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Organizational and Epistemic Change: The Growth of the Art Investment Field

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Abstract

What can studying the creation of knowledge tell us about how new technical fields emerge and develop? This paper shows how a knowledge community may be necessary to support the legitimacy of new products that undergo performance evaluation before purchase. Using historical and ethnographic data covering half a century, we review the growth of the art investment field through an epistemic cultures lens. Technical knowledge about the financial characteristics of art has been developed alongside practical knowledge about how best to structure investment ventures. Investment venture success has been determined by legitimacy as much as by profitability, given durable expectations about the evaluation and monitoring of investments. The growth of knowledge, practices and tools was thus a necessary condition for the recognition of artwork as an asset class. Crucially, the epistemic cultures approach highlights deepening knowledge, resources and professional expertise, and their development through experimentation, failures and negative knowledge. This shows accounting issues contributing to technical field legitimacy and emergence, such as the role of knowledge production, valuation practices and receptive environments, and the distinction between legitimate investments that can be valued and investment venture profitability.

Keywords

Accounting and financial knowledge claims; Art investment; Epistemic cultures; Performance measurement; Technical fields; Valuation practices.

Introduction

What can studying the creation of knowledge tell us about how new technical fields emerge and develop? In the case of products that undergo performance evaluation before purchase, knowledge claims and expertise are typically related to measures of performance. This is particularly true for financial investments, where the practices of due diligence, performance measurement and benchmarking are important for initial investment selection, as well as later monitoring. Yet time and effort is required for the evaluation of a new investment category to take place, both in developing acceptable performance measurement practices and in enabling recognition and legitimization of the resulting knowledge and expertise. One productive way to analyze these issues comes from the sociology of knowledge and science studies. In this paper, we use an epistemic cultures approach (Knorr Cetina, 1999)—focusing on the assumptions, tools and practices that make up “how we know what we know” (p. 1)—to understand the knowledge processes entwined in the development of a new field of investment.

Our work connects to prior research on the practices underpinning asset valuation, which has long seen a role for accounting in the explanation and rationalization of actions and decisions (Amernic, 1985; Ansari & Euske, 1987; Burchell et al., 1980). As there is little empirical research showing how such rationalization efforts become connected to specific valuation practices, the epistemic cultures approach is helpful due to its focus on the processes by which knowledge and expertise are created. The epistemic approach also highlights that knowledge claims must find recognition in existing institutions and systems of understanding. This relates to prior studies on how legitimacy concerns infuse practices such as budgeting techniques (Moll & Hoque, 2011) or the adoption of accounting principles (Carpenter & Feroz, 1992), and on the importance of legitimacy among key audiences (Gendron et al., 2007; Mennicken, 2008; O’Dwyer, 2011; O’Dwyer et al., 2011; Power, 1996).

In the case of new products that undergo technical evaluation before purchase, shared expectations related to issues such as standardization, measurement and valuation provide a durable set of constraints for entrepreneurs. These constraints are unlikely to be overcome by the clever advertising and marketing that work in many other markets. Instead, product properties must be documented

(Czarniawska & Mouritsen, 2009), and there exist pressures to conform to external expectations (Beck & Walgenbach, 2005) and existing metrics (Beunza & Garud, 2007), such as financial audit techniques (O'Dwyer, 2011). This may even require firms themselves to invent new techniques to measure and assess the specifications of new product types in the absence of existing tools and benchmarks. At the same time, these techniques must be developed over time and in ways that allow knowledge claims about the assets to be recognized and legitimated (Gendron et al., 2007; Power, 1996), which may mean appropriating existing standards from other legitimated areas (O'Dwyer et al., 2011; Suchman, 1995). Studying empirical examples has the potential to provide additional nuance to our understanding of the processes by which this recognition can occur.

A sociology of knowledge approach to study the development of new technical fields also allows accounting research to speak to the growing line of historical and narrative studies on field emergence in the organizations literature (e.g. Jones, 2001; Khaire, 2014; Weber et al., 2008). More specifically, it can nuance the existing organizational fields work by emphasizing the importance of knowledge and expertise development and legitimization required for recognizable markets and products to emerge (Carruthers & Stinchcombe, 1999; MacKenzie & Millo, 2003; Pontikes, 2012; Smith, 2007; Zuckerman, 1999), particularly when it comes to problems of performance measurement, valuation and calculability.

To study how the creation of knowledge relates to the growth of a new field, we examine the development of art as a financial investment. Art investment emerged at the intersection of two markets with competing logics (Boltanski & Thévenot, 2006), namely the fine art market and the professional investment market. Characterized by a strong reliance on benchmarks and measures, and later by professional investment fund structures, the field today conforms closely to conventions present in other areas of financial investing. The case provides an excellent context to see the interlinked field and knowledge development, given the demands of transparency and performance evaluation for professional investment, compared with the reality that art is difficult to value and returns on art investments can be hard to quantify.

