An Empirical Comparison of Fine Prints Market and Conventional Financial Market Performance in the UK, USA, China, France and Germany

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ABSTRACT

Recently the art market has experienced almost unprecedented rises in valuation. Works of fine art selling at auction houses such as Christie’s and Sotheby’s have realised vast returns for their sellers. The fine art market has undergone significant growth and has attained a level of sophistication that can no longer be explained by irrational collectors’ exuberance. With uncertain stock market returns and the economic slowdown, especially in 2016, investors are more willing to seek alternative assets classes to fulfill their need to uphold their returns without taking on additional risk. Art as an alternative investment market has been debated for decades, however, the heterogeneity and the systematic risk of art remains a problematic issue that many researchers attempt to explore. Thus, this research aims to investigate the performance of the fine art prints market in comparison with the bond and the stock markets.

AIM & OBJECTIVE

It will focus on both individuals and institutions to make more sustainable long-term investment decisions that will bring benefit for both business and cultural activities. This will allow a better understanding of what specific financial decisions that most of the investors need to consider when investing in fine prints. This research will present a comprehensive analysis of the determinants of prices and the risk and return of the fine art prints. The hedonic regression with the time-dummy approach has been applied to construct the fine art prints price along with other quality variables to make more thorough analysis of the market.

DATA SAMPLING PROCESS

Stage 1

Cluster 1 is the sample for Paper 1
Cluster 2 is the sample for Paper 2
Cluster 2 sample (completed)
Cluster 2 sample (incomplete)

Stage 2

Cluster 1: Five Artists
Observation 12083 entries
Cluster 2: Artist name starting from "A" to "J"

Stage 3

Cluster 3: Five Artists
Observation 19963 entries

Stage 4

Cluster 1: Five Artists
Observation 12083 entries
Cluster 2: Artist name starting from "A" to "J"

Stage 5

Cluster 3: Five Artists
Observation 19963 entries

Stage 6

Cluster 1: Five Artists
Observation 19963 entries

RESEARCH MODEL

(1) Hedonic Regression with Fixed Effect (Artist) for Intrinsic & Extrinsic Characteristics

\[
\ln(p_{ij}) = \beta_0 + \sum_{k=1}^{K} \beta_k x_{ik} + \sum_{l=1}^{L} \alpha_l Y_{il} + \epsilon_{ij}
\]

(2) OLS Regression with Fixed Effect (Upper Hammer Price, Sold) with Estimator A & Estimator B

\[
\ln(p_{ij}) = \beta_0 + \beta_1 \text{size} + \beta_2 \text{price} + \beta_3 \text{size} \times \text{price} + \gamma \text{fixed effect} + \epsilon_{ij}
\]

SIMPLIFIED VARIABLES LIST

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<thead>
<tr>
<th>Dependent Variable</th>
<th>Estimative Variables (4)</th>
<th>Dummy Variables (23)</th>
<th>Time Dummy Variables (3)</th>
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<tr>
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<td>Executive Year (1)</td>
<td>Sig1 (6)</td>
<td>Period 1 (18)</td>
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<td>Size (1)</td>
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<td>Extrinsic Value (24)</td>
<td>Estimate price (2)</td>
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<td>Country (5)</td>
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<tr>
<td>Artist (5)</td>
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</tbody>
</table>

CONTINUOUS VARIABLES DESCRIPTION

- Pre-sale estimate

The hammer ratio is the hammer price divided by the geometric mean of the pre-sale high and low estimate price, which is defined as follows:

\[
\text{Hammer Ratio} = \frac{\text{Hammer Price}}{\text{Median of Pre-sale High and Low Estimate Price}}
\]

The pre-sale estimate A, based on the calculation of geometric mean of the pre-sale estimate price, then transform it into logarithm:

\[
\ln(A) = \ln(\text{mean}) + \ln(\text{std}) + \epsilon
\]

The pre-sale estimate B, is the estimated natural logarithm of the average of the high and low estimate price, based on the calculation of geometric mean of the pre-sale estimate price, then transform it into logarithm:\n
\[
\ln(B) = \ln(\text{average}) + \ln(\text{std}) + \epsilon
\]

The size is calculated in the natural logarithm of the surface area, which can be transformed in the following equation:

\[
\ln(S) = \ln(\text{surface area}) + \ln(\text{height} \times \text{width})
\]

REFERENCE


CONTRIBUTIONS

The main contribution for this first paper:

- To provide empirical results of the price determinants of fine artworks, in particular, for fine art prints that are auctioned in the UK, USA, China, France and Germany from 1996 to 2017.

- A new pre-sales estimator based on the hammer ratio of McAndrew & Thompson (2004) has been created to examine the sales effect on the logarithm price of fine art prints.

- To present a comprehensive analysis of how the artwork can be the best risk diversified investments in a portfolio.

- To present an empirical analysis of the performance of the conventional financial market, specifically for stock and bond markets in comparison with the fine art prints market.

Future research may also include in this research such as the extent of literature of art valuation, art price determinants in auction houses, art transaction cost, taxation and law in auction houses.

FINDINGS & DISCUSSIONS

- Aggregate Sale by Auction Location

Graph 1 illustrates the aggregate sales of each artist by auction location from 1996 to 2017. Overall, the sales in Christie’s London (22%), Christie’s New York (12%), Sotheby’s London (21%), Sotheby’s New York (12%) and Phillips in London (17%) are the auction houses that have the most frequent sales from the sample period.

- Aggregate Sales for Sample Artists from 1996 to 2017

Graph 2 shows the aggregate sales price of each individual sample artist from 1996 to 2017. These five artists are chosen as their works have been sold at least 1000 times during the sample period. DH, FB, AG, ME and HB achieved the highest prices of $4,640,579, $2,171,674, $5,235,221, $4,172,389 and $2,727,994 respectively. It is worth noting that the set of data is up until the current sales year, there are insufficient data from 2017 onwards that explains the price fall sharply in the end of the graph.