E C O N O M I C S B U L L E T I N

On the valuation of psychic returns to art market investments

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Abstract

Investing in art objects yields financial and psychic returns. The psychic returns arise since art has a superior consumption good aspect as well. The question is whether it is possible to measure the psychic returns. One valuation method for estimating the psychic returns to investing in artworks is their rental price. Here, we make use of the prices charged by a Canadian fine art company for its art rental services and calculate the implied psychic returns to be about 28 percent. Next, we review the finance-theoretic approaches to measuring the psychic returns to investing in artworks. We follow Hodgson and Vorkink's (2004, Canadian Journal of Economics) suggestion that the alpha parameter in the CAPM captures the extent of net psychic returns. The evidence on alpha from the art market applications of the CAPM coupled with the transaction cost data from international art auctions also suggests that the psychic returns to investing in artworks might amount to about 28 per cent.

Earlier versions of this paper were presented at the Turkish Congress of Aesthetics, organised by SANART and the Middle East Technical University (METU) in Ankara – Turkey (November 22-24, 2006) and at the 3rd European Workshop on Applied Cultural Economics (EWACE) at the University of Oviedo, Avilés, Asturias, Spain (June 14-16, 2007). We thank Víctor Fernandez-Blanco and the participants of the sessions for their helpful comments and suggestions.
Citation: Atukeren, Erdal and Aylin Seçkin, (2007) "On the valuation of psychic returns to art market investments." *Economics Bulletin*, Vol. 26, No. 5 pp. 1-12
Submitted: November 13, 2007. **Accepted:** December 19, 2007.
URL: http://economicsbulletin.vanderbilt.edu/2007/volume26/EB-07Z10027A.pdf

1. Introduction

The motives for purchasing objects of art are various. For some, the ownership of a painting is first of all an aesthetic issue. Whatever the price paid or whatever the consensus view on the aesthetic value of that painting, the personal satisfaction gained through aesthetic appreciation is the most important. As Collingwood (1938) states, the aesthetic value and aesthetic appreciation can be different.[1] Apart from pure personal tastes, the ownership of a piece of art might represent prestige for the owner. In this sense, an art object can be seen as a superior consumption good. This is true not only for individuals, but also for corporations which decorate their office rooms and walls with paintings, sculptures, etc. In this respect, art objects might also be considered as complementary goods. The same logic extends into the field of architecture. A house or office building made by a famous architect or one with historical value might add to the image of the owner vis-à-vis the business partners, customers, or the general public. Among other reasons for the purchase of art objects, private persons or corporations might do so with the motive of sponsoring arts and supporting artists. This might as well have an altruistic nature, but some personal or public relations image and prestige effect can also exist behind it.[2] Yet, some others may buy pieces of art with the idea of making financial gains as the price of the object purchased may increase over time. As such, art objects become a financial investment alternative.

Indeed, the motives discussed above are most likely to be interrelated. For example, even if a painting is bought for the sole purpose of aesthetic appreciation, the owner may still wish the painting's value to increase in the future. At the other extreme, there now exist art funds in the financial markets, in which one can invest without actually physically owning any artworks. The motive is then mostly financial.[3] In any case, whatever is the true motive, the prices of art works are subject to change, which means that there is a financial element to purchasing art works. Indeed, the very decision to buy a piece of art is an economic decision since the concept of opportunity cost, which is central to economics, applies. That is, the money spent on that particular piece of art could have been used for an alternative. The alternative might have been another painting or sculpture, a new house or car, or investing in the stock market, among others.

Overall, it can be said that the ownership of art objects yields two types of returns: psychic and financial. The psychic returns include, but not limited to, aesthetic returns and any other prestige and complementarity effects. Financial returns, on the other hand, relate to the change in the price of the art objects. The price changes can be actual market prices or changes in the expert opinion. In general, it is easier to quantify the financial returns than the psychic returns to owning art objects.[4]

The question is whether it is also possible to quantify the so-called psychic returns. In the literature on the economics of art, various propositions were made on how to measure the psychic returns. Among different alternatives, the willingness-to-pay a rental fee for an art object is a promising one, as renting or leasing an art object involves the possession of the object without having its actual ownership. Thus, one is not concerned with any changes in the market price of the object, i.e. there is no concern on financial returns on the object. One is solely paying for viewing the object and enjoying any other intangible returns it yields.

