

ABSTRACT

In 1977, an exhaustive data set on the prices of prints sold at auction world-wide first became available. Since 1977, the real return to a diversified portfolio of modern prints has averaged about 1.5 percent, about equal to that on U.S. Treasury Bills. The absolute risk of prints has been comparable to that of common stocks. While there appears to be some potential for portfolio diversification, the investment performance of modern prints appears to be inferior to that of traditional financial assets, especially when the much higher transactions costs are taken into consideration.

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THE AUCTION MARKET FOR MODERN PRINTS:
WHAT HAVE WE LEARNED ABOUT ART AS AN INVESTMENT?

by

James E. Pesando*

*Professor of Economics, University of Toronto

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The past 25 years of the print market are a clear-cut example of one of the several exceptions to the theory of cross-market efficiency. Here is a clear case where the possibility to earn consistently high rates of return has persisted over the period analyzed.

Robert E. Penn, The Journal of Portfolio Management,
1980.

1. Introduction

Prints sold at auction are classified into three groups: modern, old masters, and contemporary. Old-master prints (Rembrandt, Durer, etc.) vary sharply in both condition and quality. Contemporary prints (Johns, Hockney, Stella, etc.), although likely to be in good condition and of uniform quality, are less likely to have a history of sale at auction. For these reasons, the market for modern prints (Picasso, Chagall, Miro, etc.) is an especially attractive vehicle for examining the rate of return on art. Here, price differences due to "nonobserved" variations in condition and quality are less important, and there is an established history of sale at auction.

The market for modern prints is now an integral part of the art market. Because prints are typically published in editions of 50, 100 or more, different impressions of the same print frequently appear at auction, often in the same season. As a result, one can use repeat sales of the same print to overcome the fundamental problem faced by those attempting to measure the rate of return on art. This problem is the heterogeneity of art objects, which makes it difficult to track the price of an

"identical" art object over time.¹

The frequency of repeat sales of modern prints, together with the availability since 1977 of an exhaustive data set on the prices of prints sold at auction houses world-wide, make it natural to ask what we have learned about art as an investment from this segment of the market.

2. The Data

Gordon's Print Price Annual was published for the first time in 1978, and has been published in every year since. Each Annual contains a complete record of the prints sold at the world's major auction houses (Sotheby's, Christie's, Hotel Druout, Hauswedell & Nolte, Kornfeld, etc.) during the previous year. The *Annuals*, compiled from the catalogues prepared in advance of the sales and the price lists released thereafter, currently contain more than 45,000 entries.

The year 1977 is thus a pivotal date in the study of the investment performance of modern prints. As noted, impressions of the same print frequently appear at auction. As a result, the use of repeat sales is particularly well-suited to the task of

¹The fundamental problem in the study of art as an investment is the heterogeneity of art objects. Researchers typically adopt one of two approaches to addressing this problem: (1) hedonic pricing models or (2) repeat-sales regressions. (For a discussion of these two techniques as applied to the study of art objects, see Ashenfelter and Graddy (2002).) In general, the disadvantage of the repeat sales methodology is linked to the fact that a significant fraction of the observed data points may have to be discarded because there is no matching (i.e., repeat) sale.

However, because prints are multiples that are typically published in editions of 50 or more, impressions of the same print do frequently come up for sale at auction. In Pesando (1993), for example, less than one percent of the recorded data points had to be discarded for want of a matching sale.

constructing an index of print prices. The construction of an index of prices is the essential first step in the analysis of the risk-return properties of investment in art.

Subsequent to 1977, there is available a comprehensive data set which can be used to construct an index of print prices. The ready availability of these data motivated the studies by Pesando (1993) and by Pesando and Shum (1999), who estimate the rate of return on modern prints (or the prints of Picasso) for the periods 1977 to 1992 and 1977 to 1996, respectively.

Prior to 1977, there is no readily available data set. A researcher who wished to use repeat sales to construct an index of prices would have to "back fill" the data from individual auction catalogues together with the published sales results. Of necessity, this exercise would be selective (i.e., data from all of the world's auction houses and for all of the prints of the important modern artists would not likely to included). The subsequent finding would be subject to an important caveat on this account.

To my knowledge, the only study that uses repeat sales to construct an index of print prices for this earlier period is that of Penn (1980). Interestingly, the study - published in The Journal of Portfolio Management - was directed to the investment community.