A focus on the emerging knowledge claims and epistemic culture helps to explain why art has only recently become a relatively accepted investment asset class, even though it has long been acknowledged as a store of value: without appropriate valuation and return measurement techniques, claims about the investment properties of art lacked evidence. We find that a knowledge-based project building up recognizable tools and practices ran parallel to the establishment of new investment ventures. This helped to grow knowledge about the investment properties of art, undergirding knowledge claims, and meeting demands for more information. We show how art was rendered quantifiable, conforming to industry norms about proper practice for selecting and monitoring investments, and thus meeting audience expectations. As in other areas of finance, legitimacy arose from models and tools that replaced “rules of thumb and folklore” (Bernstein, 2007).

The case was developed using historical and ethnographic methods typical of the sociology of knowledge (e.g. Latour, 1987; Latour & Woolgar, [1979] 1986; Mukerji, 2009), but focusing on the wider technical field through a cultural approach (Knorr Cetina, 2007). We provide the findings in a nuanced historical account for clarity, in which our historical data are organized around four stages of development. Our epistemic cultures approach allows us to give a coherent account of the process by which new products and measurement tools co-evolved toward eventual legitimacy, and shows important knowledge developments that would not be visible using organizations as the unit of analysis.

The remainder of this paper is structured as follows. We first make a case for using epistemic cultures in accounting and in the study of field emergence. Next, we discuss our research context, data and methods. Our case then traces the growth of the art investment field over the last half century. The final sections provide a discussion of our main insights and conclusions.

Epistemic Cultures to Examine Technical Field Emergence

Epistemic cultures encompass the practices, tools, and assumptions that help to constitute expert cultures (Knorr Cetina, 1999). The epistemic cultures framework provides a way to examine the production and recognition of knowledge claims and expertise. The theory was developed for

scientific fields and bounded locations, but can equally be applied to industries requiring strong technical expertise (Knorr Cetina, 2007), and is thus eminently applicable to accounting contexts. As an approach rooted in the study of practices, it is also highly compatible with the treatment of accounting as a social and institutional practice (Miller, 1994).

The epistemic cultures lens is thus helpful when looking at the practices underpinning the valuation of different assets. This is useful as prior research has highlighted the role of accounting in the explanation and rationalization of actions and decisions (Amernic, 1985; Ansari & Euske, 1987; Burchell et al., 1980), but there is little empirical work on the connections between such attempts and the emergence of specific valuation practices. Recognition of expertise around new knowledge claims is clearly related to specific accounting practices (e.g. Gendron et al., 2007; Miller, 1994; O'Dwyer, 2011), highlighting the benefits of linking sociology of knowledge approaches to accounting concerns. For example, in the case of auditing, Power (1996) argues that two moves are required: the negotiation of a legitimate and institutionally recognized base of knowledge, together with the creation of environments that will be receptive to this knowledge base. Gendron et al. (2007) point to the construction of supportive networks and processes of fact building as instrumental to the development of standards of "good practices." Particularly useful is work from O'Dwyer et al. (2011) on legitimacy among sustainability assurance practitioners—drawing upon Suchman's (1995) framework of legitimacy taking pragmatic, moral and cognitive forms—in order to typologize the strategies used to garner support with key internal and external audiences. With cognitive legitimacy being the most durable form, actors can potentially undergird new practices by pulling from existing standards that are already accepted in a related area (Suchman, 1995). Thus when examining a new product that requires valuation tools for legitimacy and recognition of these knowledge claims, this research suggests that valuation practices will have to be imported from other contexts or developed in ways that link back to existing standards, along with the development of audiences receptive to this knowledge.

Foregrounding knowledge production and expertise also means the approach is beneficial for understanding new fields and markets, especially for products that undergo technical evaluation

before purchase, where new valuation practices would need to be developed. A sociology of knowledge approach allows us to look at how the development of knowledge and practices interweaves with the growth of fields over time. Organizational research highlights that new products and ventures may need to be recognizable in order to be seen as legitimate (Star & Griesemer, 1989), particularly if audiences are “market-takers” (Pontikes, 2012). Prevailing institutional logics can constrain organizational and individual practices and assumptions (Thornton & Ocasio, 2008), while institutionalized expectations shape organizational forms and market strategies (Friedland & Alford, 1991; Zuckerman, 1999). Similarly, the use of new models and tools can have power and legitimacy implications, as seen in the use of performance indicators and benchmarks in public sector organizations (Shore, 2008). Standards can take the form of “mediating instruments” that serve to coordinate market activities (Miller & O’Leary, 2007), and create pressure to conform to external expectations (Beck & Walgenbach, 2005). We can also see legitimacy issues as actors work to reconcile new standards with prior imaginaries, as seen in Mennicken’s (2008) study of accounting in a large firm in post-Soviet Russia.