[1] For an excellent introduction to the field of aesthetics, see Graham (2005).

[2] See Frey and Eichenberger (1995) and Worthington and Higgs (2003) for further discussion of the properties of the art markets and possible motives for buying art objects other than financial gain motives.

[3] Still, one may derive personal satisfaction from following the developments in the art world. In addition, since famous paintings are very expensive, an individual who cannot afford them may still be able to invest in an art fund.

[4] Frey and Eichenberger (1995), Burton and Jacobsen (1999), and Ashenfelter and Graddy (2003) extensively discuss the main issues in the economics of arts and also provide a review the literature on the returns to investing in art objects and collectibles.

Although art rental markets are not common in practice, there are still some examples of such art rental services. In this paper, we make use of the prices from a Canadian fine art company that offers art rental and leasing services and derive an estimate of the extent of psychic returns under the "rental fee" approach. Our estimate of psychic returns under the willingness-to-pay or the rental fee approach exceeds 28 per cent.

Next, we examine the finance-theoretic approaches to estimating the psychic returns to investing in artworks. One method which received some appeal and found empirical applications in the "art as an investment" literature is the "capital asset pricing model (CAPM). The CAPM is a well-known tool in the finance literature to measure the riskiness of a particular investment with respect to a market portfolio. The CAPM also includes a parameter (alpha), which captures the returns to the asset in question which are not explained by its relative risk-return profile. In the finance literature, a positive value for the alpha is said to measure the ability and foresight of the asset's manager. In the economics of arts literature, the alpha parameter has been interpreted as an indicator of the psychic returns derived from an the acquisition of an art object or a portfolio of artworks (Stein, 1977; Chanel et al, 1994; Hodgson and Vorkink, 2004), net of transaction costs in buying and selling the object and any other costs. In view of this suggestion, we review the art market applications of the CAPM in the literature and refer to transaction cost data from international art auctions to infer the psychic returns to investing in paintings. Our estimates under this approach again yield a figure above 28 per cent on average and matches well with the figure obtained from the rental fee approach.

The rest of the paper is organized as follows. In Section 2, we provide a review of the literature on the measurement of the psychic returns to investing in art objects. In particular, we review the willingness-to-pay approach and examine the case of a Canadian fine art company's art rental program. Section 3 focuses on the finance-theoretic approaches for valuing the psychic returns. We first explain the CAPM approach in detail and provide a review of its application in the studies of art markets. We especially focus on the results reported in the literature on the estimated parameters of the CAPM in art market applications. We also refer to the literature on the extent of transaction costs in international art auctions. Finally, we base our estimates of the extent of psychic returns on the CAPM alpha estimates and the transaction costs figures reported in international art auctions. Section 4 concludes.

2. Willingness-to-Pay-Based Approach: Evidence from the Market for Art Rentals

In the literature, several proposals were made to measure the psychic returns. First, it was suggested that the rental price of paintings might provide a proxy for the psychic or non-pecuniary returns from investing in an art object (Stein, 1977; Graeser, 1993; Frey and Eichenberger, 1995). Nevertheless, Frey and Eichenberger wrote in 1995 that private rental markets did not really exist in the art world. This point also illustrates the incomplete market aspect of the art markets. Graeser (1993: 820) attributes this to the agency problem: i.e., "… the lack of motivation in the renter to preserve and protect the aesthetic object as would an owner-in-possession." Today, the situation in the art rental market improved. A search on the internet on art rentals and leasing programs, for example, leads to a number of hits showing the existence of these markets – especially for businesses. We illustrate below an interesting case of a market for art rentals, the prices from which might be used to infer a value for psychic returns.