It is instructive to consider, in order, the findings of Penn (1980), who studies the investment performance of modern prints for the period 1954 to 1978 and concludes that the real rate of return on prints significantly exceeds the return on common

stocks; Pesando (1993) and Pesando and Shum (1999), who study the investment performance of modern prints for the periods 1977 to 1992 and 1977 to 1996, respectively, and conclude that the real return on prints is (slightly) less than the return on risk-free U.S. Treasury Bills (and dramatically beneath the return on stocks); and Landes (1999), who investigates the sale of the art collection of Victor and Sally Ganz at Christie's in New York in November 1997, and finds that the modern prints (chiefly, by Picasso) included in the sale realized very high rates of return.

In addition to reviewing the findings of these studies, I offer an additional perspective linked to the issues of: (1) the establishment of the market for modern prints as an integral part of the art market; (2) the role of passive versus active investing in modern prints; (3) the presence of "irrational exuberance" in the sale of prints from the collection of Victor and Sally Ganz; and (4) the flow of consumption services provided by an investment in art.

3. Modern Prints: the "Breakfast of Champions"?

Penn (1980) finds that, during the period from 1954 to 1978, the real rate of return on modern prints is 21 percent per year. This figure significantly exceeds not only the (rather depressed) real return on stocks during this same period (3 percent, as measured by the Dow Jones Industrial Average), but also the higher real rate of return (about 7 percent) provided by stocks over the long run.

Penn also finds that the standard deviation of the real return on prints is a modest 9 percent, and that the return on prints is negatively correlated with the return on stocks.

Based on average return, absolute risk and the potential for diversification, these findings suggest that modern prints may be the "Breakfast of Champions."

To construct the index of print prices, Penn relies upon a relatively small data set. He tracks the prices of 15 prints, produced by 11 artists (including Picasso, Chagall, and Matisse),² based on prices realized at only five auction houses.

In spite of these data limitations, there is no apparent reason to believe that the auction results relied upon by Penn are not representative of the broader market. Further, Penn's optimistic conclusions find at least indirect support from other early studies. For example, as reported in Stein (1977), it has been estimated that the real rate of return on Old Master prints averaged 17.8 percent per year during the period from 1950 to 1969.³

4. Pesando (1993) and Pesando and Shum (1999)

Pesando (1993) examines the return on modern prints for the period 1977 to 1992, as well as the return on the prints of Picasso. Pesando and Shum (1999) extend the sample period to 1996, and focus exclusively on the prints of Picasso.

²For perspective, Pesando (1993) uses a data set comprised of approximately 1,500 prints by 27 artists.

³This finding is based on an index of prices created by the experts in Old Master prints at Sotheby's.

The findings of these more comprehensive studies⁴ (Table 1) are far less favourable to the view that modern prints provide an attractive investment vehicle.

During the period 1977 to 1992, the real return on a diversified portfolio of modern prints averaged 1.5 percent. This is less than the real return on 180-day U.S. Treasury Bills (2.2 percent), and far beneath the real return on stocks (8.1 percent, as measured by the S&P 500 index).

Further, the absolute risk of prints was comparable to the absolute risk of stocks, and the return on prints was positively correlated with the rate of return on stocks. Modern prints had a lower degree of systematic risk (a beta coefficient of 0.315) than common stocks, suggesting - in equilibrium - a lower expected rate of return. Yet the risk-adjusted excess return on a diversified portfolio of prints was negative, although not statistically significant.⁵

Extending the sample period from 1992 to 1996 yields less favourable results. The real return on a portfolio comprised exclusively of Picasso prints declines from 2.1 percent to 1.5 percent when the sample period is extended to 1996.

Finally, it merits emphasis that the estimates of the real return to modern prints reported by Pesando (1993) and by Pesando and Shum (1999) are before a consideration of transactions costs; in particular, the commissions charged to both buyers and consigners by the major auction houses. At present, for example,

⁴In Pesando (1993), there were 27,961 repeat sales during the period 1977 to 1992.

⁵As noted, the observed real return on the diversified portfolio of prints was 1.5 percent. Based on the degree of systematic risk (one factor model), the expected return would be 4.1 percent.

the buyer's commission at Christie's is 19.5 percent of the first \$100,000 and 10 percent of the hammer price in excess of \$100,000.

The seller, too, must pay a commission, by a more complicated formula. The clear implication is that investment in prints (and art) is relatively illiquid, and requires a long-term horizon in order to amortize these high transactions costs.

5. The Ganz Sale in November 1997

Landes (1999) reviews, in detail, the results of the much-publicized and highly successful sale of the art collection of Victor and Sally Ganz by Christie's in New York in November 1997.

Included in the analysis conducted by Landes are the results for eleven prints, both modern and contemporary. It is instructive to review these results, for several reasons.

