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Guarantees and collaterals value in NPLs

Rubina Canesi^{a,*}, Chiara D'Alpaos^a, Giuliano Marella^a

^aICEA, Department of Civil, Environmental and Architecture Engineering, University of Padova, Via Venezia 1, 35131, Padova, ITALY

Abstract

The burst of the subprime mortgage crisis affected on a large scale the Italian real estate industry. The Italian real estate market underwent and is still undergoing a severe stagnancy due to the credit crunch worsened by the banking system and the resulting lack of liquidity. In financing real estate property investments, security packages play an extremely important role and guarantees have become a major tool for risk management and financial innovation in order to facilitate credit enhancement and hedging of risks. In this context the evaluation of guarantees and collaterals becomes extremely important. A robust measure of the value of collaterals is more than a key issue in times of financial crisis, when the value of the guarantees is questioned. Aim of this paper is to investigate, on a sample of 89 foreclosures, whether the collaterals were overestimated and the mortgage lending value represents a robust measure of the mortgage underlying guarantee.

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1. Introduction and related literature

The financial crisis erupted in late 2006 in the United States had such a severe impact, still evolving, on the world economy that is considered as the worst economic crisis since the Great Depression. The crisis began approximately in the second half of 2006, when the U.S. real estate bubble began to deflate and, at the same time, many holders of subprime mortgages became insolvent because of the rise in interest rates. On the one hand, the financial crisis considerably affected the Real Estate (RE) market in all European countries, but on the other hand,

* Corresponding author. Tel.: +39 0498726716.

E-mail address: rubina.canesi@unipd.it

the performances of the RE market and construction industry contributed to worsen the global crunch. Economic history suggests that some of the most severe systemic financial crises have been associated with boom-bust cycles in real estate markets (Bordo & Jeanne, 2002; Crowe *et al.* 2013; Antonucci & Marella, 2014).

The Italian RE market underwent and is still undergoing increasing difficulties due to the credit crunch worsened by the banking system and the resulting lack of liquidity. A significant quota of the Italian RE market is based on the segment of the credit market. Therefore, the financial and the real estate crisis had a heavy relapse on loans supply. The decrease of new granted mortgages was mainly related to the weakness and decline of the housing market and the negative phase of the economic cycle, characterized by an increase in the unemployment rate and a reduction in household incomes. At the same time, the crackdown of budget constraints and the deterioration in loan quality caused a reduction in the availability of credit independent of a rise in official interest rates. *De facto*, loan interest rates and the opportunity cost of capital have a strong influence on the performance of the RE market. From 2008, Non-Performing Loans (NPLs) have exponentially increased (20% per year), reaching in 2014 the total amount of 333 billion Euros (Jassaud & Kang, 2015). In the last quarter of 2014 the annual flow of new bad debts as a proportion of total household loans came to 1.4%. The ratio of bad debts to loans recorded a small increase and the share of NPLs (including those that are past-due, restructured or substandard) rose to 10.8% in December 2014 (Banca d'Italia, 2015).

In financing residential property investments, security packages play an extremely important role. A financial guarantee is a promise from a guarantor to make good on payments to the funds providers in case of default of the debt borrowers. Last but not least, financial guarantees have become a major tool for risk management and financial innovation to facilitate credit enhancement and hedging of risks (Gendron, Lai, & Soumaré, 2002; D'Alpaos & Canesi, 2014; D'Alpaos & Marella, 2014).

In this context the issue of underlying guarantees and the evaluation of collaterals becomes of paramount importance. A robust measure of their value is mandatory for lending institutions to the granting of loans, and it is more than a key issue in times of financial crisis, when the value of the guarantees is questioned. In what is now a familiar recurring history, during the credit boom, underwriting standards are violated and guarantees are inadequately funded; subsequently, defaults increase and investors in mortgage-backed securities attempt to dump their investments. In order to avoid these negative outcomes, it is important to strengthen the credibility of the system of guarantees.

Aim of this paper is to investigate whether assets used as collaterals are overestimated and how much of the mortgage lending value (MLV) can be recouped by the property forced sale price (FSP), as defined in Canesi (2015).

This in turn is crucial to make evidence whether there is an overestimation of properties security packages that may increase the probability of registering such an increasing number of NPLs. For this purpose, we analyzed the Italian auction market, by sampling 89 forced sales, that occurred between 2006 and 2014 in the provinces of Treviso, Venice and Padova. The analysis is meant to identify the qualitative and quantitative relationship existing between the foreclosed property, its urban context and its characteristics. In other words, we examine whether peculiar property and location-specific characteristics are recurrent in foreclosed properties. It is argued in the literature that foreclosed properties, ex-collaterals offered to secure a loan, are usually located in low-priced neighborhoods and that their FSP is influenced by the home's age, size and conditions as well as by numerous neighborhood characteristics (Yavas & Yang, 1994; Stevenson & Young, 2004; Campbell, Giglio, & Pathak, 2009; Sumeli, 2009; Immergluck & Law, 2014; Manganelli, Morano, & Tajani, 2014; Calabrò & Della Spina, 2014; Camagni, Micelli, & Moroni, 2015; Antonucci, D'Alpaos, & Marella, 2015).