Knowledge claims are especially pertinent to the creation and marketing of new financial investment areas, given strong existing expectations among financial market actors about appropriate practices of benchmarking and due diligence. Due to these expectations, the development of new asset classes requires a dual move: not just the development of the products themselves, but also the corresponding development of tools with which to understand these products and measure their performance. The ability to understand and quantify potential returns and risks is often directly related to the success of these novel products. For example, Dhar and Goetzmann (2006) show that uncertainty about statistical properties holds back institutional demand for real estate, and in order to receive venture capital funding, new technologies must be translated into objects of investment (Czarniawska & Mouritsen, 2009, p. 161). More generally, Carruthers and Stinchcombe point out that the liquidity of a market depends upon the “know-ability” of the commodity that is being transacted: the transparency of the economic value and the properties of an asset that allow it to be “taken for granted” (1999, p. 378).

As objects of study, new investment categories are by their very nature problematic for standard quantitative and survey methodologies. The epistemic cultures approach provides us with a workable method to conceptualize this object of study. The theory suggests that scientific and professional fields are centered around a focal knowledge object (Knorr Cetina, 1999, 2001; review in Nerland & Jensen, 2012) with unfolding properties, i.e. properties that evolve over time as new knowledge is generated. We can thus treat new investment categories the same way as we might treat scientific discoveries, with an understanding of properties such as risk and return that deepens over time.

Crucially, epistemic cultures also possess a native concept of experimentation, given the focus on scientific research and knowledge. Prior organizational research has found key issues of cognitive and sociopolitical legitimacy with an industry in its formative years (Aldrich & Fiol, 1994), but tells us less about the role of experimentation and “negative knowledge” (Knorr Cetina, 2007) in this process. For example, studying failed ventures from a knowledge development perspective helps us to see the legacies or “traces” of new knowledge and resources that are left in place after businesses close shop, given that learning can come from ventures that have failed as profitable ventures but broke new ground conceptually (Powell & Sandholtz, 2012). The incorporation of experimentation—with its inherent failure rates—nuances our understanding of how the creation of new knowledge relates to field emergence. For example, if mature fields are “recognizable” sets of institutions and organizations (DiMaggio & Powell, 1983; Maguire et al., 2004, p. 657; n.b. O’Sullivan & O’Dwyer, 2015), an experimental and knowledge-based focus is helpful in showing not only the development of performance evaluation practices, but also organizational field antecedents prior to the emergence of these recognizable institutions. In scientific and technical fields, these can include the networks of collaborators in the same or different locations (Gittelman, 2007; Padgett & Powell, 2012) and the practices and local arrangements that help to organize epistemic communities (Brown & Duguid, 2001), but also “negative knowledge,” meaning “knowledge of the limits of knowing that is gained from the disturbances and distortions, errors and uncertainties of research” (Knorr Cetina, 2007, p. 366).

The creative but uncertain nature of experimentation is relevant in the market for financial products, because we do not necessarily know what will end up being a good investment strategy. Experimentation can also lead to increasing variety in products and strategies, as seen the example of money management practices (Lounsbury & Crumley, 2007) and history of collateralized debt obligations (Tett, 2009).

Finally, thinking about experimentation and failure in the context of the relevant audiences for information (O'Dwyer et al., 2011; Power, 1996) underscores the important connections between perceived legitimacy and actual performance, particularly when it comes to the ability to value and monitor investments. Profit and legitimacy can be considered as independent factors in investment venture success, connecting to prior work that argued that legitimacy can dominate efficiency in organizational survival (Thornton & Ocasio, 2008).

Research Context: Art as an Investment

The attempt to categorize art as a legitimate financial investment brought the traditional art market together with the financial market in order to create a hybrid we call the art investment field. Some contextual knowledge of the features of the art market is necessary to fully understand the developments that are the focus of our case. In 2015, the turnover in the global art market was estimated at \$63.8 billion (McAndrew, 2016). About half of this market volume came from private sales by galleries and auction houses (i.e. private-treaty sales). The opacity of the gallery sector, which is responsible for most of the first-time sales of artworks (i.e. the primary market) and a good proportion of secondary sales, complicates matters for both investors and researchers. As opposed to public auction sales, for which detailed data are available, information on gallery sales is kept private and prices may be adjusted for a given buyer (Plattner, 1996; Velthuis, 2005). This structure, along with the conventions of the traditional art market—a market that historically relied upon thickly embedded normative relations and a clientelist orientation, more like the bazaar economy (Geertz, 1978)—can make investment difficult. While primary market purchases may be the most lucrative, some gallerists resist selling to perceived speculators (Velthuis, 2005; Velthuis & Coslor, 2012).

