Painted Lemons?

The Value of Information in the Art Market

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Introduction

The effectiveness of markets depends on information, which is often costly to obtain and unevenly accessible. The art market in particular is famous for being opaque to outsiders. What is the value of information in the art market? How does the market react when new information is exogenously introduced? The paper takes advantage of a legal shift that incentivized market insiders to increase the production of information, exploring the broader question of how legislation impacts information production.

In the 19th century, there was a notable emergence and subsequent decline of the Old Masters market in Britain. The onset of the French Revolution brought previously unseen masterpieces to London, which sparked a fascination for Old Masters. New investors entered the market and new intermediaries sprang up to provide the supply (Avery-Quash and Huemer 2019). However, the artworks traded often failed to live up to their advertised originality. Several court cases at the time document that paintings were often misattributed; Instead of being painted by the Great Masters themselves, they were instead works of a contemporary or even replicas from a later period (Harter-Bachmann 2007). This raises a critical question: What happens in a market fraught with uncertainty and asymmetric information when new information becomes available?

This paper leverages the Power v. Barham court case as an exogenous shock. The ruling mandated that intermediaries, such as art galleries and auction houses, exercise due diligence when attributing artworks. Unanticipated by the market, the ruling disrupted market practices by increasing the returns for authenticating artworks.

The first part of the paper establishes the theoretical and historical framework, focusing on the costs of producing information and the incentives faced by art dealers and auctioneers. The second part outlines the difference-in-differences methodology, demonstrating why Power v. Barham provides an ideal setting to analyze the value of information in a market shaped by uncertainty and asymmetric information.

1 Literature

This paper seeks to expand the scope of economic historical research on the art market by moving beyond performance analysis and delving into its underlying microstructure. Existing research in financial history often focuses on calculating art returns and comparing the performance of art to other asset classes (See Goetzmann 1993, Mei and Moses 2002, David et al. 2021). This body of literature largely overlooks deeper structural and historical dynamics. In this paper, I look at the role of art dealers and auction houses in generating information. My approach situates the study of the art market within the growing literature in financial history on the role of institutions in information production, such as underwriters in sovereign debt markets (Flandreau et al. 2010), acceptance houses in the money market (Accominotti, Lucena-Piquero and Ugolini 2021).

2 Information Production in the Art Market

This section provides an overview of how information in the art market is produced and what the cost and benefit calculation is that art dealers and auction houses face when producing information.

Old Master artworks, created by famous artists before the French Revolution, are sold on the secondary market through art dealers or auction houses. The catalogue serves as the most important source of information for potential buyers, outlining objective details about the artwork, such as size, medium, and support. Probably the most crucial piece of information included is the artist's name. In the primary art market, where artworks are typically purchased directly from the artist, identifying the creator is relatively simple. However, in the secondary market, artworks have to be attributed by the intermediary.

There are two methods for determining an artist's identity that developed in the 19th century (Hodkinson 2014). The first is connoisseurship, where experts analyse the style and technique of a painting and compare it to known works by an artist. The purpose of such an examination is to identify those formal and structural characteristics in an object that are typical of a particular artist's technique. Developing this expertise requires extensive training through fieldwork, most often by touring continental Europe to see the greatest works of art first hand (Avery-Quash and Pezzini 2021). Determining the attribution of a specific artwork often required direct comparison. For example, the National Gallery sought access to the Royal Collection to verify the attribution of a potential acquisition. Gaining access to such relevant artworks for comparison was an expensive endeavor, demanding significant resources both financially and in terms of social capital (Clarke 2022, p.105f.). In addition to being costly, this method is only accessible to the intermediary since it required close access to the artwork under investigation. While artworks are sometimes exhibited in an art gallery or at an auction house prior to the sale, it doesn't allow for a full inspection, let alone for a comparative analysis.

The second method for determining attribution is through historical research. One of the most compelling forms of proof of authenticity is the ability to trace a complete provenance, from the artwork's current owner back to the original artist. The initial source of information is, of course, the current owner of the piece. This information is in the hands of art dealers and auction houses, but is often unknown to the majority of buyers. Between 1830 and 1840, over 90% of transactions did not include any details about the seller. In addition to the vendor's records, experts may consult the known writings of the artist and their contemporaries for references to the work, as well as exhibition and auction catalogues, when available. However, tracing provenance is a labor-intensive and resource-heavy process.

