Can Government-Sponsored Museum Exhibitions Influence Art Market? An Empirical Investigation in Art Auction Market

Yu-Hsi Liu (Adjunct Assistant Professor, National Sun Yat-Sen University)*
Chi-Jung Lu (Master student, National Sun Yat-Sen University)
Chien-Yuan Sher (Assistant Professor, National Sun Yat-Sen University)

Abstract

Whether government-sponsored museums can influence art market is an empirical question. This paper investigates the relationship between government-sponsored museum exhibitions and auction price of the artworks. We focus on the artists who exhibited on the Taipei Fine Art Museum (TFAM) and investigate whether the exhibitions at TFAM influence the hammer prices of their artwork in the following auctions. We link the TFAM exhibition data from 2000 to 2015 to the global auction data at www.artprice.com dated from 2000 to 2016. The Hedonic model and Tobit model are employed to test the relationship between hammer price and exhibitions.

The results imply that museum exhibitions do not have direct influences on art auction price. However, we find evidence of an indirect "certification" effect of TFAM exhibitions. Exhibitions do not have significance on the hammer price, but the interaction terms between exhibition and other pricing factors are significant. Once an artist has been "certified" by museum exhibitions, his/her artwork will be evaluated by the common industry practice such as the pricing factors. These results also support the claim that government-sponsored museum exhibitions are leading indicators to auction market performance.

Keywords: Art auctions, museum exhibition, art price, hammer price, credence good certification

* Correspondence to: Yu-Hsi Liu, laches2@gmail.com.

1. Introduction and Theory Base

This paper investigates the relationship between government-sponsored museum exhibitions and art auction market. Government intervention is common in the cultural sectors. As a form of subsidy, government-sponsored museums can promote a certain type of art by selecting or screening artists into their exhibitions. However, whether the exhibitions in government-sponsored museums have influence in art market is an empirical question waiting to be investigated.

There are several theories to explain the role of museums in the art market. Museums can be viewed as third-party certification institutions which provide professional judgments on art. Art is an example of credence goods and consumers are uncertain about product quality before and even after consumptions. Moreover, there could be serious information asymmetry problems between buyers and sellers. To relieve the problems of uncertainty and information asymmetry, buyers may seek certifications from museums. Artists who are selected into the museum exhibitions can be viewed as "certified", hence their art piece have greater chance to sell out at a higher hammer price.

Another theory emphasizes the "stickiness" of art taste. Art is also an example of "rational-addicted" goods. The law of diminishing marginal utility may not apply to additional goods; when consumers consume more additional goods, they enjoy the goods more and their marginal utility increases. We need time and product experience to cultivate a "taste" of art. Once a taste is built, consumers may stick to the taste and enjoy a certain type of art. As reliable third-party institutions, museums may lead consumers to get "addicted" to a certain type of art by promoting particular artists in their regular exhibitions. In this sense, we are supposed to overserve a positive relationship between exhibitions frequencies and art auction price for some given art type.

However, an alternative hypothesis suggests that art auction market participants are professionals, or at least enthusiastic amateurs. Most of the art consumers have invested in knowledge and cultural capital; they have acquired certain taste. In this sense, these consumers may not need "certification" from museums and the market is

more likely to be the leader to the public sectors. Whether the market or the government takes the lead in art market is an interesting empirical question.

2. Data and Methodology

To investigate how government-sponsored museum exhibitions influence art auction market, we test whether the artists who have exhibited in Taipei Fine Art Museum are more likely to have their artwork sold out at a higher hammer price.

Taipei Fine Art Museum was the first museum in Taiwan built for contemporary art exhibitions. It is fully sponsored by both central and local government, though it also receives private donations in some specific projects. It curates expositions not for local artists but also for international artists. Taipei Biennial held at TFAM has become an important event in Asia art scene. It is one of the important contemporary art museums in Asia.

We focus on all the Taiwanese and Chinese artists who once exhibited at TFAM from 2000 to 2015. We then trace the performance of their art pieces in the global auction market. The chronological order of exhibition and auction is carefully identified; only the exhibitions *BEFORE* an artist firstly came to the auction market is counted.

We acquire their global auction data comes from www.artprice.com dated from 2000 to 2016. The data set has 22,123 auction observations in total, while 8,585 observations belong to the artists who have exhibited in Taipei Fine Art Museum from 2000 to 2015. The control variables include auction house location, size of the auction house, lot, reserve price, lot, year of creation, the medium and size of the art piece, the artist-specific characteristic variables and so-on. Serving as a price index (p_t), the time dummies are also included to control for the year of auction. The descriptive statistics is listed in Table 1.

We use both Hedonic model and Tobit model to investigate the relationship between hammer price and the independent variables. However, for those unclosed auctions, the hammer prices of the items are missing. The Hedonic regression drops

all the observations of unclosed auctions, while the Tobit model treats the unclosed auctions as censored data. The results of both models will present in the following sections.