Mayberry Fine Art (Winnipeg, Manitoba, Canada) offers art rental and art lease (with various buy-out options) programs.[5] The monthly payment under the art rental option is two per cent of the retail value of the work. The minimum rental period is six months. If an art

[5] The authors are not affiliated with Mayberry Fine Art and any of the services the company provides. The example is not intended to be an advertisement or a recommendation on the company.

work is not bought within six months, the option to buy expires. This program allows one to "try" an art work for a few months before buying. It is important to note that having an aesthetic experience is a dynamic process that takes time. Furthermore, tastes may also change over time. As such, Mayberry's art rental program that allows one to try an art object (say, painting) and the cost attached to it might be an appropriate example for valuing the psychic returns derived from the possession (but not ownership) of an art object. With a two per cent charge a month, the willingness-to-pay for viewing an original work and benefiting from any other intangible returns it may provide without the actual ownership comes to 24 per cent of the value of the work per annum (using a straight-line calculation). An opportunity cost measure (e.g., a risk-free rate) could also be added to this figure, raising it to 28.4 percent per annum.[6]

Mayberry has also an art lease program. The monthly lease payments amount to 2.5 per cent of the retail value of the art work, the minimum lease period being 12 months. The additional 0.5 per cent over the art rental option can be interpreted as a fee to reserve the artwork for possible future purchase (within five years).[7] In this case, too, the psychic returns from the possession of the artwork plus the possibility of buying it within the next five years comes to 30 per cent of the retail value of the art object. Again, with the addition of an opportunity cost measure, this figures increases to about 35 per cent.

The bottom line from the above discussion is that the Mayberry Fine Art's art rental pricing policy yields a quantitative figure on the psychic returns to the possession of artworks. This figure exceeds 28 per cent per annum.

3. Finance-theoretic Approaches

3.1 Calculation of the Psychic Returns as a Residual

Several finance-theoretic frameworks have also been employed to address the question of psychic returns in art market investments. The initial reaction to the generally observed result that the financial returns to art investments are lower than other financial investments was that the difference must be attributed to the aesthetic and psychic returns to the ownership of the art objects. Anderson (1974), Stein (1977), Baumol (1986), and Throsby (1994) are some of the important studies who argue in favour of this approach.

Anderson (1974) examined the auction prices of paintings covering the period 1780-1970. Using the repeat-sales method, he calculated the annual real rate of return to be three percent over the period. He also found that modern works such as impressionists and Twentieth century paintings' auction prices increased at a higher rate than other schools. He also referred to the return differential between investing in paintings and stocks, and attributed the spread to the crucial psychic effects of art consumption.

Stein's (1977) study explicitly deals with a concept similar to psychic returns, which he calls "return on viewing services". In his study, Stein (1977) calculated the financial returns to the paintings auctioned in the US and the UK between 1946 and 1968. The sample of works was restricted to those painters who died before 1946 in order not to introduce any "death effects". Stein's results indicated that the returns to paintings are lower than stocks and bonds. Stein (1977) further concluded that paintings would be an efficient investment only if non-pecuniary viewing pleasure were valued above 11.5 per cent per annum.

Baumol (1986) calculated the returns in the art market over three centuries (1650 – 1960) and found that the average annual real return is just above 0.5 percent. Thus, he called investing arts as a "floating crap game". Baumol (1986) reported that the return on bonds

[6] The average 1-year Canadian Government Treasury Bill rate was 4.43 in January-July 2007 period.
[7] Further details can be obtained from: http://www.mayberryfineart.com/leasing.html.

during the study period was about two per cent. Given that art as an investment provided much lower returns than stocks and bonds, in line with the equilibrium approach and the "no arbitrage" conditions in financial economics, Baumol (1986) also argued that the difference (1.5 per cent) must be attributed to the non-pecuniary returns or "… the utility derived from aesthetic pleasure" in art investments.

Throsby (1994) also follows a similar interpretation of the return differential between financial assets and art objects and argues that the difference is the value of the benefit generated from aesthetic pleasure, status symbol, and the prestige of owning a particular piece, which is the consumption value of art investment.

There are a number of shortcomings to the interpretation of the difference between art market investments and other financial investments as a measure of psychic returns since it rests on the assumption that art market returns are lower than those of stocks and bonds. What if, for some periods or genres of artworks, the art market returns are found to be higher than stocks? For example, Buelens and Ginsburgh (1993) re-examined the sample used in Baumol's (1986) study and found that investing in paintings provided higher returns than bonds and that the return performance of some segments of paintings were higher than stocks and bonds for long periods of time. They argue that Baumol's pessimistic results and the "floating crap" argument for art investments arise as an artefact of the biases in the data set.

The problem of how to measure the psychic returns remains under the return differential approach. This is because paintings or other artworks may yield both intrinsic positive psychic returns *and* higher financial returns than other investments. In this case, one would normally not argue that the difference between lower return on stocks and bonds and higher return on paintings should represent any psychic or otherwise positive nonpecuniary returns on stocks and bonds.

