

# The Demand for Art: Resolving the Conflict between the Consumer and the Connoisseur

*"...To attempt an estimate of the money value of the artistic content of our museums would be an intellectual vulgarism...(art) is a service to society as free from the rules of demand and supply as the service of law..."*

- T. Adams (1937) *The Civic Value of Museum*. Shorthall: New York.

## Review of Literature

Pick up any stack of papers that attempts to interpret art in an economic perspective and they will all agree on one thing. Art is completely economically unpredictable. And then don't expect them to agree on anything else, because they most certainly won't. The data from the art market is widely disagreeing and somewhat subject to interpretation.

So if we're uncertain about data from the art market, how do we even begin to analyze it? A good start is to look at what we do know about the history of the market. David Ormrod (1999) gives a quick look at how the art market has preformed in the past in his study on the history of the art trade. The most important thing Ormrod uncovers, by tracing historical incidents in art, is the ongoing mystery of consumption in the market. He claims that before the historian can begin to analyze the art market, he must first understand what drives consumers to purchase art in the first place (Ormrod 550). If

this understanding is necessary for the historian, it is most certainly necessary for the economist.

So what drives the consumer to purchase art? James E. Pesando (1993) suggests that people wish to hold art as an investment. His paper, "Art as An Investment", only touches briefly on a wide range of subjects. The findings, however, could form the groundwork for further research. His first discovery is that art only holds positive returns at short horizons (Pesando 1088). The longer an investor holds an art piece, the smaller its return will be.

Second, there is no evidence that art can outperform the investment market, as is often thought by those in the art trade. The common thought in the art trade is that more expensive pieces will have higher returns in the end. In other words, it's better to buy one 100,000-dollar print than ten 10,000-dollar prints. Pesando's research showed, however, that this is not true. The desirable characteristics of more expensive masterpieces are capitalized into their prices in the end, and masterpieces do not outperform the market (1082). This point shows some amount of efficiency in the art market.

That, however, was one of the only places he found the art market to behave normally. Strangely, there was substantial price variation for identical prints sold within 30 days of each other (1088). Identical prints brought different prices that varied on the average of thirty percent. Prints bought at American auctions brought consistently higher prices than did those in Europe. And the prices of prints sold at Sotheby's auction in New York were consistently fourteen percent higher than identical prints sold at Christie's in New York (1088).

Maybe a partial explanation for all this variance can be found in William N. Goetzmann's article, "Accounting for Taste." Goetzmann (1993) describes the demand for art as a function of wealth and taste. Taste, being the preferential taste of buyers, is nearly impossible to measure. Goetzmann only acknowledges that taste is probably to blame for all the disturbance of the market. He then quickly moves on to talk about the effect of wealth on the demand for art.

His conclusion is that there is a basic connection between art and money. He found that art demand is positively correlated to the stock market. When the rate of return is better on other investments, people are more likely to invest in art. Goetzmann suggests that this is because art is a very risky investment, and people are much more willing to take the risk when they are financially secure and can afford to possibly lose the investment. Therefore, prices on art will vary considerably depending on the wealth of the collectors who desire it (Goetzmann 1375).

This might make art seem like a strange or even shady investment, and that may very well be the case. William J. Baumol calls art investment a "floating crap game," in his article "Unnatural Value: Or [appropriately] Art Investment a Floating Crap Game." (The floating "crap" in the singular form, instead of "craps" in the plural form as the title of the game is usually spelled, may or may not be a typo of Baumol's. But that is how it is sincerely spelled in the title.) Here, he shows that looking at art primarily as an investment is foolish because art does not exhibit the same characteristics as other competing investments (a.k.a. stocks). Stocks are perfect substitutes for each other. Pieces of artwork are not. Stock is held by many individuals dependent on the market to

set the price (Baumol 10), while the owner of art holds what may be a monopoly on that piece of work. And stocks are traded frequently, where art is traded much less often (11).

His conclusion is that the art market is even more unpredictable than the stock market, and those that seek to use strategy to “win” in the market are wasting their time. The only way the art market can exhibit a rational advantage over the stock market is for those that derive a high rate of return from the aesthetic pleasure of art (14).

However, Stein (1977) in turn points out in “The Monetary Appreciation of Paintings” that this is only true for the current moment in history. In his article he shows that during the 1950’s and 60’s, art was actually a *better* investment than stocks (Stein 1021). Over the years, the art market has actually fluctuated quite randomly, at one point being a profitable investment, at other times a risky investment. The frustrating thing is that with such disagreeing data on the art market, it is difficult to analyze the reasons for these fluctuations.