The art market as a whole has grown substantially over the last few decades. McAndrew (2012) estimates that the total value of art sales more than doubled between the market peak in 1990 (\$27.2 billion) and the next peak in 2007 (\$65.8 billion). Part of the growth in the market can be explained by the increase in price levels over the last half century. Using current practices for measuring the returns of art, Figure 1 shows an art price index, in deflated GBP terms, for the period 1900-2012 based on Goetzmann, Renneboog, and Spaenjers (2011) and Dimson and Spaenjers (2013). The index value in 1900 is put equal to 100, and values are shown against a logarithmic scale. The index implies an annualized (i.e. geometric average) return over the complete period of 2.4%. The graph shows strong price rises since the late 1950s. The figure also shows the timing of transactions that set a new world record price (in nominal GBP) for art at auction, based on Spaenjers et al. (2015). We see many more of these record-breaking transactions in recent decades.

[Insert Figure 1 about here]

The art market continues to be dwarfed by traditional financial markets, but nonetheless represents considerable asset values. About half of the wealthy individuals surveyed by Barclays (2012) have an art collection; on average, art represents 4% of collectors' net worth, or around \$400,000. The reasons for purchasing art are wide-ranging (Belk, 1995), but surveys indicate that financial motivations are not negligible among today's collectors (Barclays, 2012; Belk, 1995; Burton & Jacobsen, 1999).

Buying paintings for profit is not entirely new. In the late eighteenth century, a well-known French art dealer argued that paintings should be viewed as an investment—a view that was shared by some collectors (De Marchi & Van Miegroet, 2014). A century later, steel baron Henry Clay Frick noted that “some paintings were seen to increase sometimes a hundred, thousand fold more rapidly than the certificates of the best-managed joint stock companies” (Chancellor, 2000). In 1904, the French syndicate of investors *Peau de l'Ours* (“Skin of the Bear”) started purchasing artworks, which were sold ten years later for a substantial profit (FitzGerald, 1996). Nevertheless, despite these scattered examples, the first wave of structured investment activity would not emerge until the 1970s (Horowitz, 2011). Moreover, “only recently has it been a consumer product, where before it was an academic product” (art price service interview, 2007).

Data and Methods

An epistemic cultures approach has the potential to contribute to work in accounting both as a theoretical orientation and as a flexible methodology that sensitizes researchers to issues of culture, tools, material practices, local knowledge, ad hoc solutions, and other arrangements that establish and substantiate fields of knowledge. A major work is Knorr Cetina's (1999) study of knowledge cultures in high-energy physics and microbiology, a situated laboratory study that highlighted differences and similarities in scientific fields with respect to actual practice. But the approach has also been applied more widely to professional cultures of knowledge (e.g. Knorr Cetina, 2007; Knorr Cetina & Reichmann, 2015), such as knowledge practices in nursing (Nerland & Jensen, 2012), and even a historical analysis of working practices in building the Canal du Midi in France (Knorr Cetina & Reichmann, 2015; Mukerji, 2009).

This paper uses epistemic cultures with a historical and ethnographic approach, moving beyond the laboratory, as seen in the work above, and in sociology of knowledge more generally (e.g. Latour, 1987; Latour & Woolgar, [1979] 1986). In addition to these methods fitting the study of new knowledge claims in a developing field, another consideration in using qualitative methods is that there is no standard list of organizations from which to sample in studying the development of a new field, much less an easy way to quantitatively trace the knowledge developments in an epistemic culture.

Primary and secondary data from company notes, newspaper and magazine articles, books and academic articles in the field of cultural economics were collected through archival research. These were complemented by data from a larger study on the use of art on a financial investment (Coslor, 2011), which used ethnographic field research methods including participant observation at art world events, and also interviews with key figures from the traditional art world and from the growing art investment field. Table 1 provides a list of types of sources used.

[Insert Table 1 about here]

Our analysis of these data included a focus on crucial historical events, investment ventures, measurement tools, and knowledge developments related to the legitimation of art as an investment since the 1960s. This approach seeks to “follow the object” of art investment over space and time (Czarniawska, 2004) in a coherent manner, that is, the art investment “knowledge object” (Knorr Cetina, 2007). An epistemic cultures lens allows us to systematically focus on the evolving knowledge across different organizations and investment ventures.

We present the findings in a roughly chronological fashion, using a set of four historical stages with similar patterns, often consisting of a period of interest, growth, flourishing, and eventual die-offs (Table 2). For clarity, we first present the findings in the form of a historical narrative, and then review key analytical themes in the discussion. We also would like to point out that this is not a smooth narrative of field development, although it might appear so, given our focus on the art investment knowledge object, which tends to develop in a forward direction.