Landes reports that the real return on the prints sold in the Ganz collection - net of the buyer's and seller's commissions - averaged 10.9 percent. This figure exceeds the real return on stocks (as measured by the S&P 500), which averaged 8.4 percent during the comparable holding-period.

In Table 2, I show the realized prices for the five prints by Picasso that were included in the November 1997 sale. Shown, as well, are both the estimate for each print and the highest auction price realized for each print in the three years preceding the Ganz sale and in the three years subsequent to the Ganz sale.

As is apparent from Table 2, there is strong evidence of "irrational exuberance" in the prices realized at the Ganz sale.

Tete de Femme, with an estimate of \$28,000 to \$34,000, sold for \$123,500 with buyer's premium. The highest price for an impression of this Picasso print in the three years preceding the Ganz auction was \$39,199; in the three years subsequent to the Ganz auction, \$42,250.

The evidence of "irrational exuberance," of interest unto itself, also helps explain the high real returns obtained on the prints sold at the Ganz sale.

In Table 3, I calculate what I refer to as the "Adjusted Ganz Return." This is the real return to each Picasso print if it had at the high end of its estimated range. To place additional perspective on the studies that I have already reviewed, I calculate the real return for each print before and after the year 1977. I do so using the average price realized at auction for each Picasso print in the year 1977.

The results are interesting, for the following reasons:

- (1) If each Picasso print had sold at the high end of its estimated range, the average real return on these prints would have been 6.0 percent instead of 9.4 percent.
- (2) Most of the superior investment performance of these Picasso prints occurred prior to year-end 1977. The real return on these prints prior to year-end 1977 averaged 9.4 percent; the real return after 1977, only 1.8 percent.

This latter result, although subject to an important caveat in light of the small number of prints, is consistent with the findings reviewed earlier in this paper. In particular, the real return to modern prints appears to have been very high prior to

year-end 1977, and much more modest since 1977.

6. Interpretation and Conclusions

The well-measured, but modest, real rates of return on modern prints documented by Pesando (1993) and by Pesando and Shum (1999) for the years 1977 to 1992 and 1977 to 1996 reflect (1) a portfolio of established artists and (2) a time period in which modern prints had become an established part of the art market.

By focusing on the entire set of prints published by established artists such as Picasso, Chagall, Miro and the like, Pesando and Pesando and Shum preclude the possibility of obtaining abnormally high returns by correctly anticipating which artists (or which prints of already established artists) may be underpriced by the market. Stated differently, the investment performance documented in these studies corresponds to "passive" rather than "active" investing, with the further limitation that only the equivalent of "blue chip" stocks can be held in the portfolio.

Anecdotal evidence - as well as the findings of Penn (1980) - suggest that there may have been abnormally high real rates of return on an investment in modern prints during the transition period in which this segment of the art market was becoming an integral part of the art market as a whole.

In this context, the history of the print market as documented by Theodore B. Donson (1977) is revealing. In essence, Donson suggests that the print market was not an established part

of the art market at the end of World War II, and did not become so until the early 1960s.⁶

If this hypothesis is correct, the implication - of course - is that the high real rates of return found by Penn (1980) are not likely to be repeated.

The concept of an efficient market is well-known to investment professionals. In a well-functioning capital market, risk-adjusted rates of return are forced to equality. To the extent that owning an art object provides a flow of consumption services (in excess of storage and insurance costs), the equilibrium return on art for a given degree of risk should be lower than on traditional financial assets. Indeed, a natural measure of the "dividend" provided by consumption services is the excess of the return on financial assets (at a given degree of risk) over the observed return on art.

⁶The following passages are illustrative and revealing.

When New York dealer-patron-tastemaker Curt Valentine died in 1954, the print market was moribund. Valentin had worked hard to bring it to life. Audaciously, he had been a print proselytizer. He had shown thousands of imported prints - Klees, Picassos, Beckmanns, Feiningers, Mirós, Arps, priced at from \$10 to \$100 - to his 57th Street sculpture and painting buyers. He himself had published portfolios of prints and books about prints. Yet almost ten years after his death, the Marlborough-Gerson Gallery's 1963 inaugural exhibition of 289 art works, "A Tribute to Curt Valentin," had only one print - a Masson lithograph entitled "Curt Valentin." Some Tribute! Even in 1963, it seemed, not many people in the art world thought prints were very important.

(pages 175 to 176)

Prints have become very expensive during the 1960's and 1970's, and some became speculations. Prints that were unmarketable a decade ago have been finding new homes...