So what common thread runs through all of these articles? The answer, art is an investment, be it for monetary gain or aesthetic enjoyment. And before we can analyze art as an investment, we have to understand the behavior of the people who make the investment. Each of these articles has taken a look at some small piece of the art market along with its investors and attempted to draw some conclusion about them. So basically we have a lot of little snapshots of art as an investment, but no unified picture of how art behaves in the market. And all of the authors have agreed that such a unified picture does not exist.

## Hypothesis and Methodology

But if we can't have a unified picture, that doesn't mean we can't draw something from the smaller snapshots. As mentioned earlier, before we can understand art as an investment we have to understand the behavior of the people who purchase it. Thus, we have to understand the demand for art, or the driving forces that propel people to consume it. While this is only a small piece to apply toward understanding the art market, it is a start. And in the end, it's the small pieces that add up to the big picture anyway.

So with our attention on this narrower subject, we can ask the main question. What affects the demand for art? We know that art demand must be a function of something. So the first question to ask is what might either encourage or discourage the purchasing of an art piece by a consumer. Like any other good in the world, the first thing to consider is the price. In a normal market for a normal good, we expect the quantity demanded of a good to decrease when price increases, so that there is a negative relationship between price and quantity. This may or may not be true for art, since we are not exactly sure if art is a normal good. If quantity demanded of art turns out to be positively correlated with the price, we will know that some other factors exist outside of price that effect the quantity demanded.

Also, as discussed in the review of literature above, Goetzmann (1993) suggested that the demand for art may be also be affected by the income of its buyers. He suspected that there was a positive relationship between income and the quantity demanded of art, so that in essence when people were richer they demanded more art. But is this really the case?

We can easily test both of these theories with a simple regression model that regresses the quantity demanded of art against these two factors, price and income. Information on quantity of art sold at specific prices is easily accessible from the Sotheby's website, one of only two famous art auction houses in the world. Sotheby's lists its paintings sold by genre of the painting and by the date. Because of the sheer mass of the data, it was necessary to pick only one genre of art to measure. The category *Old Masters* was selected, which includes "every subject imaginable painted on canvas, panel or metal by the great European masters and their followers from Giotto to Goya, from the early Renaissance circa 1350, to circa 1800" (Old Master Paintings).

The paintings that were sold at auction, along with their respective prices, were then separated into groups by date, specifically by quarters, ranging from the first quarter of 1998 to the first quarter of 2005. (The significance in grouping the paintings by quarter is so we can also look at the corresponding income of consumers at that particular date, but more on that later.)

Once grouped into quarters, the prices of these paintings were examined and broken into seven brackets: \$0-30,000, \$30,001-60,000, \$60,001-90,000, \$90,001-120,000, \$120,001-200,000, \$200,000-500,000 and greater than \$500,000. Paintings in the first bracket were assigned a categorical variable value of 1, the second a value of 2, third a value of 3, and so forth.

Next, we look at income for each of the specific quarters. Information on income for the economy as a whole is easily accessed from the Bureau of Labor Statistics website. We know that national income ( $Y$ ), is roughly equal to real gross domestic

product. RGDP was therefore collected for each of the quarters in which the paintings sold.

And then, armed with all the necessary data, the economic regression was set up. The dependent variable is  $Q$ , quantity demanded of art in each price bracket for each quarter. The first independent variable is  $P$ , the price bracket corresponding to the given quantity. And the second independent variable is  $Y$ , the real gross domestic product (a.k.a. income) that corresponds to the given quarter. The regression equation is as follows:

$$Q = P + Y$$

## Results

After the analysis was run, the following results were obtained contained in Table 1 following on page 8. As proof that the model as a whole is accurate, we can look at the square of the correlation or the  $R^2$  value. At .492487 it can be said that the errors in this model are about 49% less than they would be if we had simply used the average values of the variables. Also, the F-statistic, which gives the probability of all of the variables jointly being insignificant, is zero. Thus, the model is a fairly good predictor for quantity demanded of art.