[Insert Table 2 about here]

Stage 1: Early Interest by Economists and Early Price Indices (1960s)

After the difficult 1930s and 1940s, the art market rebounded strongly during the late 1950s and 1960s, given the post-war economic boom and lifting of currency restrictions, which enabled “free movement of money and art” (Lacey, 1998, p. 145). Moreover, auctioneers like Peter Wilson at Sotheby’s turned auctions, which historically had been attended by art dealers only, into glamorous high-society events where trophy artworks could be publicly “won” (Hook, 2009; Watson, 1992). Coinciding with these developments, both historians and economists started to show interest in art’s investment potential. A handful of books around that time addressed the economic history of the art market. Auctioneer Maurice Rheims (1959, 1961) wrote a history of art collecting entitled *La Vie Étrange des Objets: Histoire de la Curiosité*, while the *Economics of Taste* series of Gerald Reitlinger (1961, 1963, 1970) contained a qualitative discussion of historical developments in the art market, and long, detailed lists of art transactions and appraisals since 1760. Other works, such as former

academic Richard Rush's popular book *Art as an Investment* (1961), explicitly took an investor's perspective.

This increasing attention to the art market and art investment was coupled with a search for measures and metrics. Although books of auction sales prices had been published since at least the 1880s, additional work was required to assemble these data into useful forms that could show overall trends and price movements. The above-mentioned authors made the first efforts to overcome the difficulties in collecting reliable and representative price data, and to aggregate these data in a systematic fashion, though with an appreciation of the bias created by the fact that private gallery prices were not easily captured (Coslor, 2016). The creation of art price indices was a key development in the search for valuation tools that could be used for art and incorporated into broader organizational and calculative practices. In financial markets, an index is a statistical indicator—often turned into a graph—that represents trends in the monetary value of an asset (or a basket of assets). Indices frequently serve as benchmarks against which the financial performance of individual investments can be evaluated. Indices are notoriously difficult to construct for tangible assets like artworks or houses, due to the heterogeneity of these goods. (The now-famous Case-Shiller house price indices were only developed in the 1980s.) Rheims presented charts of rudimentary indices showing long-term average price trends for a range of artists in his book, though with minimal adjustments for quality differences between an artist's works; these graphs were not included in the English translation (Rheims, 1961). Rush's book featured charted indices for different artistic genres using a weighted formula which he does not reveal in the book. One chart, shown in Figure 2, also included stocks, emphasizing that paintings and financial investments could be directly compared (Rush, 1961, p. 385).

[Insert Figure 2 about here]

Another prominent index appeared on the pages of a newspaper. In 1967, London's *Sunday Times* began publishing the Times-Sotheby Index. Created by statistician Geraldine Keen, and based on the estimated changes in value of baskets of works deemed to be of equal intrinsic value, the index was a quantitative foundation for aggregating art prices into overall market trends. Critics questioned whether the index itself was driving speculation (Hensher, 2006), and the methodology was not

without disadvantages. Yet, the Times-Sotheby Index was often charted—along with established indices for other types of investments—in press articles discussing the art market.

Stage 2: Early Institutional Investors and Growing Information Needs (1970s to 1980s)

The boom in art prices in the 1960s led to increased attention by the popular press to the topic of art investment (Horowitz, 2011) and to a growing belief, at least by “the small, private investor,” that art was an excellent investment (“Money...”, 1970). For institutional investors, the interest shown by academics and practitioners of the previous stage was part of the foundation for understanding art as an investment. The entry of pension funds and other institutional investors into the art market stands out in this historical narrative as a signal of development, given that such players are not motivated by artistic consumption or other non-monetary factors, but take the role of a pure investor. However, with these investors also came demands for more market information and for tools that could track the profitability of investments.

Early Institutional Investors

The British Rail Pension Fund (BRPF) was the first large institutional investor that bought art for investment. It began buying art and antiques in 1974, in partnership with Sotheby’s. The Fund turned to art for “further diversification of the overall portfolio,” and “reasonable prospects for long term capital appreciation, at least equal to inflation” (Adeane, 2003). Hedging against inflation was difficult at the time, because index-linked securities did not exist and “there weren’t the options of commodities or hedge funds or international bonds” (Adeane interview, 2008). Crucially, the decision to invest in art was informed by the quantitative data and research produced in Stage 1: “[BRPF executive] Lewin used the figures in Gerald Reitlinger’s *The Economics of Taste* but excluded exceptional prices... Despite this he concluded that most categories of ‘traded art’ has proved sound investments in the long term” (Watson, 1992, p. 354). The collection eventually included over 2,400 items, including paintings, books and manuscripts, medieval art and sculpture, and Chinese ceramics (Baram, 2005). Museum-quality works were either put in storage or loaned out to a number of British museums (Van den Bosch, 2005, p. 24). Although BRPF only allocated some 2% of its overall funds

to art, this investment earned the fund a reputation as “one of Europe’s greatest art patrons since the Medici” (Blake, 2003).