The remainder paper is as follows. Section 2 describes materials and method, Section 3 and 4 illustrate and discuss the findings respectively. Section 5 concludes.

2. Materials and Method

To verify the quality of the RE guarantees and the way they could be affected by the urban context we collected data on foreclosures and created a database by cooperating with financial institutions, courts of law and different associations of public notaries (ANPEV Associazione Notarile Procedure Esecutive Venezia, APET Associazione Professionale per le Esecuzioni della Provincia di Treviso and APEP Associazione Professionale Esecuzioni Padova). This database represents the major novelty of the paper. In Italy, information on foreclosed homes,

foreclosure procedures, and relative FSP are not catalogued nor classified yet, because public agencies or private operators do not collect this information systematically. Therefore, our survey to some extent sheds light on the Italian auction market and its mechanism. Our dataset consists of the whole set of home foreclosures related to NPLs that occurred between 2006 and 2014 in the provinces of Treviso, Venezia and Padova (a physically continuous territory with different social and economic characteristics). The set is composed of 89 residential properties and for each unit we surveyed the information listed in Table 1 by consulting the archives of the above-mentioned entities.

Table 1. Survey Form.

Surveyed characteristics	Unit of measure/classification
N° of auction	N°
Synthetic description
Parcel real estate registry	Fg., Mapp., Sub., Cat., Cl., R.
Address
Urban context	Central / Semi-central / Suburban
Residential Type	Flat / Detached house / Terraced house / Loft
Size	m ²
Occupancy	Empty / Occupied by the owner / Rented
Final date of the contract	././....
Lease	Euro
Pictures	Jpg.
Quality of constructions	Insufficient / Sufficient / Quite good / Good / Excellent
Year of construction
State of Maintenance	Insufficient / Sufficient / Quite good / Good / Excellent
Evaluation Date	././....
Methodological Approach	Income Capitalization Approach / Sales Comparison Approach / Cost Approach
Fair market Value	Euro
Date of sale	././....
Number of bidding proceedings	N°

After collection of data, we defined and selected the main characteristics considered to be significant in representing the entire set. We took into consideration, on the one hand, the property's physical location in relation to the city and, on the other hand, the socioeconomic features that characterize the local market. To identify the physical location (L) we considered the property's distance from the city centre, by classifying it as central, semi-central or suburban. Whereas we characterized the city market conditions by means of three indexes:

- the average annual per capita income for the city where the property is located (IPC);
- the ratio between the number of real estate transactions and the stock of real estate units (IMI), that explains for the local RE market performances;
- the percentage variation in the number of real estate transactions, in the property's location, between two different years (ΔT).

To describe a property from the physical and technological point of view, we considered the size (M), the quality of constructions (Qu), and the state of maintenance (Ma).

In Table 2 we display the results of the statistical analysis conducted to identify the determinants (e.g. the urban context and property characteristics) of foreclosure phenomena. Further we analyzed how long (in terms of days) the lending institutions take to sell the asset (D). Finally, we investigated whether the MLV diverge from the property FSP, and we determined the ratio (Co) between FSP and MLV, that identifies the recovery rate of the mortgage loan.

Table 2. Sample descriptive statistics.

Criteria	Subcriteria	N. of observations (%)	Average	Standard deviation	Median	Skewness	Kurtosis
L	Central	16 (17.977%)					
	Semicentral	24 (26.966%)					
	Suburban	49 (55.056%)					
ΔT		71	-0.235	0.203	-0.261	1.623	5.903
IMI		89	0.013	0.007	0.014	-0.549	-0.163
IPC		89	12,149	1,911	11,965	0.346	-1.300
Qu	0-Inadequate	0 (0.000%)					
	1-Poor	13 (14.607%)					
	2-Adequate	27 (30.337%)					
	3-Fairly good	28 (31.461%)	2.709	1.136	3.000	0.137	-0.811
	4-Good	19 (21.348%)					
	5-Excellent	2 (2.247%)					
Ma	0-Inadequate	2 (2.247%)					
	1-Poor	10 (11.236%)					
	2-Adequate	13 (14.607%)					
	3-Fairly good	27 (30.337%)	3.027	1.251	3.000	-0.371	-0.601
	4-Good	29 (32.584%)					
	5-Excellent	8 (8.989%)					
M		87	138.460	81.340	107.090	2.074	4.885
D		89	815.110	484.88	685.00	1.870	3.611
Co		90	0.644	0.179	0.595	-0.254	-0.334