Table 1

Dependent Variable: Q

Method: Least Squares

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Sample(adjusted): 1 105

Included observations: 105 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
P	-9.957143	1.003168	-9.925695	0.0000
Y	-0.001342	0.001978	-0.678759	0.4988
C	73.63429	20.65044	3.565749	0.0006
R-squared	0.492487	Mean dependent var	20.12381	
Adjusted R-squared	0.482536	S.D. dependent var	28.57975	
S.E. of regression	20.55883	Akaike info criterion	8.912614	
Sum squared resid	43111.89	Schwarz criterion	8.988441	
Log likelihood	-464.9122	F-statistic	49.49007	
Durbin-Watson stat	1.273313	Prob(F-statistic)	0.000000	

As for the variables, Price (P) had a t-statistic of  $-9.925695$ . The absolute value of this t-statistic is greater than the critical value of 1.96 at a level of 95% confidence.

Also the p-value, which is the probability of rejecting a true hypothesis, is zero.

Therefore, price can be considered to have a significant effect on the quantity demanded of art.

The coefficient on price (P) is  $-9.957143$ . Because P is negative, we see that quantity demanded is negatively correlated with price. This will be crucial later in our analysis of these results.

The variable Y, or income, had a t-statistic in absolute value of only 0.001978. This is not quite the 1.96 necessary to be considered significant. Also, the p-value was .4988. This means that there is nearly a 50% chance of rejecting a true hypothesis for the variable Y. Both of these factors indicate that Y is unreliable in our model and thus we must choose to ignore it.



## Data Analysis

So this brings us back to the main question, is the price of art negatively correlated with the quantity demanded of art, as it is for other normal goods? The answer: yes, it is. When the price of art rises, people buy less of it. When the price falls, people buy more.

For some, this might seem surprising or even unethical. What about all the other factors surrounding art? Why would art collectors be concerned about price? Isn't it about the love and appreciation of art? Thomas Adams, the man quoted at the title of this paper, would probably be disgusted at these findings. He believed trying to equate art with economics was an "intellectual vulgarism."

But does fitting art into the framework of economics really make it intellectually vulgar? No, of course not. It's actually just the opposite. Understanding art in the framework of economics is actually an intellectually and culturally *elite* understanding. Just because the results tell us that people care about the price of an art piece, it doesn't mean that price is the only thing they care about.

To begin to understand this, let us consider a world in which the price of art is *positively* correlated with the quantity demanded. First we need to know what factors determine the price of art. Probably the most important factor is the quality of the work. Clare Andrews (1998) asserts in her study of art prices that, while there are many things that affect the price of an art piece, quality is certainly one of the greatest contributors. A collector would be willing to pay a much higher price for a painting he considered to be of higher quality, than he would for one that he considered to be of lower quality.

Given this, one might be tempted to say that a positive correlation between price and quantity would mean that a higher price meant higher quality, and thus people demand larger amounts of quality work. As prices rise, quality rises. So people demand larger quantities of more expensive artwork because the quality of expensive art is better. (Adam's would probably love this kind of world.)

In a hypothetical world where price is positively correlated with art, we might imagine a warehouse where you could walk in and see paintings lined up in rank from inexpensive low quality to very expensive high quality. The shelves with inexpensive paintings would be full, while the expensive paintings would be all gone because people demand more art at higher prices. And why shouldn't they? After all, a higher price means higher quality. And art lovers care very much about the quality of a work.

But the real world of art sales is not anything like this hypothetical warehouse, especially not the world of Sotheby's. In the real life Sotheby's market, it is very difficult for artists to make their way into the trade. They must achieve great measures to make a name for themselves by demonstrating mastery of their work. If an artist's product isn't high quality, he doesn't get put on a low-quality shelf with a cheap price sticker, he gets completely removed from the scene. The Sotheby's art market doesn't have shelves for low quality paintings. If there were to be a warehouse for Sotheby's, a buyer could walk in confidently knowing that whatever piece he purchased, it would be of a high degree of quality.

Now this doesn't mean that there is no discrepancy between qualities of paintings at Sotheby's. Clearly there is a difference between a Rembrandt masterpiece and a less famous Vittore Carpaccio. But the point is that both pieces are of superior quality

already if they've made it to Sotheby's. And in reality, there aren't many Rembrandts out on the market anyway. Most of the art sales have a somewhat homogenous composure, with most of the art from the same period and of the same quality.

Occasionally there may be a very expensive outlier, like a Rembrandt, but not often.

To demonstrate this point further, four auctions were picked at random from among the data set used in this paper. Statistical analyses were run on the prices of artwork contained in each of the sets to determine their means and standard deviations.

The results are shown here in Table 2.