Other dedicated art investors emerged in the late 1960s and early 1970s. Key examples include Artemis, Modarco, and the Sovereign American Arts Corporation (Horowitz, 2011, p. 153). These new ventures were often denoted as “funds”, but they mainly operated as trading syndicates, with relatively short holding periods—not unlike dealers, but with a more explicit profit-seeking business model. For example, Luxembourg-based Artemis likened itself to an “art investment banking firm” (Horowitz, 2011, p. 153), and planned to buy high-quality works, lend them to museums, and then sell them (Watson, 1992, p. 354). Modarco—set up by three European banks in 1970—was registered in Panama, where it did not have to pay corporate taxes, with offices in London and Geneva. When the Sovereign American Arts Corporation went public in 1970, its president said in an interview that the company’s philosophy is “to buy works so advantageously—that is cheaply enough—that they can be sold immediately” (Taylor, 1970); the prospectus did acknowledge one investment risk was that most managers were not art experts.

Growing Information Needs

Acquisitions by funds and firms stimulated the incipient epistemic community around art investment, with money available for due diligence, art market research, and related efforts. For example, once British Rail became involved in the art market, they required tools, measures, and benchmarks to understand and quantify their investments, highlighting the necessity of knowledge for the development of the field. To meet this need, a statistician, Jeremy Eckstein, was hired by Sotheby’s in 1979 to provide art market information to British Rail and to track their investment. Eckstein noted that even after his responsibility towards the Fund wound down, there were many others who were interested in art as an investment and the economics of the art market: “[how it worked], looking at it in terms of supply and demand, the demographics of the buyers and sellers, and quantifying the returns and prices” (Eckstein interview, 2009).

Art also began to receive more scrutiny from academic financial economists in this period (e.g. Anderson, 1974; Stein, 1973), and interest shown by the founding of the *Journal of Cultural*

Economics in 1973 and first conference in 1979. Moreover, valuation tools and practices diffused, and similar techniques were applied to other collectibles. For example, in the spirit of Rush's *Art as an Investment* (1961), investment analyst Robin Duthy's books *Alternative Investment* (1978) and *The Successful Investor* (1986) contained price indices not only for art, but also for wine, stamps, and other categories.

Richard Rush turned his expertise to other areas as the editor of *The Art Investment Report* in the 1970s. The report was advertised to readers of *The Burlington Magazine* ("Front....," 1973), an art-historical magazine, as "an exciting, new bi-weekly newsletter for art collectors, dealers & investors, edited by Richard H. Rush, author of 'Art as an Investment'. Gives you the vital facts you need to buy and sell art profitably: market trends, tax questions, undervalued schools & artists, selling at auctions, where to get best buys, etc." The newsletter thus leveraged the popularity of Rush's book and highlighted a key concern: how to trade art profitably, through trend analysis and other information. An undertone in this ad is the pitch to newcomers, who needed to learn how to properly buy and sell. If prospective art buyers previously had to "appeal to authority and trust [their] dealer" (Plattner, 1996, p. 22) to gauge whether a certain purchase was reasonable, these indices provided an outside option to evaluate prices and trends.

Subsequent Market Developments and Heritage

Fund Closures. As the 1970s wore on, there was a die-off of investment ventures, including the Sovereign American Arts Corporation (Horowitz, 2011, p. 153). Artemis very quickly transitioned from private art-investment company into a publicly traded, more traditional art dealership. Modarco merged with art gallery Knoedler in 1977 after suffering financial losses. At the time of the merger, it kept about 300 valuable paintings in Swiss vaults; these works had been bought "with the idea that they would be sold to persons who collect art as an investment, including Mideast clients" (Star News, 1977). In 1985, the *New York Times* wrote that "the mutual fund approach to art... has no survivors" (quoted in Horowitz, 2011, p. 153).