At the 1973 Kornfeld and Klipstein auction in Bern, Switzerland, three art dealers from London, Zurich, and Campione d'Italia dueled for the right to pay \$180,000 for a rare Picasso etching they had passed up in 1955 when it cost only \$1,000.

(pages 174 to 175)

To the extent that the results found by Pesando (1993) and by Pesando and Shum (1999) prove robust,⁷ the conclusions with regard to art as an investment obtained from the market for modern prints are as follows:

- (1) The real return on a diversified portfolio of modern prints is between one and two percent, comparable to that anticipated on U.S. Treasury Bills. (This does, of course, imply that the price of modern prints is anticipated to increase over time at a rate in excess of the rate of inflation.)
- (2) The absolute risk of an investment in modern prints most closely resembles the absolute risk of an investment in stocks.
- (3) There appears to be a limited role for modern prints to assist in the achievement of portfolio diversification.
- (4) Because of the significant buyer's and seller's premiums, an investment in prints requires a long-term investment horizon, so as to amortize these high transactions costs.

There remains the question of whether "active" investing (i.e. attempting to choose an artist or the specific prints of an artist that the market may have undervalued) in modern prints might prove profitable. This is, of course, a quite different issue, with an exact parallel in the context of investing in common stocks. In this context, I would draw attention to a related finding in Pesando (1993), a finding that has been

⁷Extending these sample periods to (say) 2000 would not materially alter the findings reported in Pesando (1993) and in Pesando and Shum (1999). A more interesting exercise might be to "backfill" the data set through information gleaned from auction catalogues, to try to identify the date at which the very high real rates of return appear to have dissipated.

replicated in other studies. Contrary to the folklore of the art trade, there is no evidence that "masterpieces" outperform the market as a whole.

Table 1

Real Rates of Return on Modern Prints and Traditional Financial Assets

Pesando (1993)

Semi-Annual, 1977 to 1992

Mean Standard Deviation

Modern Prints

Aggregate	1.5	19.9
Picasso	2.1	23.4
U.S. Stocks	8.1	22.5
U.S. Government Bonds	2.5	21.8
180-Day Treasury Bills	2.2	3.4

Pesando-Shum (1999)

Semi-Annual, 1977 to 1996

Mean Standard Deviation

Modern Prints

Aggregate	Not Calculated	
Picasso	1.5	21.9
U.S. Stocks	9.1	16.8
U.S. Government Bonds	3.5	16.5
180-Day Treasury Bills	2.3	2.4

Table 2

Irrational Exuberance?
Picasso Prints in the November 10, 1997 Sale of the
Collection of Victor and Sally Ganz

<u>Picasso Print (Bloch Catalogue Number)</u>	<u>Estimate</u>	<u>Sales Price¹</u>	<u>Highest Auction Price¹</u>	
			<u>Preceding 3 Years</u>	<u>Succeeding 3 Years</u>
Tete de femme (B.1067)	\$28,000 - \$34,000	\$123,500	\$39,199	\$42,250
Deux femmes sur la plage (B.789)	\$ 7,000 - \$ 9,000	\$34,500	\$ 8,052	\$15,307
Visiteurs divins dans l'atelier (B.770)	\$12,000 - \$16,000	\$51,750	\$15,426	\$12,494
Tete de femme (B.1065)	\$28,000 - \$34,000	\$90,500	\$40,250	\$38,520
Le chapeau à fleurs (B.1149)	\$25,000 - \$35,000	\$79,500	\$35,500	\$46,575

¹Includes buyer's premium

Table 3

**Real Rates of Return on Picasso Prints Sold in the November 10, 1997 Sale
of the Collection of Victor and Sally Ganz**

<u>Print Ganz</u>	<u>Year of</u>	<u>Ganz</u>	<u>Adjusted</u>	<u>Return</u>	<u>Return after 1977</u>	
	<u>Purchase</u>	<u>Return</u>	<u>Ganz Return⁽¹⁾</u>	<u>Before 1977⁽²⁾</u>	<u>Ganz</u>	<u>Adjusted</u>
B.1067	1962	10.4	6.4	9.3	12.3	1.7
B.789	1959	7.8	4.1	8.5	7.0	(1.1)
B.776	1958	8.4	5.2	7.5	9.3	3.1
B.1065	1962	9.5	6.4	5.2	7.9	2.7
B.1149	1963	<u>10.7</u>	<u>8.1</u>	<u>16.5</u>	<u>6.8</u>	<u>2.5</u>
		9.4	6.0	9.4	8.7	1.8

¹ The real return if the print had sold at its high estimate.

² To the date of the first sale in the sample period which starts in 1977, the sample period used by Pesando (1993) and by Pesando and Shum (1999).

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