During the 19th century, the term 'Old Masters' did not refer to British artists, and 85% of artworks sold between 1830 and 1840 were not of British origin, presenting a significant geographical challenge. The political turmoil in continental Europe further exacerbated the issue. This made authenticating artworks not only more costly but also introduced artworks of more dubious origin to the market, as looters took advantage of the war (Avery-Quash and Pezzini 2021).

The primary motivation for art galleries and auction houses to invest in producing attribution information lies in buyers' willingness to pay a premium for a genuine Old Master artwork. For instance, the art dealer Luigi Celotti (c.1768-c.1846) produced information on the artist Antonio da Solario after having found a signed work by the artist (Avery-Quash and Pezzini 2021). However, the challenge is that the financial return is uncertain. Both art dealers and auction houses earn a percentage of the final sale price, making it difficult to predict whether, or by how much, the value of a piece can be increased through authentication. Meanwhile, the costs of enhancing attribution certainty are guaranteed to reduce their profit margin.

In the early 19th century, the main risk of an incorrect attribution in a catalogue was reputational. Legal liability was largely avoided due to the precedent set by Jendwine v. Slade (1797), which classified attributions in catalogues as opinions rather than guarantees, placing the burden of judgment on buyers. However, efforts to build a strong reputation through accurate attributions often clashed with business incentives. Art dealers and auction houses, reliant on attracting sellers, faced a dilemma: reattributing an artwork from Rubens himself to his workshop, for instance, could alienate the seller. Recognizing the critical role of attribution in achieving high prices, sellers might choose to take their business elsewhere, opting for intermediaries who would maintain more favorable attributions. Even for art dealers who purchased artworks with the intent to resell, the incentives were limited. The business was already capital-intensive and required a quick turnover of artworks to maintain liquidity (Avery-Quash and Pezzini 2021).

3 Empirical Strategy

In order to differentiate better between change in taste and uncertainty, I explore the court ruling of Power v Barham (1836). The ruling marked a change in jurisprudence, making intermediaries accountable for the attribution they assign to an artwork. Attributions were previously regarded as subjective opinions unless explicitly accompanied by a guarantee.

3.1 Exogenous Shock

The case was similar to the precedence set by Jendwine v Slade (1790). The similarities between the two cases were pointed out by the attorney general at the time: Both were a case of refunding the money paid for a picture that turned out to be not painted by the Old Master named in the catalog. Importantly, in neither case the seller provided an explicit guarantee that the pictures were originals. The name of the artist was only mentioned in the documentation of the sale: In Jendwine v Slade the attribution was listed in the catalog, whereas in Power v Barham the artist name was recorded in the bills of parcel.

In 1790, the court ruled in favour of the defendant, the art dealer Thomas Moore Slade, stating that based on the lack of information available it could only be a matter of *opinion* whether the artwork is actually by the artist in question. But in 1836, the court ruled in favor of the plaintiff. It was determined that there was sufficient information on the artist and that the art dealer was responsible for a certain degree of due diligence when attributing the artwork.

This break from the previous precedence created great consternation among art dealers, as documented in the Morning Herald:

> The verdict against the defendant had created great consternation among the dealers in paintings, as they had considered the doctrine of Lord Kenyon conclusive in cases of this nature, and had invariably acted upon it. The COURT thought the case had been properly left to the Jury, and refused to disturb the verdict.

The reaction of the art dealers underscores that the shift in the legal doctrine was neither influenced nor foreseen by the art market. In other words, the event is not anticipated and is not subject to reverse causality, making it an ideal case study to explore.

To my knowledge, there were no other events inside or outside the art market that coincides with the court decision. In the same year, the House of Commons committee investigated the market for English engravings. However, the investigation only started in June of 1836 and had no immediate consequences (Pye 1836). Changes to the copyright act only followed in 1842 (Verhoogt 2019, p. 310). Art historian John Smith published his seventh catalogue raisonné on Rembrandt in 1836. His books served to educate the novice investor as described by the author in the introduction to his ninth and final volume. Hence, Smith also comments on prices. Since the book impact market uncertainty around Rembrandt by making information on his artworks more accessible, I exclude any artworks attributed to Rembrandt for robustness.