3.2 Frey and Eichenberger's (1995) Model of Art Market Players

One of the most detailed discussion of the psychic returns to investing in art objects is provided by Frey and Eichenberger (1995). Frey and Eichenberger (1995: 214-216) distinguish between two types of actors in the art market, namely, pure speculators and pure collectors. They further discuss how these two types of actors are influenced by 1) change in risk (price volatility as well as uncertain attribution risk), 2) change in cost, 3) unexpected change in taxes, 4) unexpected change in regulations, and 5) change in genres and tastes. Frey and Eichenberger (1995: 214) argue that "[t]he more pure collectors dominate the market, the lower is the financial return in equilibrium; the major part of the return is made up of psychic benefits."

Frey and Eichenberger's model comprehensively describes the behaviour of the art market players and relates this to the determination of the psychic returns. However, the model again rests upon an equilibrium relationship in a broader definition of a "no-arbitrage" condition which determines the total returns to investing in arts. Then, the extent of financial returns and psychic returns in the total return is given by the composition of the actors (pure speculators and pure collectors) in the market. The implication is that the estimate of the psychic returns for the overall art market can vary as the composition of the types of players changes in the market. Frey and Eichenberger do not provide an estimate based on this model in their paper. Despite its appeal, the model is hard to implement since the true motives of the buyers of artworks would need to be identified and quantified.

3.3. Art Market Applications of the Capital Asset Pricing Model

3.3.1 Theoretical Framework

Another framework of analysis, which is again based on finance theory, to quantify the psychic returns to art investments is provided by the capital asset pricing model (CAPM). In general, the CAPM examines the risk-return relationship between a certain asset and a market portfolio given the return on a risk-free asset. There are various versions of the CAPM, and we consider below the time-series representation developed by Jensen (1968).

$$(R_{it} - R_{ft}) = \alpha_i + \beta_i (R_{Mt} - R_{ft}) + \varepsilon_{it} \quad (1)$$

where:

R_{it} : the return series on an asset (i) over time (t)

R_{ft} : the return series on a risk-free asset (f) over time (t)

R_{Mt} : the return series on a market portfolio (M) over time (t),

β_{iM} : the beta parameter which shows the sensitivity of the excess returns on asset (i) to the excess returns on market portfolio,

α : the alpha parameter which shows the part of the excess returns on asset (i) that cannot be explained by its risk-return relationship with the market portfolio.

ε_{it} : a well-behaved error term, which represents the residual unsystematic and diversifiable risk.

The β parameter captures the systematic risk of the asset "i" in relation to the market portfolio. If $\beta > 1$, asset "i" can be said to be riskier than the market portfolio, if $\beta = 1$, then, asset "i" has the same risk as the market portfolio, and if $\beta < 1$, then asset "i" is less risky than the market portfolio. In the last case (i.e., $\beta < 1$), the asset "i" can be said to have a low correlation with the market portfolio. Thus, the asset "i" can be used to diversify the portfolio and reduce the overall risk.

The explanatory power of a linear regression equation is measured by the R^2 statistic. The R^2 statistic shows the percentage of the total variance in the dependent variable that is explained by the explanatory variable(s). In the context of CAPM, the R^2 can be interpreted as the systematic portion of the total risk, that is, the market risk. Then, 1- R^2 is a measure of the unsystematic risk that is specific to the asset "i" in question.[8]

The interpretation of the alpha parameter (α) in the CAPM model is less obvious. In principle, there should be no alpha effect (or, $\alpha = 0$) in the model. That is, there should not be any non-systematic returns that are not captured by the risk-return relationship between the assets of interest and the market portfolio. In econometric terms, the relationship to be estimated is a regression through the origin. Nevertheless, it is sometimes argued that some portfolio managers do better or worse than others or that there may be times where the asset "i" yields consecutively higher or lower returns compared to the market portfolio for reasons other than the risk relationship. In a regression which does not contain a constant term (i.e., alpha), such situations would appear in the error term and violate the necessary assumptions for the statistical inference to be valid. As a result, the alpha term is added to the model.

