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THE INFLUENCE OF THE NUMBER OF BIDDERS AND E-AUCTION BIDDING TYPES ON THE AUCTION PRICE PREMIUMS: STUDY OF REAL PROPERTY MORTGAGE AUCTION IN BANDUNG, INDONESIA

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Abstract

This study aims to determine the effect of the number of bidders and the bidding types on the deviation from auction price and the reserve price (auctions price premiums) in the real property mortgage auctions in Bandung, Indonesia. The research method is verification descriptive and the data studied are 72 units of the real property mortgage auctions in KPKNL Bandung area from year-2015 to 2016 which sold and analyzed using multiple linear regression OLS method. Variables used in this study are the number of bidders and dummy types of bidding (e-auction or conventional) with dummy slope model. The results showed that the number of bidders and dummy of bidding types had a significant effect on the deviation of auction price from the reserve price in the real property mortgage auctions in Bandung. The bid type through internet auctions (e-auction) gives higher effect on the auction price premiums than the bid type instead e-auction.

Keywords: auctions, the deviation of auction price from reserve price, price premiums, e-auction

INTRODUCTION

Although banks have applied prudential principles in providing credit to customers or debtors, sometimes the debtor has defaulted so that there is bad credit. One solution to repay these bad loans, the bank must sell the debtor's collateral through an auction in the auction office. In Indonesia, the Auction Office that done auction of debtor's collateral is KPKNL (Service Office of State Assets and Auction). One of the KPKNL that serves the the real property mortgage auction in Bandung area is KPKNL Bandung.

Based on the results of the real property mortgage auctions the year-2015 until 2016 in KPKNL Bandung, the average frequency of the real property mortgage auctions that sold well only 9% while the unsold of 91%. The outcomes of the real property mortgage auctions in 2015 amounted to only Rp452.68 billion and 2018 was Rp842.35 billion. The researcher argues that the outcomes of the auction could actually be even greater if the frequency of the auction that sold was higher and there was an increase in auction prices above the reserve prices or there was an increase in the auction price premiums. The auction price is the final closing price or the highest bid on an item at auction, while the reserve price is the minimum price of the goods auctioned and fixed by the seller. The auction price premium is the deviation between the auction price and the reserve price received by the seller. Auction officers from the Auction Office (KPKNL) began offering goods to the bidders at the reserve price position of goods.

In the real property mortgage auctions, the higher the auction frequency that sells and the higher the auction price increase above the reserve price, then the auction revenue will be even greater. If the auction frequency is sold low and the auction revenue are low, the nonperforming loans collected are low. In addition, the success of the mortgage auction is very important for debtors as debt repayment; and to increase state revenue as non-tax state revenue (PNBP) and indicators of KPKNL performance success for auction organizer (KPKNL Bandung); For that, it needs to be done a more in-depth analysis of the factors that influence (determinant) the auction price premiums in the real property mortgage auctions on KPKNL Bandung.

According to the auction theory, the number of bidders is expected to have a positive effect on auction transaction and premium price (Amidu and Agboola 2009). The greater the number of bidders will significantly influence the outcome of the auction (Ong, Lusht, and Mak, 2005; Ong, 2006; Amidu and Agboola, 2009; Amdar, 2011; Idee, Iwata, and Taguchi, 2011; Stevenson and Young, 2012 ; Hungria and Gunnelin, 2013; Chow, Hafalir, and Yavas, 2015).

The e-auction application starts to be used at the end of 2014 throughout the Auction Office (KPKNL) in Indonesia. Through the e-auction webs, bidders can bid online without intervention from other bidders until the time limit is exceeded, so the probability of the price

formed becomes more optimum. The key to successful auction implementation is how well the auction organizers design the auction method to attract entry buyers and prevent collusion (Kemplerer, 2001). Azasu (2006) also explains that an important conclusion from previous studies is that good or bad auctions depend on how to attract bidders and how to avoid collusion among bidders. The auction conditions in Sweden are vulnerable to collusion and the occurrence of "bidding barriers" by a bidder against another potential bidder. One solution to the auction problem is the method of auction online or e-auction.

The purpose of this study is to examine the factors that influence the auction price premiums on the real property mortgage auctions of KPKNL Bandung in the period 2015 until 2016. Variables to be studied are the number of bidders and the bidding types(e-auction or conventional). the more bidders there will be competition in bidding goods so that will increase the premium of the auction. So, with the type of bidding auction through e-auction, bidders bid through the internet media from anywhere without having to come to the auction, so the bidders are free to bid without intervention, other bidders. Therefore, the use of e-auction will increase the auction price deviation from the limit value.

