

## Apartment foreclosure discount in Kuala Lumpur

Woei Chyuan Wong<sup>a\*</sup>, Pooi Leng Ng<sup>b</sup>, Janice YM Lee<sup>b</sup> and Md Nasir Daud<sup>c</sup>

<sup>a</sup>*Universiti Utara Malaysia*; <sup>b</sup>*Universiti Teknologi Malaysia*; <sup>c</sup>*Universiti Malaya*

With the exception of anecdotal information which suggests that auctioned or foreclosed properties in Malaysia tend to be sold at a deep discount, no study has thus far attempted to quantify this foreclosure discount. This notion is explored by comparing the listing price of auctioned apartments with comparable non-auctioned apartments located within the same building blocks in Kuala Lumpur during the period 2009–2014. The property auction market is predominately relied upon to dispose of foreclosed properties in Malaysia. It is found that foreclosed apartments are listed at a discount of 33.4% as compared to apartments advertised in the private negotiated market. This discount is attributed to “stigma effect” associated with auctioned properties and the imperfections of the Malaysian auction market such as auctioned properties may not carry a clean title, potential buyers cannot view the properties prior to auction and may not obtain vacant possession of the properties. The “proxy effect” was minimal since the matching strategy adopted would have netted out the differentials in locational and neighbourhood characteristics between auctioned and non-auctioned properties.

**Keywords:** auction sales; auctioned properties; private negotiated sales; stigma effect; foreclosure discount

### Introduction

A number of papers have examined whether auctioned properties were sold at a discount or at premium prices relative to private negotiated sales (with the terms private negotiated sales, private sales and non-auctioned properties being used interchangeably). Earlier research has attempted to investigate this question using an hedonic regression approach, where a dummy variable indicating whether the property is sold at auction or private market is regressed against the natural logarithm of property sales prices (dependent variable). An important consideration in adopting the hedonic regression approach is to ensure that the quality of the auctioned properties are comparable to those non-auctioned properties, such that the auction dummy indeed captures the price differential between the two selling methods. Researchers have attempted to overcome the issue of quality bias by:

- (a) controlling for property, locational and neighbourhood characteristics that proxy for quality in the regression model (Dotzour, Moorhead, & Winkler, 1998; Lusht, 1996);
- (b) constructing a repeat sales index for sample of auctioned properties to estimate their predicted sales prices (Mayer, 1998);

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\*Corresponding author. Email: [wwchyuan@uum.edu.my](mailto:wwchyuan@uum.edu.my)

- (c) examining the relationship between auction prices and their predicted market values based on a comparable assessment ratios approach (Allen & Swisher, 2000); and
- (d) focusing on a sample of homogenous property such as single family detached house (Lusht, 1996) and vacant housing lot (Quan, 2002).

In addition, the housing literature contains a number of papers that have documented the effect of foreclosure status on property sales prices (see Carroll, Clauretie, & Neill, 1997; Clauretie & Daneshvary, 2009; Forgery, Rutherford, & VanBuskirk, 1994; Hardin & Wolverton, 1996; Pennington-Cross, 2006; Shilling, Benjamin, & Sirmans, 1990). These strands of studies found that foreclosure properties were sold at a significant discount compared to non-foreclosure properties in the range of 4%–24%. Without distinguishing between foreclosed properties that are sold at auction and in private sales markets, they offer possible explanations for the foreclosure discount. It could be due to “stigma effect” associated with the status of the property as foreclosed. This effect has nothing to do with property characteristics but purely the buyers’ negative mindset towards foreclosed properties. Hence, potential buyers expect to purchase foreclosed properties at a deep discount. The “proxy effect” on the other hand, is related to the negative characteristics of a foreclosed property such as deteriorated physical conditions and/or undesirable neighbourhood characteristics.