3.2 Control Group

I use two control groups in my analysis. First, I compare attributed artworks with non-attributed artworks. The court case enhances the credibility of attributions to a specific artist, as artworks simply identified by their century or region, rather than by a named artist, are less prone to dispute. Second, I compare Old Masters with contemporary art. The issue of attribution is relevant only to Old Masters, as contemporary artists can directly authenticate their own works, given that they are still living.

3.3 Data

I retrieve transaction data from the Getty Provenance Index that records sales from both auction houses and art dealers from 1789 to 1840. The data covers the majority of surviving records: Until 1820 92% of surviving English catalogs are captured, and between 1831 to 1840 about 75% (Getty Institute 2020).

4 Results

Power v Barham shifted the incentives for art dealers and auctioneers to produce information by introducing a cost of not doing their due diligence. Indeed, auction catalogues began featuring disclaimers at the outset, clarifying that attributions reflect the auction house's opinion. Within the catalogue, art dealers and auctioneers have a hierarchy in how they express the attribution of an artwork. In it common practise that writing the full name of an artist is reserved as communicating the highest form of certainty of it being by the artist. If there is doubt qualifiers such as 'Workshop of' or 'Circle of' might be added.

Table 1: Distribution Attribution (in %)

Certainty of Attribution		Before (1830-1835)		After (1836-1840)	
1	Definitely by the artist	10.2	%	9.9	%
2	Probably by the artist	12.3	%	14.8	%
3	Connected to the artist	60.6	%	62.0	%
4	Contemporary of the artist	0.6	%	0.6	%
5	Copy from a later period	2.8	%	3.9	%
6	Anonymous	12.5	%	7.5	%

Legend — Definition		Example
1	Full name (including first name spelled out)	Peter Paul Rubens
2	Initial of first name OR 'Attributed to'	P.P. Rubens
3	Last name only OR 'Workshop/Studio/Aterlier of'	Rubens
4	'School/Circle/Follower of'	Follower Rubens
5	'Style of', 'Manner of', 'After', 'Copy of'	After Rubens
6	Period and location but not linked to a specific artist	17C Flemish

I classify the various practices on a 6-level scale in how certain the attribution is. Table 1) documents the distribution for the five before and after the court case. As hypothesized, there is an increase in the use of qualifiers in how the artwork related to a famous artist; Categories 2 through 5 show notable growth.

Facing now legal consequences for misattribution, one would assume that (1) intermediaries would be less likely to attribute an artwork explicitly to an artist (Attribution=1), meanwhile (2) Buyers would be willing to pay a premium for those attribution, now they have more assurance.

For the first hypothesis, I run a simple probit regression about the likelihood of an artwork being attributed with absolute certainty (Attribution =1) in the five years before and after the court case. As we expect, the probability of an artwork being attributed to an artist with absolute certainty decreases. Although statistically significant, a 1% drop in probability is not economically significant.

Table 2: Probit Regression Results

$$Prob(\text{Attribution} = 1) = \beta_0 + \beta_1 \text{Post}_{\text{Jan 1836}} + \gamma_1 X_i + \epsilon$$

Variable	Coeff.	SE	dy/dx	
$Post_{\text{Jan 1836}}$	-0.10	0.02	-0.01	***
Signed (Dummy)	1.06	0.18	0.17	***
Dated (Dummy)	0.54	0.07	0.08	***

Significance levels: $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

Secondly, I run use difference-and-differences comparing the affect of being attributed with certainty on the price:

$$\begin{aligned} ln(\text{Price}) = \beta_0 + \beta_1 D_{\text{Attribution=1}} + \beta_2 \text{Post}_{\text{Jan 1836}} \\ + \beta_3 D_{\text{Attribution=1}} * \text{Post}_{\text{Jan 1836}} + \gamma_1 X_i + \gamma_2 D_t + \epsilon \end{aligned}$$

where X_i controls for the characteristics of the artwork (e.g. medium, signed (dummy), etc.). D_t captures the time dummies. My control group are artworks with no attribution to a single artist (Attribution=6). Results are reported in Table 3.