What distinguishes from previous research, researchers add variables of bidding types (e-auction or conventional) and use dummy slope in a regression model, not dummy intercept like other research. According to Gujarati (2012), the use of a dummy slope will facilitate interpretation of the impact and differences in a single regression.

The next section of this paper is structured as follows: Part II provides a brief description of the literature review, and Part III presents the research method, and Section IV presents the results of the analysis and discussion. Finally, Part V is the conclusion and suggestion.

LITERATURE REVIEW

The mortgage auctions is an auction conducted by a creditor who has the right to sell the collateral of a debtor who defaults through a public auction and retrieve the proceeds as a settlement of his receivables (Law No. 4 of 1996). This auction is led by the auctioneer at the State Auction Office (KPKNL). The auctioneer offers the goods to the bidders starting from the reserve price of the goods, and then he led the bidder's bargain until getting the highest price. In the real property mortgage auctions, the reserve price shall be determined by the bank (creditor). Then the highest bidder is set by the auctioneer as the Auction Winner (Ministry of Finance, 2016).

Auction price premiums is a deviation between the auction price formed and the reserve price. In Amidu and Agboola's research (2009), the deviation between the auction price formed and the reserve price is known as "auction premium" ie percentage of auction price and reserve

price, then divided by reserve price. The higher the auction premium, the greater the acceptance of the auction results to be achieved. Factors affecting "auction premium" are significantly the number of bidders and locations. Empirically this study also shows that property types and bidder characteristics may also affect "auction premium" (Amidu and Agboola, 2009).

A higher number of bidders or bids will increase competition among bidders, thus increasing the auction price premiums of the auction object. It is stated in the auction theory that the number of bidders affects the success of the auction and the increase in the auction price premiums. The number of bidders significantly influences the auction results (Ong, Lusht, and Mak, 2005; Amidu and Agboola, 2009; Amdar, 2011; Idee, Iwata, and Taguchi, 2011; Stevenson and Young, 2012; Hungria and Gunnelin, 2013; Sahara (2013); Chow, Hafalir, and Yavas, 2015).

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Similar research has been studied several times by researchers from abroad and from Indonesia. Research from abroad, among others by Idee, Iwata, & Taguchi (2011) examines that the reserve price and the number of bidders contribute to an increase in the auction price. Stevenson and Young (2012) examines that the number of bidders generally significantly affects not only the probability of the auction but the effect on the premium price.

Ong, Lusht, and Mak (2005) examine the factors that allegedly influence the outcomes of auctions (success or failure of auctions) of a private residential real estate in Singapore. The results conclude that (1) the state of the market (SOM) - when the non-economic depressed state, (2) the high degree of credibility of the auctioning houses, (3) the large number of bidders (4) high levels of pressure from creditors to sell a property (distress sale of properties), (5) location of auctioned property (proximity to urban center area), and (6) type (form) of property, especially condominiums or apartments, have a positive effect on auction results (success or failure of auction) a private residential real estate.

Chow, Hafalir, and Yavas examine the effect of auctions and sales in negotiations on real estate sales in Singapore. Auction results in a high realization value compared to sales with negotiations. The demand for the auctioned asset will be high if the asset is homogeneous, and when the asset attracts many buyers with a high rating (Chow, Hafalir, and Yavas, 2015).

For study case in Nigeria, Amidu and Agboola (2009) indicate that the location, the number of bidders, the type of property and the characteristics of the bidder affect the auction premium. In Stockholm, Hungria-Gunnelin (2013) show that the number of bidders significantly positively affects the auction price.

In recent empirical work about internet auction, et. al. (2017) examines that e-auction has the potential to increase greater market share through increased user participation. That the security features, ease, and speed of connections from e-auction sites increase consumer confidence in e-auction sites. Bapna, Goes, and Gupta (2000), in his research discussed the online property auction process, compared to the traditional property auction process, which occurred in the United States. The results conclude that online auction process shows different characteristics with traditional auction process as a result of heterogeneity (a diversity) of auction participants and fluidity (keep flowing) goods auctioned. That online auctions will result in cost-effectiveness and efficiency, as well as greater revenue from the auction process in question.

In Indonesia, a similar study conducted by Amdar (2011) examines the determinants of the deviation of the auction price to the reserve price of the real property mortgage auctions in KPKNL Kendari in year-2008 until 2010. The analysis tool used is Ordinary Least Square (OLS) method with 38 samples. The results show that the variables affecting the value of the deviation of auction price and the reserve price are the number of bidders, the distance between real property and city/business center, the wide accessibility of roads in front of the real property. In KPKNL Medan, Sahara (2013) showed that bidder amount, real property distance to city center / CBD, road width in front of the property, and property type influence the deviation of the auction price to the reserve price. Saputra (2014) examines the effect of land area, a number of bidders, location and type of real property on the results of mortgage auction in KPKNL Pontianak, showed that the land area, the number of bidders, the location and the type of property affect the results of mortgage auction. Then Trijendra (2011) indicated that the number of bidders, location, land area and accessibility affect the results of the sale of property through the auction of mortgage rights in KPKNL Purwokerto.