This research aims to inter-relate these two strands of literature by comparing the listing prices of auctioned and non-auctioned apartment properties in Kuala Lumpur, the capital city of Malaysia. All auctioned properties in this sample are foreclosed properties while the opposite is true for non-auctioned properties. This study is, therefore, a joint test of the effects of foreclosure status and selling mechanism (auction versus private sales) on property prices. Moreover, this study differs from previous research which is prone to self-selection bias where the decision to participate in either auction or private sales is a choice variable. To control for the possibility of sample selection bias, prior studies used a two-stage Heckman selection procedure. The first stage involves the estimation of a probit model on the sellers’ choice of selling method (auction versus private sales). The second stage introduces an additional selection variable, the inverse Mills ratio, as an explanatory variable to the sale price estimation equation (see Dotzour et al., 1998; Lusht, 1996). In the sample in this paper, auction dummy is exogenous in nature because auction is the only route to dispose of a foreclosed property while private or non-distress sales through auctions are rare in Malaysia.

The issues of quality bias are circumvented by comparing the listing price of auctioned and non-auctioned apartment properties located within the same building blocks. For each auctioned property, a matching non-auctioned property located within the same building block is identified. This sampling approach also provides a cleaner test to distinguish between the stigma effect and proxy effect. It may be contended that, by controlling for the property’s qualities, the remaining impact of auction (foreclosure) dummy on property price should be largely attributable to stigma effect associated with the auctioned properties.

Findings from this research have implications to policymakers in their efforts to protect the lower income earners from financial shocks given that Malaysian auction market is dominated by lower-priced properties (see Wong, Lee, Daud, Ng, & Chan, 2014). The recourse nature of Malaysian residential mortgages means that sellers are still liable for any shortfall between proceeds from the auction and outstanding

mortgages. This is likely to be the scenario when auctioned sale prices are substantially lower than private sale prices.

The remainder of this paper is organized as follows. The next section provides institutional background and literature review and develops the hypothesis for the empirical study. Then the data used in this research are discussed, before presenting the empirical results, then discussing the implications of the results and finally drawing conclusions.

## **Institutional background and review of literature**

### ***Auction process in Malaysia***

Property auctions are used in Malaysia almost exclusively for disposal of properties involved in foreclosures or bankruptcies with Wong et al. (2014) providing a review of the development of the property auction market in Malaysia. (It should be noted that the auction process and laws are broadly similar across all states in Malaysia.) Private or non-distress sales through auctions are rare. Property auctions in Malaysia are broadly divided into judicial and non-judicial auctions. Judicial auctions involve properties with individual land title while non-judicial auctions involve properties without individual titles, typically high rise buildings with strata titles. The auction procedure is long and tedious for the judicial route as mortgage lenders need to obtain *Order of Sales* from a court of law before they can commence the auction process. Reserve price, auction date and auctioneer are ascertained after *Order of Sales* is granted by the court. Auction of the said property must be conducted within 3 months from the date of *Order of Sales*. A reserve price is set based on the property's appraised value on a date that cannot exceed 6 months from the date of application to court. The non-judicial route is much shorter as lenders could decide on an auction date and appoint auctioneers without referring to the court. The lenders could also opt to sell the foreclosed properties through private sales instead of auctions. The non-judicial route is also used by some private owners who want to dispose of their property through auction but this is rarely conducted.

Once a *Proclamation of Sale*, which elucidates the terms and conditions of the auction sale, is approved by the court, the auctioneer is required to publicly advertise the upcoming auction sale in major local newspapers at least 7 days before the auction date. Potential buyers could examine documents containing the details of property such as size, location, names of the property owners as well as the appraisal report. Each bidder must pay a deposit equivalent to 10% of the reserve price. English ascending bid auction format is used with bid prices higher than the reserve price. If a property fails to be auctioned off, it is common practice for the auctioneer to lower the property's reserve price mechanistically, by 10% from the reserve price for the subsequent auction.

### ***Literature review***

There exist two distinctive and opposing sentiments towards property auctions. In countries such as Australia, New Zealand, Ireland and Sweden, the auction market works in parallel with the private market as a viable method to dispose of properties. In fact, auctions are the preferred method to sell high-end properties (see Hungria-Gunnelin, 2013; Lusht, 1996; Stevenson & Young, 2015). In contrast, auctions in the

United States, Malaysia, Japan and, to a certain extent, Singapore are used primarily to dispose of foreclosed or distressed properties (see Allen & Swisher, 2000; Idee, Iwata, & Taguchi, 2011; Ong, Lusht, & Mak, 2005).