3. Findings

The analysis reveals that the majority of insolvent mortgages is located in suburbs (55.056%), followed by those located in semi-central areas (26.966%), and only 16 residential properties out of 89 (17.977% of the set) were situated in the city centre (Table 2). Another relevant finding concerns the socioeconomic and market characteristics. As expected, the neighbourhoods and cities where the number of NPLs is significant, reveal a quite strong market downturn reaching an average of -23.50% (Table 2). There is evidence of a number of properties being located in municipalities featuring a rather depressed RE market by comparison with their respective county capital cities. Similar conclusions can be drawn looking at the average IMI, that amounted to 1.30% and that reveals a stagnating real estate market in the involved municipalities. According to our findings with respect to IPC, the majority of the foreclosed collaterals are located in city centres with a much lower average per capita income than the average of the sample. The IPC feature is characterized by a slight positive asymmetry due to the median value lower than the average, this means that there is a slight prevalence of properties located in low-income areas (i.e. where the annual per capita income is around 10,000 Euros).

The above results are in line with Stevenson & Young (2004) and Campbell *et al.* (2009), that found evidence of the correlation between auctions due to foreclosures or to bankruptcies and properties, ex-collaterals offered to secure a loan, that are located in low-priced neighbourhoods «at the lower end of the market» (Stevenson & Young 2004, p.47).

Analyzing the physical and technological characteristics of the properties under foreclosure procedures, we find that their average size is 138 m² with a positive asymmetry due to a sporadic presence of very large properties (more than 200 m²). The mean rating of the properties' quality of construction (Qu) is defined as adequate or fairly good in 61.798% of the cases (Table 2), in a state of maintenance (Ma) that was judged to be fairly good (30.337%).

The properties remained for sale on average 815 days (2.2 years). Furthermore, the descriptive statistics show that the property FSP recoups just 64.4% of the MLV: the minimum Co amounted to 24.4% and the maximum to 100.5%.

4. Discussion

The database describes in detail the profile and features of assets used as the collateral for mortgages and their reference market. Nonetheless, we must remark that the set is composed by cases circumscribed in a limited area. Despite these limitations, the sample can be considered representative of the national scenario since it considers a complex area with different socio-economic characteristics.

Most of the foreclosed properties are characterized by sufficient quality of construction and state of maintenance (i.e. they scored at least two on a scale from zero to five). The size of the properties is on average equal to 138 m². These types of property belong to the mid-range of the market, in terms of size, quality and state of maintenance and usually take longer to sell and are associated with larger depreciation than the upper level ones (Yavas & Yang, 1994).

Most of the analysed collaterals were located in the city suburbs or smaller municipalities, making evidence that the properties of insolvent mortgage holders are located in specific urban context. Our findings show that most foreclosures occurred in urban contexts characterized by a stagnant or illiquid market and incomes per capita below the average. It is worth note that the presence of foreclosed homes, because they are sold at a lower value than the market, might negatively affect the value of other nearby properties or entire portions of municipalities, «*either through direct physical effects on neighborhoods or by creating an imbalance of demand and supply in an illiquid neighborhood housing market*» (Campbell, Giglio, & Pathak, 2009, p. 1). These spillover effects on prices may generate negative outcomes on the RE market, as it occurred in the USA, where they caused «*further foreclosures because homeowners were more likely to default when their houses were worth less than the face value of their mortgages*» (Campbell, Giglio, & Pathak, 2009, p.2). Therefore, it becomes extremely important to define and support macro-prudential regulatory policy and instruments in the European context (Hartmann, 2015).

According to our findings, the average time the lending institutions take to sell the asset amounts to 2.2 years. In other words, it takes much longer than on average in Europe. This in turn leads to additional decrease in value due to net revenues losses and potential lack of maintenance, for both inhabited and uninhabited properties.

We can finally observe that according to our data, 99% of the value of collateral used as guarantees to secure the loans turned out to be overestimated: the FSP in fact recoups only 64.4% of the MLV.

5. Conclusion

In these particular financial and economic conditions, the evaluation of guarantees and collaterals becomes a key issue. A robust measure of the value of collateral is mandatory for lending institutions to the granting of loans. It becomes necessary to strengthen the credibility of the system of guarantees as they are not able to recover the balance of a mortgage, when collaterals are foreclosed. In this paper we found evidence that the property FSP recoups just for 64.4% of the MLV. This result is crucial, as it proves that there is a general overvaluation of properties' security packages that might increase defaults and induce investors in mortgage-backed securities attempt to dump their investments. The analysis of the impact of the urban context and property characteristics on the divergence between the property's FSP and MLV is fundamental as it might create an imbalance of demand and supply in an illiquid neighborhood housing market.

Finally, the findings on the overestimation of property security packages provide a useful insight for the implementation of regulatory policy instruments aimed to reduce risks related to NPLs.

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