Table 2

Data Set	Mean	Standard Deviation	Minimum	Median	Max
1	\$16,904	\$14,719	\$2300	\$12,650	\$104,250
2	\$12,565	\$16,289	\$1725	\$8050	\$156,500
3	\$18,975	\$20,897	\$3400	\$10,560	\$400,000
4	\$11,500	\$19,400	\$2410	\$9900	\$323,340

As is shown, all of the sample auctions showed similar results. The mean prices, standard deviations, minimum, median, and maximum values were all very alike.

So then, if buyers can arrive at Sotheby's already knowing they will receive a quality piece of work, and the pieces of artwork they have to consider are somewhat homogenous in quality, why shouldn't they be discriminative about price?

Consider the hypothetical warehouse again. If a buyer walks into an art warehouse that is reflective of the real world art market, he doesn't see paintings lined up

from cheap low quality to masterpiece high quality. Instead he sees a collection of paintings that are very similar in quality and price. Now, some are less expensive than others, some are more expensive. But the buyer doesn't see those prices as really reflective of the quality of the art. He knows already that the art is of a high-caliber. His choice, then, is to decide which purchase will maximize his utility. There, he relies on other factors to determine his purchase, such as taste and preference or his appreciation for the particular artist, in *combination* with the price. Thus, if he can maximize his utility with a lower priced painting that suits his preferences to the same degree as a higher priced painting, he will opt for the lower price. He attains about the same amount of culture and quality, and gets to save money at the same time.

And so, we can kind of see where the negative correlation between quantity demanded and price of art comes into play, without stripping the purchase of art of its culture and intrinsic value. People don't want cheap art. You can't get "cheap" art at Sotheby's. Instead, art lovers are faced with a somewhat homogenous group of art choices. Being that all the pieces are somewhat equal in cultural value, the buyers will try to get the best piece they can at the lowest price possible. And so, people demand more art at lower prices, less at higher prices.

Fair enough. But what else do we need to consider when looking at the correlation between quantity demanded and price of art? When looking at any demand function, a question should arise about the elasticity of demand. How elastic is the price-elasticity of demand for art? How responsive are the consumers of art to changes in price?

While more research would be required to evaluate the price elasticity for this model, we might still be able to say something about the price elasticity of art demand in general. David Throsby (1994) of Macquarie University did a study on the elasticity of demand for the performing arts, among which art exhibitions are considered. He found consumer demand for tickets to such events to be strongly inelastic. When ticket prices went up, people kept buying at about the same amount (9).

But there was one stipulation. Consumers were only less sensitive to a changing ticket price if they were certain that the quality of the performance was unchanged, or in the case of an art exhibition, if the quality of the work on exhibit was unchanged. It turned out that ticket sales were strongly influenced by changes in quality. If people felt that the quality of an exhibit had gone down, their purchases went down significantly. In other words, consumers were quality elastic, but price inelastic.

What does this mean about art sales? It might mean nothing at all. But what it does begin to show is that consumers are much more concerned about the quality of art than they are the price of art. So art lovers need not worry about the negative correlation between quantity and price of art. It doesn't mean that people are demanding lower *quality* art because they demand a little more art at lower prices. In fact, in this example if art quality was to go down, people would actually demand less of it. A lower price of art doesn't necessarily correlate to lower quality.

## Conclusion

And so, the art connoisseurs can rest easy. Putting art in an economic model does nothing to rob the trade of any of its culture or beauty. It is not, as Adams said in the quote at the beginning of this paper, an “intellectual vulgarism.” And art is most certainly not free from the laws of supply and demand.

Art sales respond to prices in the same way that most all other goods in the world do. Less art is bought at higher prices, more at lower prices. In the end, the art trade is subject to the same rules as the rest of the world’s markets. But that doesn’t really make it crude or “vulgar.” Economic models weren’t designed to vulgarize the world. They were designed to explain it more clearly, more fully, with more depth. Much like van Gogh did when he painted *Starry Night*, shown here.



*Vincent van Gogh's Starry Night, circa. 1889*

He wasn't vulgarizing the stars by painting them too big and in the wrong colors. He was showing the depth of them that the rest of us might not catch in everyday passing of the night sky.

The same is true of supply and demand. It's just an interpretation that vivifies the way the world is to those who might otherwise overlook it. There is beauty in the lines of an economic graph in the same way there is beauty in an oil-on-canvas, because both of them rely on interpretation. And there is revealing splendor in interpretation. That is what both art and economics are all about.

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