In countries that are receptive to auctions, properties sold via the auction market often result in higher prices as compared to private sales. Lusht (1996) reports that auctioned properties in Melbourne, Australia are sold at an 8% premium over listed and privately sold properties. The author attempts to control for quality by including property size, property structure dummy (brick construction) and four locational dummies in hedonic regression. Dotzour et al. (1998) also observe a premium ranging from 5.9% to 9.5% for auctioned properties located in the two highest priced areas in Christchurch, New Zealand. The quality proxies used in their regression models are property size, age of the property, building structure (wall types) and an indicator variable of whether the property is a quality property as classified by a local real estate appraisal company.

Alternatively in the United States, the stigma associated with foreclosure causes auctioned properties to trade significantly below market value. Mayer (1998) highlights that auctioned properties in Los Angeles and Dallas were sold at a discount in the range of 0%–9% and 9%–21% respectively, relating the findings to market conditions in the two markets where Los Angeles data in the late 1980s emerged against the backdrop of the residential property boom in southern California while the Dallas data during the same period reflected a severe downturn due to oil bust crisis. This is consistent with his earlier work (Mayer, 1998) which theorized that the discount for auction properties rises during downturns. To overcome the quality bias associated with the hedonic regression, Mayer constructs a resale price index that tracks the price performance of houses sold more than once in the sample period. The change in resale price index is used as the dependent variable with auction dummy as the key explanatory variable. This approach essentially nets out the individual effects from each house since housing attributes tend to be constant over time.

Allen and Swisher (2000) observe that their sample of auctioned properties located in south Florida, USA were selling on an average 17.45% lower than their predicted market values which were computed using mean assessment ratios for the regions in which the properties are located. Quan (2002) developed a model of real estate assets disposition methods, i.e., auctions versus private negotiated markets. His model predicts that buyers with high-search costs will opt for auctions over private sales because auctions offer higher payoffs (less search costs). Since auctions tend to attract this group of high-search cost buyers, prices will be higher, on average, for properties sold at auctions. Quan empirically verifies this prediction by estimating a hedonic regression with vacant lot sales data in the Austin, Texas metropolitan area. Accounting for the self-selection choice of auctions over private sales, the author discovers that the sample of vacant lots was sold for approximately 30% more at auctions than private sales. This finding is in contrast to Mayers (1998) and Allen and Swisher (2000).

More recently, Chow, Hafalir, and Yavas (2015) theorized that, compared to negotiated sales, auctions tend to generate higher sale prices when the demand for the asset is strong, when the asset is more homogeneous and when the asset attracts buyers with higher valuation towards the auctioned properties. The authors provide empirical support for these predictions using data on residential properties that were listed for auctions in Singapore during the period 1995Q3 and 2006Q4.

Apart from the literature on price differential between auctions and negotiated sales, this study is also related to the foreclosure discount literature. Prior empirical findings

consistently indicate foreclosed properties were transacted at 4%–24% discounts relative to non-foreclosed properties. Recent research by Clauretje and Daneshvary (2009) attempts to disentangle the effects of stigma from the effects of proxy mentioned earlier. In order to isolate these two effects, the authors considered additional controls that were untested in previous literature:

- (a) control for variables that capture the proxy effect or the negative building or neighbourhood characteristics of foreclosed properties, i.e., property condition, transaction type (cash vs financing sale) and vacancy status of the foreclosed properties;
- (b) account for the endogeneity of the time that the properties stayed on the market (TOM) in the property price equation using a two-stage least squares (2SLS) instrumental variable (IV) approach; and
- (c) correcting for spatial interdependence among cross-sectional housing units of observations using a generalized spatial two-stage least squares (GS2SLS) approach.

Accounting for the above controls, the authors reveal that estimates of foreclosure discounts drop to 7.9%, which is about one-third lower than those reported by previous studies.