After the court case, buyers place a premium on certainty in attribution. The coefficient for attribution certainty in the short-term (2.41) emerges as the most substantial contributor to price. For reference the average $ln(price)$ is 1.39. Although the attribution coefficient is notably large and clearly positive—evidenced by the standard error being smaller than the coefficient—the effect is not statistically significant. Additionally, the premium associated

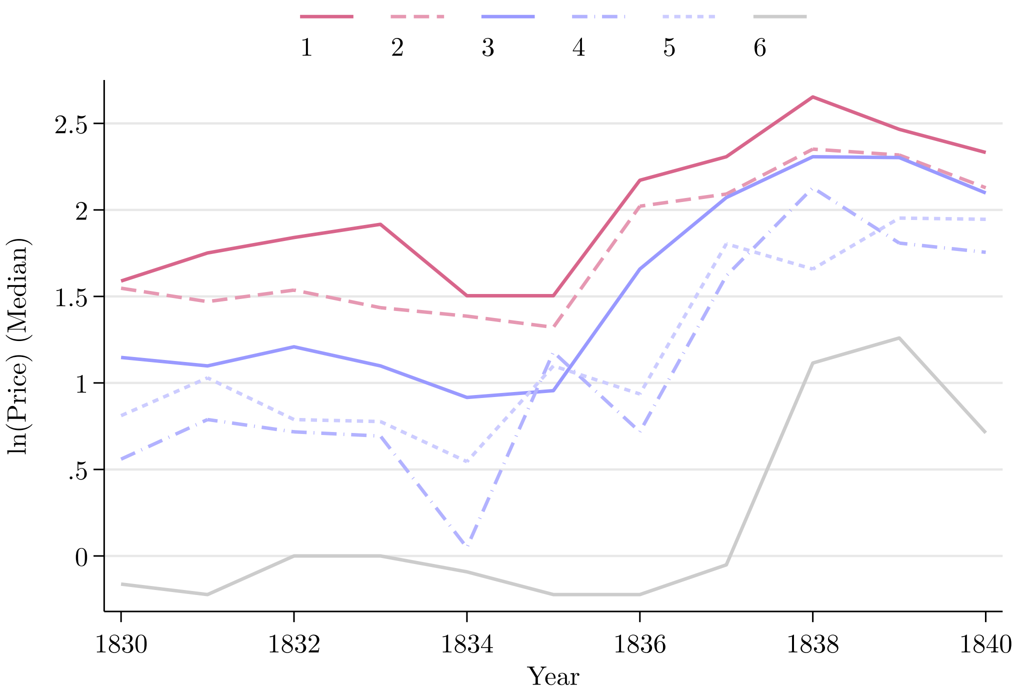
Table 3: Regression Results on Price

Variable	Short-term (± 1 year) Coeff.	SE	Long-term (± 5 years) Coeff.	SE
$D_{\text{Attribution}=1} * \text{Post}_{\text{Jan 1836}}$	2.41	1.84	0.69	0.57
$\text{Post}_{\text{Jan 1836}}$	−1.37	1.82	0.63	0.60
$D_{\text{Attribution}=1}$	1.03	1.04	1.63^{***}	0.34

Note: Short-term $N = 254$, $R^2 = 46\%$; Long-term $N = 1,425$, $R^2 = 37\%$.
Significance levels: $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

with attribution certainty appears to diminish over time, as indicated by the comparison of effects over 1- and 5-year intervals.

Figure 1: Median Prices across Attribution



The premium for certainty appears to decline as the overall market benefits from improved information production. As shown in Graph 1, the median price rises across all attribution categories following the court case. Additionally, Table 1 highlights a reduction in the share of anonymous artworks. This outcome may be driven by two factors: First, as attributions become more trustworthy, buyers may place greater value on them, incentivizing intermediaries to invest more in attribution research. Second, the marginal cost of conducting attributions may decrease as intermediaries allocate more resources to enhancing their due diligence practices.

5 Conclusion

This paper seeks to push the frontier of economic historical research on the art market by moving beyond performance analysis and delving into its underlying microstructure. In this paper, I look at the role of art dealers and auction houses in generating information. To analyze the value of information, this paper takes advantage of the Power v Barham (1836) court ruling. By encouraging intermediaries to investing in attributing artworks, the change it jurisprudence exogneously encouraged more information in the market to be produced. I show that buyers are willing to pay a premium for certainty in attribution. The effect is not limited to the top share of the market. Most notable, the share of anonymous artworks declined. An indicator that overall information available in the market increased.

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