[8] The R^2 lies between 0 and 1 for a regression equation that includes an intercept term, such as equation (1) above. Nevertheless, for a regression through the origin (as in the original CAPM formulation), the R^2 is not bounded to be between 0 and 1. The fact that the value of the R^2 provides additional economic insights into the extent of systematic and specific risk makes it preferable to include an intercept term (alpha) into the empirical implementation of the CAPM. See Berndt (1991, Chapter 2) for a textbook discussion of the CAPM model and the econometric issues involved in its estimation.

However, it should not be statistically different than zero. It is again not clear how to interpret if the alpha term is statistically significant zero. Bailey (2005: 153) states that the alpha term shows whether the asset "i" is overpriced ($\alpha < 0$) or underpriced ($\alpha > 0$) compared to the predictions of the CAPM. Another way of looking at a non-zero alpha parameter is that the asset "i" would have produced non-zero excess return ($R_{it} - R_{ft} \neq 0$) even if the market portfolio's return is equal to the riskless asset ($R_{Mt} - R_{ft} = 0$).

The above-discussed CAPM framework has also found applications in the literature on the financial economics of art markets. Most of the interest in the use of the CAPM in studies of the financial returns in the art markets is mainly due to the empirical estimate of the beta coefficient. The question is as follows. It may be that art market investments yield lower returns than stocks and bonds. Even so, is it still possible to use art investments for portfolio diversification purposes? That is, what is the range of the art market beta given a risk-free rate and a market portfolio of stocks? As we will see in section III.3.2, the evidence is mixed; but, there is some indication that art market investments might provide portfolio diversification opportunities.

The interpretation of the CAPM's alpha parameter is particularly interesting in art markets applications. Stein (1977: 1028), for instance, proposes that the CAPM's alpha parameter should be taken as a measure of the returns from the viewing services of an artwork (or a stock of artworks), "… net of insurance and maintenance costs, plus an annualized premium to account for any tax advantages associated with investments in paintings, less an annualized premium to account for the illiquidity of investments in paintings."[9]

The logic of this argument can be illustrated as follows. Let's define the rate of return on portfolio i between period t-1 and t as: $r_{it} = (P_{i,t}-P_{i,t-1}+D_{it})/ P_{i,t-1}$, where D_{it} is the "dividend". For artworks, the dividend would include all revenues, including the monetary equivalent of the "psychic returns", less all costs. Rewriting this as $r_{it} = r^a_{it} + d_{it,}$ where the observed return is $r^a_{it} = (P_{i,t}-P_{i,t-1})/ P_{i,t-1}$ and the net dividend rate (unobserved) is $d_{it} = D_{it}/P_{i,t-1}$. Supposing for simplicity a risk-free rate of zero, the CAPM maintains that $E[r_{it}] = \beta_i E[r_{mt}]$, or $E[r^a_{it} + d_{it}] = \beta_i E[r_{mt}]$, or $E[r^a_{it}] = -E[d_{it}] + \beta_i E[r_{mt}]$. Empirically speaking, the time series CAPM regression for art involves the OLS regression of r^a_{it} on a constant and r_{mt}. Under the hypothesis that the CAPM holds and that observations on r_{mt} are uncorrelated with the unobserved d_{it}, the estimated intercept will be an unbiased and consistent estimator of $-E[d_{it}]$. This is the negative of the expected net psychic rate of return.

Chanel et al. (1994) and Hodgson and Vorkink (2004) also associate the alpha estimate in the CAPM applications with a measure of psychic returns in art market investments. In particular, Hodgson and Vorkink (2004) suggest that the alpha parameter is an indicator of the psychic returns net of any costs to the ownership of art objects, including transaction costs in buying and selling artworks, insurance and maintenance costs, and any other add-on factors (e.g. shipping, installation, etc). The main difference between Stein's (1977) and Hodgson and Vorkink's (2004) interpretation is that the latter take also the transaction costs into consideration. Since transaction costs are quite large in art auctions, this factor can make a substantial difference in the value of the psychic returns derived from the CAPM framework.

[9] Stein's (1977: 1027) justification for the suitability of the CAPM framework for art market investments is instructive:

> … Paintings are at one consumer durables, yielding a flow of nonpecuniary viewing services, and capital assets, yielding a return from financial appreciation. Thus, in a study of this kind, one may either modify a durable-goods model to incorporate positive capital appreciation and a special adjustment for risk or adjust a capital-asset model to account for nonpecuniary returns. The approaches are essentially identical, but the capital-asset model is more convenient because it explicitly accounts for risk.

