualify for a loan and for a given priced home. It is calculated applying the formula 1:

$$income\_threshold = \frac{instalment\_f\left[i, T, \left(P * LTV\%\right)\right]}{R\%} \tag{1}$$

Where: *instalment* = yearly instalment loan; *i* = mortgage rate; *T* = loan term; *P* = house price; *LTV% (Loan To Value)*= percentage of housing price covering by loan; *R%* = affordability percentage of household's income necessary to qualify for a loan.

According to NAR's parameters, *T* is fixed in 20 years, *LTV* is 80% (assuming a 20% down payment of the home price), while according to OMI's parameter, *R%* is 30% (OMI, 2015). The mortgage rate *i* and the house market prices *P* are variable and depend on values in financial and real estate markets. The income-threshold is calculated in all the towns, by both maximum and minimum market prices of every area (*B*, *C*, *D* and *E*), hypothesizing the purchase of a residence of 80m^2 and adopting a mortgage rate of 2.58% (fixed rate loan and 20 years-term, February 2016). The incomes-thresholds are combined with many different income groups (Fig. 4), so that it is possible to know both the degree of affordability and the gap for the housing purchase located in a given urban area, and the percentage of households in each group. The graphs in Fig. 4 show that in the city of Syracuse the low income households (up to 10,000€) who cannot access to the real estate market are 15.3%, whereas those having an income of 10,000-15,000€ can only choose a location in the *D* and *E* suburban areas and purchase housing which has the minimum price (they are 15.6%). The best houses located in central areas, or in the historical center, are affordable only from those people (22%) that have an income higher than 25,000€. In Pachino and Portopalo di Capo Passero those people, who are excluded by the market because they have an low income, are 26.8% and 29.5% conversely, the affordability of the maximum prices of housing starts from an income of 15,000-20,000€.