The foregoing literature review leads to the following hypothesis:

That the listing prices of auctioned properties are lower than non-auctioned properties

In other words, it may be hypothesised that auctioned properties carry a lower listing price and, hence, a significant negative regression coefficient for the auction dummy may be expected. The negative impact of auction sales could either be due to stigma effect or negative property and/or neighbourhood characteristics of the auctioned properties. However, if the property or auction market is efficient, competition among buyers would lower the opportunities for excess return, then auction sales would not affect listing prices and, hence, a significant regression coefficient for auction dummy is not expected.

## Method

The data analysed in this paper consists of 722 apartment properties posted on *iProperty.Com* during 2009–2014 in Kuala Lumpur. *iProperty.Com* is a real estate website that lists both auctioned and non-auctioned properties in a multiple listing style (MLS) format similar to those in the USA and Canada. The research focuses on apartment properties, as opposed to landed residential properties, to minimize the possibility of omitting important property attributes. Each auctioned property in the sample is matched with a non-auctioned property located in the same apartment block. This sampling strategy essentially nets out the unobserved neighbourhood and locational characteristics between auctioned and non-auctioned properties.

To further investigate the impact of foreclosure status on property listing prices, a hedonic regression is estimated for properties listed in the auction market and properties listed in the private negotiated market. Property listing prices are regressed on the *Foreclosure* dummy taking value of one if the property was listed on the auction market and zero otherwise. This is the key variable of interest that accounts for the method of sale. The timing of the property listing is controlled by year dummies from 2009 to

2014. The control variables include property and locational attributes such as Property Size, the tenure of the property (*Tenure*) and distance to KLCC Petronas Twin Tower (*Distance*) as proxy to city centre. A further 23 amenities variables are included in the expanded regression model to control for quality differences of the properties.

One concern with this empirical framework is that, while listing price refers to reserve price in the case of auctioned properties, the same refers to asking price when it comes to non-auctioned properties. The two may not be comparable since reserve price is the minimum price set according to property's appraisal value (for first time auction) while asking price is set by the sellers and is usually negotiable. Sellers may sell at the asking price or above (or below) the asking price when the demand is high (or low). While it would be preferable to compare the selling prices of auction and non-auctioned properties, such data is not available.

## Results

Table 1 contains summary statistics for all variables used in the empirical analysis. Following the sampling strategy, auction sales and private sales are equally distributed at 361 each from the total 722 properties analysed in this paper. The average listing price is RM160,682. The resulting mean listing price in our auctioned sample is RM143,566. The corresponding listing price for our non-auctioned sample is RM177,799. The difference in mean listing price between the two subsamples is significant at the 1% level (not reported here). This univariate test provides preliminary support to the hypothesis that auctioned properties carry a lower listing price as compared to non-auctioned properties. As expected, the mean tests for all other building, locational, amenities variables do not display significant variation across the two subsamples suggesting that the samples of auctioned properties are of the same quality as their non-auctioned counterparts.

This offers a unique opportunity to explore the impact of stigma effects given that the proxy effects are broadly the same between the two subsamples (Mean test results are available upon request from the authors). Turning to the control variables, the average distance between the locations of the properties to the city centre is 12.44km ranging from 0.65km to 26.2km. On average, 41.6% of the apartments carry freehold titles. Facilities or amenities that are available for more than half of the apartments in the sample are cafeteria, covered parking, mini market, playground, 24hr security, business centre, bus station, KTM train station, primary and secondary schools.

The estimation results are presented in Table 2. Model 1 is the base model to measure the relationship with foreclosure status (*Foreclosure*) and property listing price controlling for property and locational attributes. Model 2 incorporates 23 amenities variables such as facilities in the apartment building and the existence of schools or train stations within 5 km from the apartment building. Both models achieve a reasonable fit, explaining about 66% and 70% of the variation in the natural logarithm of listing price.

Consistent with mean test results in Table 1, a negative and significant auction coefficient at the 1% level in Model 1 is observed. The coefficient of *Foreclosure* implies a discount of approximately 33.8%. This equates to a discount of RM54,311 based on the average listing price in our sample. All controls in Model 1 are statistically significant at the 1% level and adhere with the expected signs. Properties that are larger in size (*Property Size*), nearer to KLCC Petronas Twin Tower (*Distance*) and with freehold status (*Tenure*) are found to set higher listing prices. Turning to Model 2,

Table 1. Summary statistics.