3.3.2 Empirical Applications of the CAPM to Art Markets

In what follows, we review the literature on the applications of the CAPM on art market returns.

As we have discussed above, Stein (1977) is the first to apply the CAPM to art market data. According to Stein's (1977) estimates for the 1946-1968 period using auction data, the estimates of the alpha and beta in equation (1) above are α = -0.016 and β = 0.822.[10] The model's explanatory power (R^2) is 24.2%. The alpha estimate is not statistically significant, but the beta estimate is statistically significant at about three per cent level.

Stein (1977)'s point estimate of the alpha is 1.6 per cent and statistically insignificant. Nevertheless, Stein (1977) states that the 95 per cent confidence interval of the CAPM alpha, which ranges from 13 per cent to plus 15 per cent, is consistent with the rental price of artworks (which was 11 per cent at the time of his writing) plus 0.5 per cent for insurance and maintenance costs. Stein (1977) takes the 11.5 per cent figure as an upper bound for ratio of the nominal value of the viewing services provided by a stock of artworks to the nominal value of that stock per annum.

Bryan (1985) examined the returns to various categories of paintings using Sotheby's art market price index for the period 1971-1984. Bryan's (1985: Table 2) return estimate on overall paintings index is 10.7 per cent per annum for the 1971 – 1984 period, which exceed the returns on stocks, bonds (both AAA corporates and treasury), but fall behind that of gold (which yielded 16.2 per cent in that period). He also estimated an inflation-expectations-augmented CAPM.[11] His estimates indicated that the alpha term for the overall sample is 0.04 (significant only at 10 per cent level) and the beta term is 1.15 (significant at 5 per cent level). Investing in paintings is also found to be a hedge against inflation at 10 per cent level of statistical significance. Bryan (1985: Table 3) also reported CAPM estimates for sub-categories, such as old masters, impressionists, 19th century, and modern paintings. For old masters and 19th century paintings, the alpha terms are not statistically different than zero. For modern and impressionist paintings, the alpha terms are statistically significant at 5 per cent. The associated beta terms, however, are 0.92 and 0.97, respectively, suggesting that they carry about the same risk as the (stock) market portfolio.

Pesando (1993) studied the returns in the market for prints for the 1972-1992 period and separately examined returns on Picasso prints. Pesando's estimation results for the CAPM model yielded α = -0.015 and β = 0.315 for the overall market for prints, and α = -0.012 and β = 0.430 for Picasso prints.

Chanel et al. (1994) estimated the CAPM model to the returns on paintings in relation to the various stock markets, such as New York, Tokyo, Paris, London, and Frankfurt. Their estimates of the alpha and beta are shown in Table 1. Chanel et al.'s estimation results yielded low beta values, thus it can be said that art investments may help diversify a portfolio that includes stocks. The values of the alpha terms are close to 1 per cent (except in Tokyo), but they are not statistically. The models also lack explanatory power: the R^2 values vary between 0.014 and 0.057.

[10] See section 3.1 for a description of Stein's (1977) sample.

[11] The model specification is: $(R_{it} - R_{ft}) = \alpha_i + \beta_{i1} (R_{Mt} - R_{ft}) + \beta_{i2} (P - P^e) + \beta_{i3}$ Dum75 $+ \varepsilon_{it}$
where the variables R_{it}, R_{ft}, and R_{Mt} are the same as specificied in equation 1. The variables P and P^e represent actual and expected inflation, respectively, and Dum75 is a dummy variable for the year 1975.

TABLE 1. Chanel, Varet-Gerard, Ginsburgh (1994)
CAPM Estimates (1962-1988)

	Alpha	Beta
New York	0.0091	0.2015
Tokyo	0.0014	0.3689
Paris	0.0098	0.1747
London	0.0122	0.0288
Frankfurt	0.0111	0.1647

Note: The estimation results are based on the returns on a portfolio of 32 painters who were born after 1830 and spent at least part of their lives in France.

