

Brief description of research project ‘Valuation and Appreciation of Art’

Christophe Spaenjers
Tilburg University
c.spaenjers@uvt.nl

Supervisor: Luc Renneboog
Tilburg University
luc.renneboog@uvt.nl

Research questions

Modern economics of art is concerned with how the returns on art compare with those of financial markets and what are the main determinants of art prices. Ginsburgh (2001) reports that these economic questions have not been answered satisfactorily.

To study the price formation in art markets, I construct a price index by school of art. As art objects are heterogeneous, unique and illiquid assets, this is not trivial. Ginsburgh et al. (2006) list the desired properties of a solid art price index: it must be based on reliable and publicly available price information, address econometric issues, try to avoid selection biases and distinguish different categories. While the auction system complicates the calculation of art returns (e.g. due to selection biases (Mei and Moses, 2002)), auction records still contain the most accurate information on the value of art. The construction of the price index will make it possible to answer the first research question: *How did art prices/returns (by art school) evolve over the past century?* (RQ1)

A related question in the economics of art concerns the efficiency of art markets. Anecdotal evidence suggests the existence of inefficiencies and price bubbles (Baumol, 1986; Pesando, 1993). We therefore investigate: *To what extent are art markets efficient?* (RQ2)

Given that art returns vary over time, it is possible that art markets are fuelled by other markets. Goetzmann (1993) argues that there exists a wealth creation effect: art prices follow stock markets. Also the rise of new world economies (e.g. China, India), economic slowdowns, and other macro-economic evolutions may influence art prices. *Do stock markets and macro-economic evolutions instigate art markets?* (RQ3)

Even though high financial returns are an important motive for the acquisition of art, it is still unclear to what extent art is a rational investment choice. The art returns derived from an art price index can now be used to consider art from an investment perspective: is art a good investment or does it merely deliver non-pecuniary income (as beauty is in the eye of the beholder)? The research question is: *How does the risk-return trade-off of art portfolios compare to that of financial assets?* (RQ4)

The observed low correlation of art with other asset classes may give rise to portfolio diversification benefits. Using Markowitz’s mean-variance efficient frontier framework, it is

possible to investigate the following research question: *To which extent can art promote efficient diversification of asset portfolios?* (RQ5)

A general shortcoming of most art return studies is the disregard of the underlying behavior of various actors (Frey and Eichenberger, 1995). Some inefficiencies are induced by the fact that many collectors are not profit-oriented. Other persisting anomalies seem at least partly influenced by psychological issues. Anomalies include the “masterpiece effect”, violations of the “law of one price”, the “declining price anomaly”, and “burned” paintings (Ashenfelter and Graddy, 2006). Prospect theory (Kahneman and Tversky, 1979), which deals with the psychological analysis of value, has many promising applications in art markets. Genesove and Mayer (2001) show that loss aversion determines seller behavior (in the housing market). Also, the price of an art object may depend on reference points such as the last observable price/estimate (Beggs and Graddy, 2005). I therefore ask the following question: *What is the effect of loss aversion and reference dependence on art prices?* (RQ6)

Most anomalies, induced by irrational behavior, are observable in the market. However, we also want to investigate how art is valued – or appreciated – by individuals outside the investor-framework. Experimentation can be used to trade off the public’s opinion on various small collections of paintings (by art school) and its willingness to pay to see such a collection. Museums and galleries, as well as public and private parties subsidizing the arts, are interested in the question: *To what degree are art paradigms appreciated by individuals?* (RQ7)

Data & Methodology

To construct a price index (see RQ1), I employ Hislop’s Art Sales Index, which consists of 3 million entries (title, auction price, artist name, physical characteristics, date and location of sale, low and high estimates). Two approaches are possible: (i) a repeat-sales regression and (ii) a hedonic regression. Although a repeat-sales regression explicitly controls for differences in quality, it does so at the cost of discarding the majority of the data, as a high proportion of the auctioned art never returns to the art market. In hedonic regressions, all items are valued for their “utility-bearing” characteristics. More concretely, hedonic pricing can be used to determine the standardized price of each art object, stripped of all its value-determining characteristics, such as artist, style, dimensions, etc. I use this last approach to estimate a solid art price index. When testing for market efficiency (RQ2), I use autocorrelation coefficients, runs and regressions on lagged returns. The impact of stock markets and other macro-economic factors (RQ3) can be measured using time series techniques; e.g. co-integration and vector autoregression models. In the analysis of the financial characteristics of art (RQ4-5), I apply various financial tools (CAPM and more advanced asset pricing models, Sharpe and Treynor ratios, Markowitz’s mean-variance model). For the investigation of loss aversion and reference dependence (RQ6), I start from prospect theory, and its (empirical) applications by e.g. Genesove and Mayer (2001). Carefully designed behavioral experiments will help to answer RQ7.

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