groups would, in effect, "cancel each other out," and increase the likelihood that the common good would emerge.

The lessons of the Federalists are being forgotten in San Francisco. The detrimental effects of change are real, but cushioning the blows while accommodating the pressures of growth on the city and the region will require vigorous leadership. In an earnest attempt to democratize the regulatory process, city officials and voters are making the process more vulnerable to capture by narrow interests. Anti-Federalism is running amok in the neighborhoods of San Francisco.

The Public Interest
91 (Spring 1988), 79-86.

# Is art such a good investment?

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THE DEMAND for art today is higher than ever before. Auction houses report record turnovers, and absolute top prices are being paid in increasingly rapid sequence. Only three years ago, Turner's "Seascape: Folkestone" had an auction price of $9.8 million at Sotheby's (London). A year later van Gogh's "Landscape with Rising Sun" was sold for $9.9 million at Sotheby's (New York), and Mantegna's "Adoration of the Magi" sold at Christie's (London) for $10.4 million. Enormous publicity greeted the sale in April 1987 of van Gogh's "Sunflowers," which was sold at Christie's (London) to the Japanese insurance company Yasuda for $39.9 million.

In 1907, seventeen years after van Gogh's death, "Sunflowers" was offered at an exhibition in Mannheim for 12,000 German marks (roughly $3,000). Two years later, again in Mannheim, it was offered for 28,000 marks (roughly $7,000). Edith Beatty is said to have acquired it in 1934 for 63,000 marks (about $24,000) from the Parisian art dealer Paul Rosenberg. After the deduction of all costs involved, the investment of 63,000 marks yielded a yearly rate of return of 11.4 percent. This return is far above the rate of inflation, which was approximately 6.7 percent per year during that period.

The real rate of return of 4.7 percent per year is also higher than the return from other kinds of financial investment—in securities, for example.

The current auction record was set in November 1987, again by a van Gogh; "Irises," sold by Sotheby's (New York), fetched a price of $53.9 million (including Sotheby's 10 percent commission). The painting was bought by the seller's mother in 1947 for $84,000, less than half a million dollars in today's money; the real rate of return on the investment comes to about 12 percent per year.

In view of statistics such as these, it is hardly surprising that investing in painting is thought to be highly profitable. Especially in the United States, an increasing number of investors believe that purchasing art provides not only aesthetic pleasure, but also financial remuneration. American banks strengthen the trend of viewing art as an investment by hiring "art investment counselors," which suggests that it pays to buy art. While similar tendencies can also be seen in financial circles in Europe, art lovers and investment advisors there are more hesitant. Many warn that art objects should not be bought with portfolio diversification in mind. Most art collectors share this feeling, arguing that art should be owned for aesthetic rather than financial reasons.

## Risk and rate of return

Who is right? Does investment in art really yield a higher rate of return than comparable forms of investment? Should paintings be bought for financial reasons?

These questions are not easy to answer. There is little data available on the actual selling prices of art in galleries and through art dealers. A consistent series of data exists only for prices reached at auctions. However, such prices are quite important, since they give an indication of the prices asked by art dealers.

The financial profitability of buying paintings depends both on the average rate of return and on risk. The rate of return is calculated on the basis of the difference between the sale price that was received and the initial buying price that was paid by the painting's owner. The financial risk of investing in art is captured by the fluctuations in paintings' rates of return. *Actual* risk, however, is higher, since paintings are occasionally stolen, mutilated, or even destroyed. To this risk must be added the uncertainty stemming from the possibility of forgery or mistaken attribution. Changes in attribution usually make a big impact on prices. An example is Rubens's "Daniel in the Lions' Den," which in 1882 was auctioned by Christie's (London) for 1,680 pounds, and in 1885 was resold for 2,520 pounds. In 1963, now attributed to Jacob Jordaens, it was auctioned for only 500 pounds. But in 1965, acknowledged as a "school piece of Rubens's," it was acquired by the Metropolitan Museum for 178,600 pounds. Even uncritical buyers may begin to wonder when they learn that there are believed to be 8,000 paintings by Corot in the United States—an astonishing number, considering that there are only 3,000 authentic works by that master. Other sources estimate that the number of fake Corots is as high as 10,000. The situation is similar with various other painters, in particular van Dyck and Utrillo.



Art historian Gerald Reitlinger, author of the three-volume *The Economics of Taste*, has collected auction prices for paintings over more than three centuries; he considers only important works of the best-known painters of the world, concentrating on auctions in London, and later also in New York (mostly at Sotheby's and Christie's). We have extended Reitlinger's data up to 1987, and have included auction data from France, Germany, and the Netherlands. As there is a consensus that short-run speculation in art is financially unprofitable (partly due to the high commission fees and other transaction costs connected with auctions), we consider only holding periods of twenty years or more between the purchase and sale of a picture. The number of turnovers included in our calculation is 1,200. We have adjusted the prices for inflation, and taken into account the considerable transaction costs, which vary according to period, country, and auction house: a typical auction fee would amount to more than 10% of the value for both the buyer and the seller.