Another study where the CAPM is estimated in an art market investments context is Hodgson and Vorkink (2004). Hodgson and Vorkink (2004) calculated a hedonic price index for the works of 152 Canadian painters for the 1968-2001 period. Then, the returns based on this Canadian art price index were compared to the "Morgan Stanley Capital International (MSCI)" Canadian shares index. Hodgson and Vorkink's (2004) findings are in line with the generally reported results in the literature: the returns on art investments provide lower returns than stocks. Nevertheless, their estimates of the CAPM model yielded α = -0.008 and β = 0.042.[12] The value of the beta (statistically significant at 10 per cent) is found to be rather low, suggesting that art investments can help diversify a portfolio of stocks. In the CAPM jargon, the systematic risk in art investments can be said to be lower than in investing in stocks. Hodgson and Vorkink's (2004) alpha estimate is not statistically significant. The model's explanatory power is very low (1.4 per cent).

One interesting observation from the studies reviewed above is that the alpha terms are overwhelmingly found to be statistically not different from zero. Hence, as a corrolary of Stein's (1977), Chanel et al.'s (1994), and Hodgons and Vorkink's (2004) interpretation of the art market CAPM alpha, it can be said that the positive non-financial returns or the psychic returns should have balanced the (transaction) costs involved in investing in the art market. Then, the question is how much these costs are. This is an important point since the transaction costs are substantial in the art markets.

The fact that the magnitudes of the transaction costs differ substantially in art markets and financial markets has been emphasised in a number of studies. Frey and Eichenberger (1995: 209) discuss the issue of high transaction costs in art market dealings and estimate these costs to be between 10-30 per cent in addition to any other insurance and handling costs. Ashenfelder and Graddy (2003: 769) state that the transaction costs can be quite high, amounting to about 25 per cent when both buyers and sellers premiums are considered. Using the latest information from auction houses (Sotheby's and Christie's - as of 2007), Pesando and Shum (2007) state that the buyer's commission on works valued below $200,000 at Sotheby's or Christie's at auctions in New York is 20 per cent and that most works sell for less than $200,000. With the addition of the seller's premium of about 8 per cent, the "round trip" transaction cost comes to about 28 per cent. This is a substantial figure in view of the fact that art investment is seen as an alternative to other financial investments with much lower transaction costs. It also highlights the fact that investing in the art market requires a long-term horizon.

[12] Hodgson and Vorkink (2004) estimate the CAPM both with annual and semi-annual data. Results discussed here refer to their estimates with annual data. The results obtained using semi-annual data are similar.

Given that the value of alpha is statistically not different than zero in the art market applications of the CAPM and that the round trip transaction costs amount to 28 per cent of the hammer price, the value of the non-pecuniary aspects of investing in artworks should then be about 28 per cent plus any other insurance and maintenance costs (say, 0.5 per cent as suggested by Stein.) Most interestingly, this estimate of the psychic returns figure derived from the CAPM framework is very much in line with the current art rental market prices that we have examined earlier. Then, we are in a position similar to Stein (1977). The rental price of the artworks and the value obtained from the art market interpretation of the CAPM alpha match very well. Our estimate is, however, different (and higher) than Stein's since we also include the "round trip" transaction costs in art auctions in the CAPM alpha term. Furthermore, we add an opportunity cost measure (risk-free rate) to the art rental prices, which is not taken into account by Stein. The CAPM framework takes the risk-free return into account. Hence, in order to compare the art rental price approach to the CAPM alpha estimates, the former should be adjusted with a risk-free rate.

4. Conclusions

In this paper, we attempt to quantify the psychic returns to art market investments. We first apply the rental fee or the willingness-to-pay approach by making use the art rental prices provided by a Canadian fine art company. This approach suggests that the value of the psychic returns should be above 28 per cent per annum.

Next, we review various finance-theoretic approaches to estimating the psychic returns. It is, for example, generally reported that the returns to investing in art objects are lower than the returns on stocks and bonds. As a result, it is argued that the return differential must reflect the additional non-financial returns due to the aesthetic good properties of art objects, such as paintings. While this framework to quantify the extent of the aesthetic or psychic returns is appealing, it is not necessarily adequate: it requires the art market returns to be lower than other financial investments, which is not always the case.

Another finance-theoretic framework which found appeal in the financial economics of art literature is the capital asset pricing model (CAPM). The CAPM has a particular appeal in the study of the returns made in the art markets. First, it gives insights as to whether investing in arts can provide portfolio diversification benefits, regardless of whether the returns in the art markets are higher or lower than a market portfolio of other financial assets. Second, the model includes a parameter (alpha) which is interpreted as a measure of the net psychic returns to art investments. Furthermore, the CAPM framework does not require that the returns in the art market should be lower than the returns on a market portfolio, say stocks.