	Definitions	Mean	S.Dev	Min	Max
<i>Listing Price</i>	Property listing price (in RM'000)	160.7	126.7	25.0	1180
<i>Auction Sales Listing Price</i>	Property listing (reserve) price (in RM'000)	143.6	120.7	31.9	900
<i>Private Sales Listing Price</i>	Property listing (asking) price (in RM'000)	177.8	130.4	25.0	1180
<i>Property Size</i>	Land area of the property measured by square feet	802.4	188.9	475	1991
<i>Distance</i>	Nearest travelling distance (KM) of the subject property from KLCC Petronas Twin Tower (a proxy to city centre).	12.44	4.79	0.65	26.2
<i>Tenure</i>	Indicator variable taking value of one if the property is freehold, zero otherwise.	0.416	0.493	0	1
<i>Cafeteria</i>	Indicator variable taking the value of one if cafeteria is available in the apartment building, zero otherwise.	0.504	0.500	0	1
<i>Parking</i>	Indicator variable taking the value of one if covered parking is available in the apartment building, zero otherwise.	0.864	0.343	0	1
<i>Mini Market</i>	Indicator variable taking the value of one if mini market is available in the apartment building, zero otherwise.	0.529	0.499	0	1
<i>Playground</i>	Indicator variable taking the value of one if playground is available for the apartment, zero otherwise.	0.845	0.362	0	1
<i>Tennis Court</i>	Indicator variable taking the value of one if tennis court is available for the apartment, zero otherwise.	0.017	0.128	0	1
<i>24hr Security</i>	Indicator variable taking the value of one if 24- hour security is available for the apartment, zero otherwise.	0.817	0.387	0	1
<i>Jogging Track</i>	Indicator variable taking the value of one if jogging track is available for the apartment, zero otherwise.	0.343	0.475	0	1
<i>Swimming pool</i>	Indicator variable taking the value of one if swimming pool is available for the apartment, zero otherwise.	0.078	0.268	0	1
<i>Gymnasium</i>	Indicator variable taking the value of one if gymnasium is available in the apartment building, zero otherwise.	0.047	0.212	0	1
<i>Sauna</i>	Indicator variable taking the value of one if sauna is available for the apartment building, zero otherwise.	0.006	0.074	0	1
<i>Barbecue Area</i>	Indicator variable taking the value of one if barbecue facility is available for the apartment, zero otherwise.	0.055	0.229	0	1
<i>Squash Court</i>	Indicator variable taking the value of one if squash court is available for the apartment, zero otherwise.	0.008	0.091	0	1

(Continued)

Table 1. (Continued).

	Definitions	Mean	S.Dev	Min	Max
<i>Wading Pool</i>	Indicator variable taking the value of one if wading pool is available for the apartment, zero otherwise.	0.033	0.179	0	1
<i>Salon</i>	Indicator variable taking the value of one if salon facility is available in the apartment building, zero otherwise.	0.044	0.206	0	1
<i>Business Centre</i>	Indicator variable taking the value of one if business centre is available in the apartment building, zero otherwise.	0.512	0.500	0	1
<i>Bus</i>	Indicator variable taking the value of one if auctioned property is located within 5KM from the bus station, zero otherwise.	0.837	0.370	0	1
<i>Monorail</i>	Indicator variable taking the value of one if auctioned property is located within 5KM from the monorail station, zero otherwise.	0.125	0.331	0	1
<i>LRT</i>	Indicator variable taking the value of one if auctioned property is located within 5KM from the LRT station, zero otherwise.	0.014	0.117	0	1
<i>ERL</i>	Indicator variable taking the value of one if auctioned property is located within 5KM from the ERL station, zero otherwise.	0.072	0.259	0	1
<i>KTM</i>	Indicator variable taking the value of one if auctioned property is located within 5KM from the KTM station, zero otherwise.	0.681	0.466	0	1
<i>Primary</i>	Indicator variable taking the value of one if auctioned property is located within 5KM from the primary school, zero otherwise.	0.953	0.212	0	1
<i>Secondary</i>	Indicator variable taking the value of one if auctioned property is located within 5KM from the secondary school, zero otherwise.	0.715	0.452	0	1
<i>Tertiary</i>	Indicator variable taking the value of one if auctioned property is located within 5KM from the university, zero otherwise.	0.188	0.391	0	1