According to our calculations, the average real rate of return for investment in paintings amounts to 1.5 percent per year for the period 1635 to 1987. As a comparison, an investor holding the best securities, such as government securities, would have enjoyed a long-term real rate of return of a little more than 3 percent per year. Thus, an investor in paintings (as opposed to financial assets) would have incurred a real opportunity cost of somewhat less than 2 percent a year. This is a sizable amount: the real rate of return on paintings is half the return on public securities.

It might, admittedly, be argued that financially-motivated investment in art began on a large scale only after World War II; for this reason we have calculated the rate of return both before and after 1950. The real rate of return for the period 1635 to 1949 amounts to 1.4 percent per year. This rate of return is clearly lower

than the corresponding real return on government securities, which would be about 3.3 percent per year. A representative investor in paintings would thus have suffered a real opportunity cost of nearly 2 percentage points by not investing in public securities in the period before 1950.

From 1950 to 1987 the real rate of return on paintings was 1.6 percent per year. An investor in financial assets in this period would have reaped a real return of almost 2.5 percent per year. In this more recent period the representative investor in art would thus have incurred a real opportunity cost of a little more than half a percent per year. The main reason why investments in paintings have become *relatively* more attractive than those in financial assets (the opportunity cost having fallen from 2 to .5 percent) is not so much an increase in the real return on paintings as an increase in the rate of inflation—which rose from .5 percent per year before 1950 to over 5 percent per year after 1950, and which has not been fully reflected in the nominal rates of interest on long-term credits. As a result, investments in long-term credits have become less attractive (the real return falling from 3.3 to 2.3 percent per year). A lower rate of inflation would produce the opposite effect: if in the future inflation returned to pre-1950 levels, investors in paintings (as opposed to financial instruments) would presumably incur even higher real opportunity costs than they do today.

The real rates of return on investments in paintings that we have calculated are actually too high. For the owner of a valuable painting incurs additional expenses that an investor in financial assets does not face: to preserve the painting's value, air conditioning must often be installed; if the painting is not kept in a bank vault it must be insured against destruction by fire, mutilation, or theft. According to the International Foundation of Art Research, in the last decade, in which nominal prices of paintings have increased sharply, art thefts have tripled; but only 5 percent of stolen paintings are now recovered—as compared with 22 percent ten years ago. Accordingly, the cost of insurance against fire and theft has gone up and now ranges between .2 percent and 1 percent of a painting's appraised value per year.

Not only are the rates of return on art investment surprisingly small; they also fluctuate widely. In the post-war period the average real rates of return ranged from − 19 percent to + 16 percent; for the period 1635-1949 they ranged from − 16 to + 26 percent. In real terms, nearly a third of all transactions resulted in an absolute loss. For more than half the transactions (55 percent), the profitability was lower than would have been the case had one invested in public securities. Similar results characterize the period before 1950. In both periods the volatility of the rates of return for paintings exceeded that for financial assets.



## Winners and losers

The average results may be illustrated by referring to some individual paintings and painters. Who are the big winners and losers? The highest real rate of return (above 26 percent per year) in our sample was reached by Frans Hals's "Man in Black," which in 1885 was auctioned for a little more than 5 pounds at Christie's (London), and in 1913 sold for 9,000 pounds at Sotheby's (London). Other pictures by Hals have achieved real rates of return of approximately 10 percent in the last two centuries. Similarly high rates of return could have been realized by investors in paintings by well-known artists like Cézanne, Gauguin, van Gogh, Manet, Matisse, Monet, and Renoir. Even with these famous painters, however, some transactions have resulted in low, and sometimes even negative, real rates of return.

The worst investment revealed in our sample is John Singer Sargent's oil sketch "San Virgilio," which in 1925 was sold for 7,350 pounds but in 1952 was auctioned for only 105 pounds at Christie's (London). The real rate of return to the unfortunate owner was − 19.3 percent per year. Other painters who produced works that were sold at great real financial loss include Sir Lawrence Alma-Tadema, Carlo Crivelli, John Hoppner, William H. Hunt, Sir Edwin Landseer, Frederick Lord Leighton, Sir John Millais, Sir Joshua Reynolds, and David Roberts. Not surprisingly, most of these painters are not generally known among today's art lovers, because their art went out of fashion. Some of these artists, however, have met with increasing interest recently, so their works have produced positive real rates of return in the last few years.

## Empirical studies

Our study analyzes the financial returns on art investment in the past. In principle, it is of course possible that the future will be completely different. The evidence at hand, however, provides no indication that investment in art will yield high monetary profits in the future, everything else being equal.

Our results correspond well with those of the few serious studies undertaken so far. The economist William Baumol, who is both a professor at Princeton and New York Universities and a practicing

artist, has studied the price changes of pictures that have changed hands at least twice between 1652 and 1960, utilizing Reitlinger's restricted data set. The real rate of return on paintings that he calculates for this period is .6 percent per year. The corresponding real rate of return for government securities amounts to 2.5 percent per year. A representative investor would therefore have experienced a loss of nearly 2 percent per year. Like us, Baumol finds that investments in paintings generate highly unstable rates of return. On average, the real rates of return ranged between − 19 percent and + 27 percent per year. In 40 percent of all transactions there was an absolute loss in real terms, while 60 percent of all transactions yielded a rate of return lower than that received from government securities.