While there are a number of studies in the literature that employ the CAPM framework, Stein (1977), Chanel et al. (1994) and Hodgson and Vorkink (2004) relate the model's alpha parameter (the constant term in the CAPM regression) to the psychic returns to investing in artworks. We take Hodgson and Vorkink's version that alpha might be seen as a measure of psychic returns net of any transaction and other costs as a basis to interpret the results obtained in the international literature that uses the CAPM model for the art market returns.

The beta parameters which capture the sensitivity of the returns in the paintings market to the systematic risk of the market portfolio varies from study to study. The value of the alpha parameter is, however, consistently found to be statistically not different from zero. Therefore, following Hodgson and Vorkink's (2004) arguments, we infer that the net psychic return to investing in paintings in the international art markets is about zero. Combining this with the fact that the simple "round trip" the transaction costs amount to about 28 per cent of the sale price (hammer price) in international auctions, we conclude that the overall estimate of the psychic returns should be 28 per cent plus any additional costs. Interestingly, this figure matches well with evidence obtained from the art rental market prices.

References

Anderson, R. C. (1974) "Paintings as an Investment" *Economic Inquiry* **12**(1), 13-26.

Ashenfelter, O., and K. Graddy (2003) "Auctions and the Price of Art" *Journal of Economic Literature* **41**, 763-786.

Bailey, R. E. (2005). *The Economics of Financial Markets* Cambridge University Press: Cambridge (UK).

Baumol, W. J. (1986) "Unnatural Value: or Art Investment as Floating Crap Game" *American Economic Review* **76**(2), 10-14.

Berndt, E. R. (1991) *The Practice of Econometrics: Classic and Contemporary*, Addison Wesley.

Bryan, M. F. (1985) "Beauty and the Bulls: The Investment Characteristics of Paintings" *Economic Review (Federal Reserve Bank of Cleveland)* First Quarter, 2-10.

Buelens, N., and V. Ginsburgh (1993) "Revisiting Baumol's 'Art as a Floating Crap Game' *European Economic Review* **37**, 1351-1371.

Burton, B. J., and J. P. Jacobsen (1999) "Measuring Returns on Investment in Collectibles" *Journal of Economic Perspectives* **13**(4), 193-212.

Chanel, O. L., A. Gerard-Varet, and V. Ginsburgh (1994) "Prices and Returns on Paintings: An Exercise on How to Price the Priceless" *Geneva Papers on Risk and Insurance Theory* **19**, 7-21.

Collingwood, R. G. (1938) *Principles of Art* Oxford University Press: Oxford (UK).

Frey, B. and R. Eichenberger (1995) "On the Return of Art Investment Return Analyses" *Journal of Cultural Economics* **19**, 207-220.

Graeser, P. (1993) "Rate of Return to Investments in American Antique Furniture" *Southern Economic Journal* **59**(4), 817-821.

Graham, G. (2005) *Philosophy of the Arts: An Introduction to Aesthetics*, Third Edition, Routledge: Oxon (UK).

Hodgson, D. J., and K. P. Vorkink (2004) "Asset Pricing Theory and the Valuation of Canadian Paintings" *Canadian Journal of Economics* **37**(3), 629-655.

Jensen, M. J. (1968) "The Performance of Mutual Funds in the Period 1945-1964" *Journal of Finance* **23**(2), 389-416.

Pesando, J. E. (1993) "Art as Investment: The Market for Modern Prints" *American Economic Review* **83**(5), 1075-1089.

Pesando, J.E., and P. Shum (2007) "Investing in Art: A Cautionary Tale" *Journal of Wealth Management* **9**(4), 80-87.

Stein, J. P. (1977) “The Monetary Appreciation of Paintings” *Journal of Political Economy* **85**(5), 1021-1035.

Throsby, David (1994) “The Production and Consumption of the Arts: A View of Cultural Economics” *Journal of Economic Literature* **32,** 1-29.

Worthington, A. C., and H. Higgs (2003) “Art as an Investment: Short and Long-term Comovements in Major Painting Markets” *Empirical Economics* **28**, 649-668.