British Rail Pension Fund. British Rail also decided to halt art buying in 1979. Controversy had arisen once the British press discovered the fund "speculated" with pensioners' money. Commentators

argued that art investment was risky and associated with high costs. There were also moral concerns. An editorial in *The Economist* (“State...”, 1977) argued that “the railmen’s pension fund should not be allowed to sink into state-capitalist barbarism whereby major works of art are buried in cellars for the delectation of rats,” and foresaw outrage if “the heavily subsidised pension fund of a nationalised industry tries to sell national treasures” abroad. Some also worried that the fund was pushing up prices for museums and art lovers. These criticisms illustrate that, although individuals might be able to buy art for both aesthetics and profits, it was not yet a legitimate strategy for institutional investors. Another issue for the fund, however, was the struggle to assess and value the art portfolio, a concern when John Morgan became fund manager in the late 1970s: “It was difficult enough to value—it is still on the books at cost price. Insurance values provide only a rough guide and the very disadvantages—notably the inability to find out comparable prices on a regular basis—that mitigated against buying works of art in the first place also prevented any proper valuation” (Faith, 1985, p. 214). Although British Rail divested its art collection for these reasons decades ago—profiting handsomely from the late 1980s market boom—the example set by the fund continues to inspire. It was mentioned by several representatives from the art investment community in the interview data used in this paper (e.g. art price service, 2007) and in Sotheby’s dissertations. Press articles and studies on art investment also frequently refer to the fund.

Times-Sotheby Index. The Times-Sotheby Index was also cancelled in 1971, amid rumors as to the reasons. One suggested that it was due to the changed shape of the index: perhaps Sotheby’s chairman Peter Wilson did not want to associate the firm with an index lacking strong growth (see, e.g., Hayden-Guest, 1996). A competing story was that it was a retaliatory move against index creator Geraldine Keen’s article on the auction houses’ deceptive treatment of lots failing to reach the consignor’s reserve price (Lacey, 1998, p. 161). Whatever the reason, we can see that although auction houses are potential sources of new and useful knowledge tools, such tools are also vulnerable to failure due to their makers’ conflicts of interest.

Stage 3: Intensification in Research and New Ventures and Funds (1980s to early 1990s)

With the cancellation of the Times-Sotheby Index and realignments at the British Rail Pension Fund, it might seem that art investment was an area that had lost interest. Yet, from the ashes rose a new stage, characterized by an intensification of research and by new ventures. These developments ran in parallel to an unprecedented boom in the art market in the late 1980s, which was “was fueled by the flow of new money on Wall Street, the strong Japanese yen and aggressive marketing by the auction houses” (Elsworth, 1990).

Art Market Research by Academics and Firms

The third stage of interest in the art market brought with it an increasing focus on the art market among cultural economists. Drawing primarily on the dataset compiled by Reitlinger in *The Economics of Taste*, this research (e.g. Baumol, 1986; Frey & Eichenberger, 1995; Goetzmann, 1993) quantified potential profits from investment in art, particularly as compared to other types of financial assets. More advanced index construction techniques were applied, often following innovations in real estate economics. The goal of these techniques was to estimate periodic returns using transaction data, with better controls for variation in quality between transacted works.

Academic Debates around Investment in Art. Academic debates during this time highlight the active development of knowledge about the properties of art as an investment. There were claims that art investments could realize major profits, but such claims were contested by detractors, who pointed out that art historically yielded low returns on average (Baumol, 1986; Frey & Pommerehne, 1989), while risks were “extraordinary” (Goetzmann, 1993) and transaction costs high. Following along the idea of portfolio diversification, which had become more important since the 1970s, others argued that art could become an alternative investment or a hedge. For example, Bryan (1985) pointed out that art, as a durable commodity, helps to protect owners from unexpected inflation. Coffman (1991) suggested that there were still “bargains” to be found, due to information lagging in art markets outside of the major centers. While lacking a clear consensus, we do see efforts to define and calculate art’s investment properties.

Sotheby Index. Although the Times-Sotheby price index had been cancelled, once interest in art investment picked up again, statistician Jeremy Eckstein was tapped to put together a renewed art market index, the Sotheby Index. Experts of the auction house would periodically estimate the resale value of a fixed basket of about thirty works for a dozen categories of art and collectibles. The index was even more aligned with financial investment motives, with publication in financial newspapers including *Barron's* and *Fortune* (e.g. Figure 3). One Sotheby's executive even co-authored a portfolio allocation study using the index and concluded that art "can play a major role in portfolio diversification" (Tucker et al., 1995, p. 20).

[Insert Figure 3 about here]

Art Price Services. Building on earlier ways of providing art market information, such as the longstanding annual guides to auction prices, entrepreneurs started to provide price and other information about art. The early information entrepreneurs include some current major players: Art Sales Index, artnet, and Artprice. The story of artnet's development is informative. Amy King, a former Vice President, noted that the company came into being due to the frustration of its founders with the existing art price information. The company's key innovation was to upstage art price books through the introduction of a subscription-based fax service, which allowed the firm to provide frequent updates. With the development of the internet, the service evolved to include imaging and full cataloging (King interview, 2009). In interviews, Hans Neuendorf, one of artnet's founders, explicitly mentioned the desire to recreate structures present in other markets: "why should perfectly normal standard rules and use of information in any market—be it real estate or be it the stock exchange or be it manufacturing—why should that not apply for the art market?" (quoted in Vernissage.tv, 2006).