Another study, by Robert Anderson, which examines the 1960s and considers additional sources of data, concludes that the average *nominal* rate of return is 3.3 percent per year, which is roughly half as high as the return on financial assets. The standard deviations of the rates of return (a common measure of financial risk) on the two assets, paintings and stocks, are 56 percent and 12 percent, respectively.

A third study, by John Stein, concentrates on auctions held in the United States and Great Britain between 1946 and 1968. He finds that the *nominal* rate of return on paintings is 10.5 percent per year, compared with a 14.3 percent rate for financial assets in the same period. In real terms, a representative investor in art would have lost 1.6 percent per year. Stein, too, shows that the prices of paintings fluctuate much more than prices of financial assets, which suggests that art investment is riskier than investment in financial assets.

The three studies mentioned, as well as our own (which takes into account longer time periods and a larger number of transactions), all come to the same conclusion: investment in paintings is less profitable and more risky than investment in traditional financial assets.

## The unpredictability of fashions

A careful analysis of the long-term evolution of the prices of paintings suggests that the changes in price can be understood as a random process. The long-run real rate of return on investments in paintings cannot be attributed to any systematic or identifiable factors.

Our finding that the changes in the prices of paintings tend to result from random influences allows us to draw two conclusions:



(1) The alteration in price and the rate of return of a painting *cannot* be predicted.

(2) Information and specific knowledge about the market for art in general, and about any paintings in particular, does *not* allow an individual, on average, to reap higher rates of return than he might have if the paintings had been bought without special knowledge. It follows that art experts are not, on average, able to invest more successfully in the art market, their superior knowledge and experience notwithstanding. The price movements that in retrospect are termed "fashions" are not predictable even by art experts, and therefore cannot be anticipated and exploited systematically.

There are many examples that support these findings: Vermeer was held in low regard for a long time, and his paintings accordingly fetched low prices; today his paintings are among the world's most expensive. The same can be said of El Greco. Turner's paintings at first were sold at very high prices; then the prices fell sharply. Today his paintings fetch record prices. Similar price movements characterize Pre-Raphaelite paintings, which are becoming increasingly popular. Conversely, there are many artists who were previously highly esteemed, but nowadays are little known, such as van Ostade, Berchem, and Wouvermans. Alma-Tadema also comes to mind: his works were initially highly priced, but by the time of his death in 1913 the prices of his paintings had been falling for a decade. The decline in price could hardly have been steeper: in 1960 one of his most famous paintings could not find a buyer at 5 percent of the price paid in 1904. Art experts are, of course, able to provide explanations for such dramatic price falls *in retrospect*; they cannot, however, predict which fashions will begin and end.

The fact that there are *collections* that have greatly increased in value does not invalidate our point. One such collection is that of the Swiss textile producer Hans Mettler, which was auctioned by Christie's (London) in 1979 for thirty-four times the value of the capital invested between 1915 and 1929. To begin with, the rate of return on the collection as a whole is not all that high. While the nominal rate of return amounts to 6.4 percent per year, the real rate of return is only 2 percent, which is lower than the average return in financial markets. But even if the profitability of a particular collection is higher than that of financial assets, it fails to provide a valid objection to our thesis, since existing collections constitute a positive selection. To get an accurate picture it would also be necessary to consider collectors who were not successful, and who therefore had to dispose of their collections.

That price movements are random does not, of course, imply that no investors make large profits by buying paintings. But it is equally true that some investors suffer huge losses. One who bought a Vermeer or a Pre-Raphaelite when it was out of fashion can sell at a profit today; but one who bought a Berchem, van Ostade, or Alma-Tadema in the past, and sells it today, incurs a severe loss. The important point is that winners and losers are apparent only in hindsight; successes and failures cannot be attributed to identifiable causes, and therefore cannot be predicted.

Those who aspire to make a killing in the art market should ask themselves the following questions: Why exactly should this market alone provide extraordinarily large profits? If many paintings are financially undervalued today, why don't other investors realize this, and then buy, pushing up current prices? This question is particularly relevant today, when art investment is in vogue, and when investors are well informed about market conditions. There is an obvious analogy with investments in the stock and securities markets: if someone is sure that a financial asset's price will increase, he will buy it and thereby push up the price until all unusual profit opportunities are exhausted.

Predictions of high profits in the market for art—particularly for paintings—are mistaken. Theoretical arguments, as well as all serious empirical studies, indicate that it is no easier to make speculative financial profits in art than anywhere else.

Are these conclusions disappointing? We think not. Art should be bought for enjoyment, because people derive intrinsic benefits from its possession. For buyers like these, investing in art is always profitable. In our view, it is reassuring that objects of art are more likely to provide aesthetic than financial satisfaction.[1]

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[1] We are grateful to Elisabeth Tester, Marina Börkey, Cornelia Haist, Antonia Simon, Kai Fürntratt, and Alexander Schrader for their research assistance and comments.

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