RESEARCH METHODS

This study uses research methods that are verification and descriptive. The data used in this study is secondary and completed with primary data. Secondary data used is data between place or space (cross-section) that is auction data of real property rights of responsibility sold in the auction year 2015-2016 in KPKNL Bandung. The primary data is the distance data of the location of the real property that is auctioned to the city center or CBD. The distance data of the

real property location to the nearest city center or CBD is calculated using the ruler facility in the "Google Earth" software.

Sampling in this research is done by using purposive sampling technique (purposed sample). The number of samples used is 72 the real property auction that sold. The dependent variable is the auction price premiums (the deviation of auction price to the reserve price-"**Dev"**) that is the difference between the auction price and the reserve price in the real property mortgage auctions, where the auction price is the highest bid price of the auction participant specified as the auction winner by the Auctioneer, equal to or above the reserve price. The reserve price is the minimum price of goods to be auctioned by the seller or the owner of goods. The magnitude of the auction price premium is expressed as a percentage, by reducing auction price with a reserve price and divided by a reserve price.

While the first independent variable is the number of bidders (**Bid**) that is the number of persons, institutions or companies acting on their own behalf or authorized by other parties and submitting bids on the mortgage auction(Ministry of Finance, 2016).Secondly, the bidding type multiplied the number of bidders (**D*Bid**) is the multiplication of the variable number of bidders with the dummy of bidding type where the bidding type through e-auction is 1, whereas the bidding type, not e-auction is 0.

Multiple linear regression analysis methods are used to identify and test factors affecting the deviation of auction price to the reserve price of The real property mortgage auction at KPKNL Bandung. With reference to regression model from previous research result (Amidu et al., 2009; Marwan, 2000), the regression model used in this study is as follows:

$$\mathbf{Dev_i = \alpha_i + \beta 1\ Bid_i + \beta 2\ D_i * Bid_i + \varepsilon_i}$$

Where :

Dev_i	=	Deviation of auction price from reserve price (percentage)
α_i	=	Intercept indicating the constant level of Dev
$\beta 1$ and $\beta 2$	=	independent variable coefficients
Bid_i	=	Number of bidders (number of people)
$D_i * Bid_i$	=	dummy slope; Number of bidders multiplied by type of bidding dummy; Where 1 for e-auction and 0 for non-e-auction
ε_i	=	Variable interference

The process of data analysis is done by Eviews 9.0 program using the least squares model (OLS) with GLS (White's Heteroscedasticity-Consistent Variance and Standard Error). Furthermore, to test the hypothesis, it will be tested the classical assumption, F-stastic test, t-test and the determinant coefficient measurement.

FINDINGS AND DISCUSSIONS

Table 1 shows the variables statistic distribution of the data. During 2015-2016, the lowest value of the deviation of auction price to the reserve price (Dev) equals to 0.000, while for the highest value equal to 0,2600. Then the average number of bidders (BID) as much as 1.46 or 2 people with a standard deviation of 0.73.

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Table 1. Descriptive Statistics

Uraian	DEV	BID	D*BID
Mean	0.037917	1.458333	1.097222
Maximum	0.260000	4.000000	4.000000
Minimum	0.000000	1.000000	0.000000
Std. Dev.	0.057087	0.730377	0.936877
Observations	72	72	72

Results of Multiple Linear Regression

Table 2. Summary of Linear Regression Results

Independent Variables	Coefficient	Prob.		R-squared	Prob. (F-statistic)
BID	0.047359	0.0000	***	70,81%	0.0000
D*BID	0.018200	0.0036	**		
C	-0.051119	0.0000	***		

Dependent Variables: The deviation between the auction price and reserve price (Auction Price Premiums).***) 1% significant level; **) 5% significant level;

Source: Eviews 9 Output

The result of t-test (independent variable test partially) each significant independent variable at the (α) 5% significance level. Essentially, this shows that the number of bidders and the bidding types are significantly influenced the auction premiums. The results of the F-statistic test (simultaneous independent variable test) of 0.0000 showed that at the level of significance (α) = 5% independent variables together have a significant effect on the dependent variable. Furthermore, the R-squared value of 70.81% implies that the independent variables are able to explain the variation of the dependent variable by 70.81% while the remaining 29.19% of the systematic variation is influenced by other variables outside the model (e).