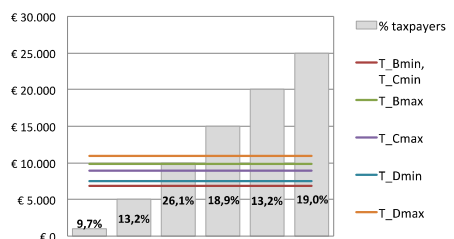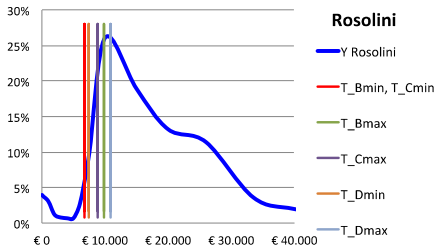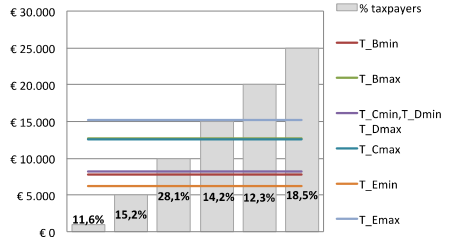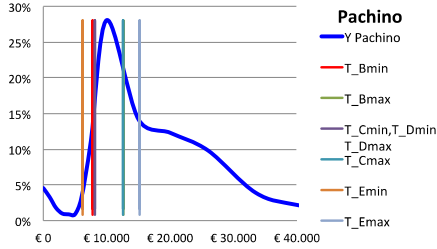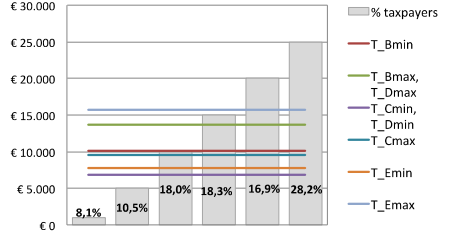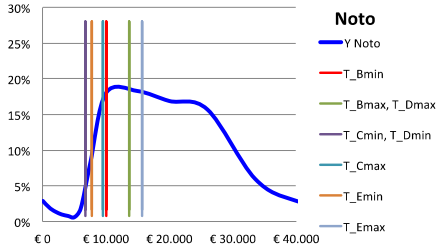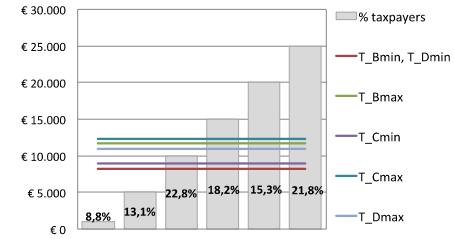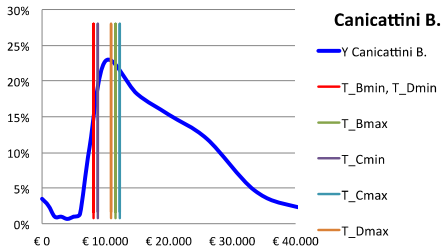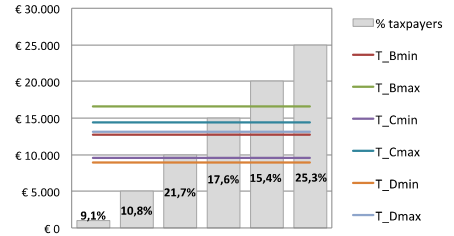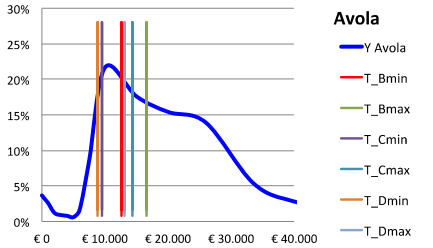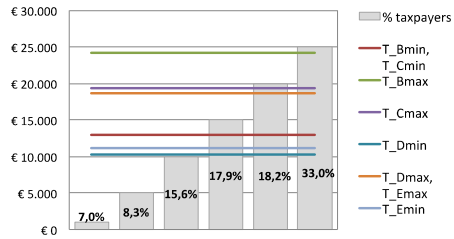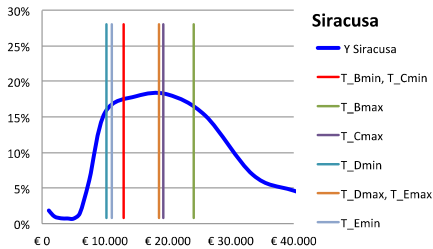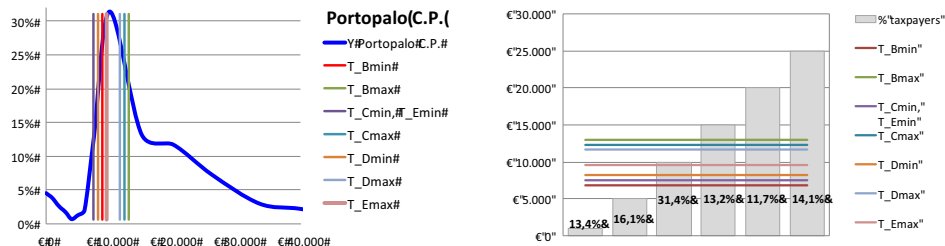
Fig. 4. Income groups and threshold-income for municipality and urban area.

In the other towns the degree of affordability is high because the prices are low, except for some valuable areas. Considering the whole territorial system (seven towns), the 17.2% of the households cannot afford the real estate market and, in addition, almost 16% can afford only the lowest market prices of housing located in suburbs.

5. Results

The results of the study show that a significant part of the households has an income that is not lined up to the housing market prices, but it is too high to get to the public housing. Housing policy can use many legal, fiscal, financial and administrative tools according to D.L. 112/2008 and D.L. 47/2014, such as facilitation in loans, tax cut, co-financing, cubage increase, modification of land use, national fund, European Structural and Investment Funds, etc. The most of social housing projects are promoted at the regional or urban level, involving private and public stakeholders. The application of the income-threshold approach can support the municipally to quantify the gap between income of households and housing prices in a given urban area, in order to design the characteristics of the social housing projects to reduce the housing uneasiness (Trovato & Giuffrida, 20014), i.e. to establish how supporting citizens to afford the rent of a house; to appraisal the profit of private capitals able to compensate an affordable market price; to find the fair ratio between private capitals and public funds.

Acknowledgements

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