Source: *iProperty.com*.

the key results are robust to the inclusion of a battery of amenity variables. Under this specification, auctioned properties are listed at 33.4% discount against properties in the private negotiated market. Of the 23 amenities variables, only 11 are significant. Amenities such as *Mini Market*, *Playground*, *Swimming Pool* and *Gymnasium*, *Squash Court* and *Monorail* are positive and significantly related to listing price. Contrary to our expectation, *Tennis Court*, *24hr Security*, *Salon* and *Business Centre* contribute to reduction in property listing price.

### Discussion of results

As mentioned earlier, an important concern in this research is that the reserve price for auctioned properties may not be comparable to non-auction properties' asking price. This is because the reserve price (based on the property's appraisal value) of an auctioned property is likely to be lower than the market value as appraisers will have to adjust for lenders' short marketing period (Shilling et al., 1990). Asking price, on the

Table 2. The impact of foreclosure status on property prices.

	Model 1		Model 2	
	Coefficient	T-statistic	Coefficient	T-statistic
<i>Intercept</i>	-0.078	-0.11	0.043	-0.06
<i>Foreclosure</i>	-0.338***	-11.10	-0.334***	-11.59
<i>Log (Property Size)</i>	1.858***	19.04	1.876***	20.69
<i>Log (Distance)</i>	-0.423***	-8.52	-0.438***	-8.23
<i>Tenure</i>	0.179***	5.70	0.209***	6.11
<i>Cafeteria</i>			-0.083	-0.98
<i>Parking</i>			0.113	1.38
<i>Mini Market</i>			0.283***	2.75
<i>Playground</i>			0.169**	2.11
<i>Tennis Court</i>			-0.305**	-2.43
<i>24-hr Security</i>			-0.269***	-3.38
<i>Jogging Track</i>			0.001	0.01
<i>Swimming pool</i>			0.161***	2.60
<i>Gymnasium</i>			0.613***	2.64
<i>Sauna</i>			-0.533	-1.32
<i>Barbecue Area</i>			-0.059	-0.60
<i>Squash Court</i>			0.534**	2.18
<i>Wading Pool</i>			0.019	0.08
<i>Salon</i>			-0.412***	-3.18
<i>Business Centre</i>			-0.177***	-2.69
<i>Bus</i>			-0.005	-0.09
<i>Monorail</i>			0.152***	2.66
<i>LRT</i>			0.104	1.46
<i>ERL</i>			0.110**	2.54
<i>KTM</i>			0.037	1.09
<i>Primary</i>			-0.095	-1.63
<i>Secondary</i>			-0.035	-0.86
<i>Tertiary</i>			0.044	1.04
<i>Year Dummies</i>	Yes		Yes	
No of Obs	722		722	
R <sup>2</sup>	0.66		0.70	

Notes: OLS models are estimated where the dependent variable is the natural logarithm of listing. T-statistics are reported in the parentheses with robust standard errors. \*indicates significance at 10%, \*\*at 5% and \*\*\*at 1%.

Source: *iProperty.com*.

other hand, tends to be set above or equal to the market value and is adjusted downward during the negotiation process. The 33.4% discount observed could actually capture this difference since asking price tends to be higher than reserve price.

To mitigate the downward bias of auction listing price (reserve price), subsample analysis on 26 auctioned properties is conducted where information on sale prices is available. These sale prices are extracted from *Lelongtips.com*, an online property auction portal that collects Malaysian property auction data. This results in 52 observations or 7.2% of the full sample. Table 3 illustrates that auctioned properties are traded at a discount of 22.7% which is 11.7% lower than the full sample results indicating that the concern of downward bias caused by reserve price is indeed valid. Nevertheless, the adjusted 22.7% discount is still not trivial considering that it equates to a discount of RM36,475 based on the average listing price of non-auctioned properties in the sample.