Classical Assumption Testing Results

The model in this study has been had through the classical assumption test that is tested to test the assumption of classical regression (Gujarati & Porter (2012).The classical assumption test used is Multicollinearity, Autocorrelation, Normality, and Heteroscedasticity. This model has passed by Multicollinearity test and Autocorrelation test at a significance level of 5%, while the Normality test passes at a level of 10% significance. In the Heteroscedasticity test, the Heteroscedasticity problem in the model is improved by using White's Heteroscedasticity-Consistent Variance and Standard Error (GLS).

Discussion

Based on the results of statistical analysis, then obtained the model of regression equation as follows:

$$\mathbf{Dev_i = -0{,}0511 + 0{,}0474\ Bid_i + 0{,}0182\ D_i{*}Bid_i + \varepsilon_i}$$

The regression coefficient is interpreted as the elasticity of the dependent variable on the change of the independent variable or defined as the percentage change of the dependent variable caused by the change of the independent variable (Gujarati, 2012). Therefore, from the equation above the variable of the number of bidders (Bid) has a probability (p-value) of 0.000 with a coefficient of 0.0474 means that the number of bidders indicates a positive and significant relationship (p-value <0.05). The regression coefficient of 0.0474 indicates that each increase in the number of bidders by 1 person, it will raise the auction premium by 0,0474 percent, with the assumption that other factors remain (ceteris paribus).

This finding is in line with the auction theory, that the more bidders present and bidding on a real property on offer, the probability of auction success will increase. Therefore, an increasing number of bidders will increase competition among auction participants which will ultimately have a positive effect on the probability of auction success or increase the auction premium. The results of this study are also in line with Ong, Lusht, and Mak (2005) research results; Idee, Iwata, and Taguchi, (2008); Lestari (2009); Amidu and Agboola (2009); Amdar (2011); Stevenson (2012); Hungria & Gunnelin (2013); and Chow, Hafalir, and Abdullah Yavas, 2015 stated that the number of bidders had a significant effect on the auction results.

Furthermore, the variable coefficient of 0.0182 on the variable of the number of bidders based on the bid type (D*Bid) shows a positive and significant relationship. This means that the bidding type through e-auction gives a higher impact or influence of 0.0182 percent on the auction premium than the bid type of non-e-auction, ceteris paribus. Therefore, by this finding the recommendation in Azasu (2006) research is proven, that online auction method can be a solution in avoiding collusion between bidders. This is because with the method of online

auction (e-auction) the bidders do bidding auction through the internet through a laptop or smartphone from anywhere without having to come to the auction. therefore bidders are free to bid according to their perceptions and ability to pay in the absence of influence from other bidders.

Thus the auction of the real property of mortgage through e-auction can further raise the auction premium. Even online auctions will result in cost-effectiveness and efficiency, as well as greater revenue Bapna, Goes, and Gupta (2000). People prefer to use e-auction because of its trusted security, e-auction information connection speed, time efficiency, economic advantages, and ease of use, which makes e-auction fun, easy to use and useful for users (Li, Chung, and Fiore, 2017). In addition, the online auction process has a significant effect on the comfort and satisfaction of bidders (Cui and Lai, 2013).

The success of a mortgage property auction is very important for banks to recover bad loans, as bad debts that are not collected can disrupt the financial condition of banks. For that purpose, banking and KPKNL should do optimal effort for optimizing the success of the auction of mortgage rights property, by capturing the number of bidders as much as possible through the internet media, among others marketing of auctions through advertising on the media online, broadcast auction ads through Twitter, Whatsapp, Facebook and so forth. It is also necessary to create a database of potential buyers in marketing the auction.

CONCLUSION AND RECOMMENDATIONS

The number of bidders and the bid type has a positive and significant effect on the auction price premiums. The bid type through e-auction gives higher effect to the auction price premiums than the bid type of non-e-auction. The results of this study are in line with the auction theory, that the more bidders present and bidding on a real property offered, the probability of successful auction will increase.

Based on the findings that the number of bidders is very important to affect the auction price premium increase, KPKNL Bandung and the bank (as seller) must carry out auction marketing efforts to attract more potential buyers. KPKNL Bandung should increase socialization about auction and e-auction. In addition to announcing the auction through leaflets and newspapers, seller (creditor) needs to do auction marketing through internet media (via Twitter, Instagram, WhatsApp, or broadcast message). Furthermore, it is necessary to carry out the auction of mortgage property periodically so that people who want to buy property will go to KPKNL in that period.

The use of auction bidding by e-auction has an effect on the auction premium. Accordingly, the use of e-auction in the auction should be more developed considering the current online trading media is in great demand and growth in domestic and abroad.

This study is not perfect and still has limitations considering the analysis is based on only five independent variables and the limit area in Bandung. For the future, for researchers who want to do similar research may use a broader area and variables to produce a better analysis.

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