The Hedonic model is as follows:

$$p_{it} = \beta x_i + p_t + \varepsilon_i + \varepsilon_{it}$$

where p_i is the fixed component of the price that reflects the "artwork quality" and p_t reflects the index of aggregate movements in prices. It captures both the unobservable time effects and the artwork-specific effects on price.

The Truncated Tobit model is as follows:

$$f(y_i | x_i) = \frac{1}{\sigma} \frac{\phi(c)}{1-\Phi(c)}$$

where y_i cannot be observed when $y_i < a$ and $c = \frac{x'_i \beta - y_i}{\sigma}$. The first moment condition shows that $E[y_i^* | y_i > a] = \mu^* + \sigma\lambda(\alpha)$. It captures the auction market fact that y_i, the hammer price, is missing for many observations.

3. Results and Implications

Both the results of Hedonic model and Tobit model show that variables of TFAM exhibitions are not significant to auction price. Table 2 presents the results of the two models. "How many times the artist has been selected to exhibition" is not significant either. The size and the area of art piece, which are usually considered to be basic pricing factors, are not significant either.

However, the significant interaction term indicates that TFAM exhibition may have indirect influence on the hammer price. The interaction term between the artwork size/area and "whether the artists exhibited" is positively significant to hammer price in both the models. The size and the area of the art piece are usually considered to be important basic factors to art pricing in common industry practice. Here is an Interesting implication of this result: only after an artist is "certified", his

artwork will be evaluated under the “industry common practice.” In contrast, if the artist has not been “certified” by museum exhibition, there is no “market consensus” on his artworks”. To conclude, museum exhibition can be viewed as a certification agency, but its influence is limited.

The frequency and the times of an artist being selected to the exhibitions are also important variables. In Table 2, “How many times the artist has been selected to exhibition” is insignificant in all models. The interaction term between “How many times the artist has been selected to exhibition” and the other pricing factors are also insignificant. No matter an artist is “certified” or not, the exhibition frequencies and times are insignificant to the hammer prices of his/her artworks. This result does not support the hypothesis of rational addiction.

To conclude, we find evidence of an indirect “certification” effect of exhibitions in a government-sponsored museum. This research is one of the pioneer research which provides empirical evidence on the influence of museums on the art auction market. These results support the claim that government-sponsored museum exhibitions may serve as a certification institution and has influence in art market. The result also indicates that that government-sponsored museum exhibition can be a leading indicator to auction market performance, yet the cause and causation relationship needs to be investigated further. The missing data problem still needs to be solved. Those missing data belong to unclosed transactions. The characteristics of the unclosed auctions need to be investigated further.

Table 1 The Descriptive Statistics of the Data Set

Variable	n	mean	s.d.	min	max
Born Year	22123	1927.037	15.93594	1871	1983
Lot	22123	620.2224	1656.105	1	72149
Creation Year	22123	1980.392	848.5757	1899	2015
Area	22123	5325.738	7810.474	48	280000
Volume	22123	24116.95	337673.8	171.5	27400000
The Lower bound of the Estimated Price	22123	55445.34	217496.3	3	8772000
The Upper bound of the Estimated Price	22123	77856.13	305494.1	3	11600000
Auction Year	22123	2009.173	5.875096	1986	2016
Hammer Price	22123	69763.33	333361.4	4	12400000

Table 2 The Results

Dependent Variable	Hedonic model		Tobit model	
	Coefficients	s.d.	Coefficients	s.d
Lot	-0.8	(0.7)	-1.6	(0.78)**
Creation Year	-246.73	(120.52)**	-187.67	(126.51)
Oil Painting	44489.38	(10367.49)***	32844.04	(9762.34)***
Wash Painting	39908.39	(10177.47)***	24504.97	(9726.72)**
Print	34661.2	(11140.48)***	16923.3	(10789.35)
Statue	28401.79	(17315.65)	22836.52	(12780.73)*
Area	0.18	(0.34)	0.65	(0.35)*
Volume	0.01	(0.01)		
The Lower Bond of Estimation	-0.41	(0.56)	-0.05	(0.02)**
The Upper Bond of Estimation	0.61	(0.41)	0.49	(0.02)***
Auction House	2553.59	(5643.97)	3817.02	(6254.79)
Auction Place(Taiwan)	1573.83	(4240.96)	20314.38	(4537.84)***
Auction Place (China)	6291.97	(4723.46)	15286.85	(5059.69)***
Exhibition Times	-184.74	(3074.72)	-1519.57	(3270.93)
Whether the Artist had exhibitions at TMAM	2060.7	(6512.19)	-1046.45	(6813.74)
The Interaction Term Between Area and Whether the Artist Exhibited	1.28	(0.4)***	1.43	(0.41)***
The Interaction Term Between Area and Whether the Artist Exhibited	14198.13	(6996.27)**	19794.35	(7696.25)***