Table 3. Subsample test of auctioned properties with selling price.

	Coefficient	T-statistic
Intercept	-1.891	-1.01
Foreclosure	-0.227**	-2.63
<i>Log(Property Size)</i>	2.253***	8.98
<i>Log(Distance)</i>	-0.518***	-4.51
<i>Tenure</i>	-0.041	-0.50
<i>Year Dummies</i>	Yes	
No of Obs	52	
R-squared	0.83	

OLS models are estimated where the dependent variable is the natural logarithm of listing price. T-statistics are reported in the parentheses with robust standard errors. \*indicates significance at 10%, \*\*at 5% and \*\*\*at 1%.

Source: *Lelongtips.com* and *iProperty.com*.

*Property Size* and *Distance* remain significant and carry the correct signs as in the full sample. *Tenure* however turns insignificant with a negative sign.

Clauritie and Daneshvary (2009) are critical of the huge discount obtained in one selling method over another. The authors argue that real estate market in the USA is unlikely to be so inefficient as to allow for such excess return. This argument may not hold in Malaysia where information costs borne by auction bidders are clearly higher than bidders in the USA due to the following two reasons. First, auctions in Malaysia do not carry a clean title and there is no guarantee of vacant possession. Thus, the new owner must evict occupants, if any, at his or her own cost. This is unlike foreclosure sales in the USA where buyers are assured of a clean title (Allen & Swisher, 2000). Secondly, bidders typically have no opportunity to view the interior of the auctioned properties. This is in contrast to developed markets where prior viewing of the property is a norm. Therefore, the discount suffered by sellers who dispose of their properties via auction likely serves to compensate winning bidders for information asymmetry during the auction process.

It was contended, above, that the sample provides a cleaner test to distinguish between “proxy effect” and “stigma effect”. While the regression models have controlled for most of the building and locational qualities (proxy effect), it is still not possible to control for the properties’ physical conditions due to data constraints. Clauritie and Daneshvary (2009) are able to control for property conditions based on assessment given by the listing agent/broker at the time of listing. Foreclosed properties may have not been properly maintained as owners who anticipate foreclosure have no incentive to maintain the properties prior to the foreclosure process. Therefore, it is not possible to totally rule out the argument that the discount observed is due to negative property characteristics associated with auctioned or foreclosed properties.

## Conclusions

This study examined the impact of sale methods (auction sales versus private sales) on properties’ listing price. Since all auctioned (non-auctioned) properties in the sample are foreclosure (private) sales, this study also is a test of the impact of foreclosure status on property prices. The results show that auctioned properties are listed at a 33.4% discount as compared to non-auctioned properties located in the same building block.

While it is not possible to totally rule out the “proxy effect”(i.e., negative property or neighbourhood conditions associated with auction as a contributing factor to this price discount),it may be contended that this effect tends to be minimal since this research is comparing apartments located in the same building block which share the same neighbourhood and locational attributes. It is considered that “stigma effect” and the imperfections of the Malaysian auction market are likely to be the factors contributing to this price differential.

The above results have important policy implications because the discount is not trivial for the average low income household in Malaysia. To put the results into perspective, the average discount of RM36,475 (subsample) and RM54,953 (full sample) constitute of 35% to 53%, respectively, of the average gross annual income of a household in Kuala Lumpur in 2012 (Department of Statistics, 2013). The Malaysian Government should, therefore, consider intervention to revise the existing auction laws such as by making sellers responsible for providing good property title and allowing a viewing period for the auctioned properties in order to reduce the price gap between the auction and private sales markets.

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### Notes on contributors

Woei Chyuan Wong, School of Economics, Finance and Banking, Universiti Utara Malaysia, 06010 Kedah Malaysia.

Pooi Leng Ng, Centre for Real Estate Studies, Faculty of Geoinformation and Real Estate, University Technology Malaysia.

Janice YM Lee, Centre for Real Estate Studies, Faculty of Geoinformation and Real Estate, University Technology Malaysia.

Md Nasir Daud, Department of Estate Management, University of Malaya, 50603 Kuala Lumpur, Malaysia.

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