

Heritage as an Alternative Driver for Sustainable Development and Economic Recovery in South East Europe

Investigating art market efficiency

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Abstract

This paper adds to the stream of research dealing with the art work by investigating the returns obtained by auction houses. We are interested in testing the market efficiency of the most influential auction house as a signal for art market robustness. The interest of this paper is focused on how investors use information regarding the activity of four major auction houses - Sotheby's, Turners Auctions Ltd, Mallett PLC and Mowbray Collectables - and how this information is reflected in the stock price. After performing several tests of market efficiency (Lo and MacKinlay test, Joint Wright test, Automatic Variance Ratio test), the results are discussed and interpreted. While some stocks exhibit market efficiency, others present a slow assimilation of information in the stock price and hence past information can be used to make predictions.

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1. Introduction

Investing in art-works can represent a sound alternative for portfolio diversification as art sales indices present average annual return rates of 10% in the last frothy years. However, recent research shows that when it comes to selling and buying artworks investors tend to overestimate the returns and underestimate the risks involved (Korteweg, Kräussl and Verwijmeren, 2013). The figures seem to be altered by a selection bias significantly influencing repeated sales indices. As such, true values of return rates are about 6,5% implying that diversifying by the means of art investment will not lead to an outperforming portfolio. The issue of art investment is also tackled by other studies that look at repeated sales for artworks. Renneboog and Spaenjers (2009), investigate the returns of art investments by constructing a hedonic price index that results from repeated sales of oil paintings, watercolors and

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drawings. The study uses transaction data for more than 10.440 artists belonging to different periods and art movements. The results present that during the period 1982-2007 art prices have risen on a yearly basis by 3.97% (5.19% in geometric mean) in real USD. While this figure seems to outperform the return of physical assets like gold (2.35%), commodities (3.3%) and US real-estate (1.06%) of financial assets like T-Bills (1.39%). However, buying and selling art is less profitable when compared to the risk-return profile of equity investments like S&P 500 (6.63%) or Global Stocks (6.34%).

The former optimistic outlook is challenged by Korteweg et al. (2013) who argue that by constructing the hedonic price index the obtained return values can be inflated due to selection bias. By taking to account the category of illiquid assets, the authors show that for the years 1972-2010 the average annual return for art investments drops from 10% to 6.2%, and the Sharp ratio decreases from 0.24 to 0.04. Under this scenario, investing in stock (10.95%), corporate bonds (8.94%) and commodities (10.21%) is more appealing than assuming a passive investment strategy in art.

This paper adds to the stream of research dealing with the art work by investigating the returns obtained by auction houses. We are interested in testing the market efficiency of the most influential auction houses as a signal for art market robustness. Typically an action house operates between three types of activities: it intermediates between different buyers and sellers authenticated work of arts by receiving in consignment, marketing and selling in auctions various artwork; it can act on its own name and can strategically buy and resell or retail artworks or chosen commodities, it can support art related financing activities by facilitating loans secured by artworks to clients in need for liquidity.

The most common sources of revenues for action houses are:

- auction commission revenue- derived from the buyer's premium by the and seller's commission
- private sale commission revenues
- revenues obtained from selling of owned artwork or inventories
- finance revenues

Considering all this, the interest of this paper is focuses on how investors use information regarding the activity of four major auction houses - Sotheby's , Turners Auctions Ltd, Mallett PLC and Mowbray Collectables - and how this information is reflected in the stock price.

2. Methodology

This paper studies the efficient market hypothesis using the following tests: unit root and correlation tests, Lo and MacKinlay, Chow Denning, Automatic Variance Ratio test and Joint Wright test.

The ADF and PP tests are used to test the null hypothesis of a unit root, with the alternative that financial series are stationary. In order to test the existence of linear dependencies we have used the Ljung Box (1978) test. The null hypothesis is no autocorrelation of returns up to order k . The test is determined according to the mathematical expression:

$$Q_{LB} = m(m+2) \sum_{j=1}^k \frac{\rho_j^2}{m-j} \quad (1)$$

where ρ_j is the j -th autocorrelation and m is the number of observation (Enowbi et al., 2009). Another test used to identify the independence of successive price changes is Lo and MacKinlay (1988) test, that takes into consideration both the assumption of homoscedasticity and the assumption of heteroskedasticity. The first statistical test that takes into account the presence of homoscedasticity has the following form:

$$Z(q) = \frac{VR(q)-1}{\phi(q)^{1/2}} \sim N(0,1) \quad \text{where } \phi(q) = \frac{2(2q-1)(q-1)}{3qT}. \quad (2)$$

The second statistical test that takes into account the presence of heteroskedasticity, is given by:

$$Z^*(k) = \frac{VR(q)-1}{\phi^*(q)^{1/2}} \quad (3)$$

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