Funds and Ventures

New funds and ventures came online during this stage in the 1980s and early 1990s, and with them, experiments with new structures for investment as well as other mergers of art and finance.

Art Banking Services. One new development was the growth of art banking. Sotheby's started offering credit to bidders in the mid-1980s, using auctionable items as collateral. Lacey (1998, p. 251) writes how controversial this move was at the time: "Dealers [were] outraged, and Christie's went so far as to deliver a rebuke in their annual report for 1985... [But] Christie's clients soon discovered that if they inquired about credit in advance, the auction house was happy to put them directly in touch with an agent who would lend on terms that were competitive with Sotheby's." Banks also started offering art-related services to wealthy clients. The practice of approaching one's bank for art collection advice indicates the mixing of monetary, aesthetic, and other motives at the time. Citibank advertised its private banking services by offering access to the company's Art Advisory Service, "which is uniquely positioned to help you navigate the world of art... and even provide liquidity through the collateralization of your art holdings" (Citibank, 1995, p. 38).

Dedicated Art Funds. By the end of the art market boom in the late 1980s, new art investment ventures were introduced. For example, in 1989 Chase Manhattan Bank announced its intention to collect \$300 million in investments from pension funds for a closed-end art fund. Press articles on the new venture referred to both the returns as measured by the Sotheby Index, and to the experience of British Rail (e.g. Wallace, 1989). Around the same time Banque Nationale de Paris (BNP) devoted some \$22 million to the creation of two art funds. What differentiated these new funds from previous investment structures is that they did not buy art on their own behalf, but sold securitized shares in an art portfolio to their investors. For example, about 400 investors put money in the BNP funds; the minimum investment was over \$40,000 (Benhamou-Huet, 1998). Such a pooled investment structure was not entirely new in itself: similar structures exist in other investment areas (e.g. hedge funds), and the historical example of Peau de l'Ours was not too dissimilar. What was new was that shares were not sold to a few individuals, but to a large group of institutional investors and high-net-worth individuals. Funds like these were conceived in a time when alternative investments were growing in popularity. As with other alternative investments, the sales pitch was that dedicated funds allowed buyers to gain (a diversified) exposure to the art market with all its complexity, without needing detailed knowledge to profit from it. Securitization also avoided storage and security problems for the

end investors. For example, the British Rail Pension Fund faced an incident when a T'ang horse sculpture was stolen on its way to auction, though later recovered—not a problem the fund typically faced (Adeane interview, 2008).

Market Decline and Subsequent Developments

In the early 1990s art prices dropped dramatically, and Sotheby's itself saw a major turnover decline from \$2.9 billion in 1989, to just over one third that amount by 1990 (Lacey, 1998, p. 271). Despite the advantages of art investment in a securitized structure, the popularity of such ventures decreased as the art market slid downwards. Chase Manhattan Bank's fund failed to gain the necessary capital (Horowitz, 2011, pp. 155-156), while the art collection of BNP's funds was sold at a substantial loss in November 1998.

The early 1990s also saw the cancellation of the Sotheby Index. According to Eckstein, reasons for the discontinuation of the index again included awareness of conflicts of interest with an auction house creating its own index, and the fact that many people inside Sotheby's felt the auction house could not be associated with a declining index. The creators of the index also started to entertain concerns about validity and representativeness (Eckstein interview, 2009). Like its predecessor, the index was based on the appraised value of a basket of works; Shiller (1993) commented that this was problematic as "change in the index must reflect a lot of guess work." This reflects the growing academic research about how to properly estimate an art price index having implications for actors in the field.

Stage 4: Formalization and Professional Services (1990s to present)

After the 1990s art market slump, a new wave of wealth creation and globalization provides the background for growing art market professionalization, and the emergence of new supporting industries, such as art advisory services and art business education programs, at the start of the Twenty-First century. Academic and industry research into the area also developed further, slowly at first and then more quickly. A related movement in changing perceptions of art investment and promotional activities is also seen.

Growing Art Price Information and Market Research

Academic Research on Art as an Investment. A new wave of academic literature emerged around the turn of the century, beginning with Mei and Moses (2002). Based on a new dataset of sales at Sotheby's and Christie's, they constructed a price index for the period 1875-2000. Reporting returns that compared favorably to those of bonds, (while largely independent from stock market swings), the authors concluded that art may play a role in portfolio diversification. The findings of Mei and Moses, who have commercialized their indices, are often quoted by both journalists and by art market players (e.g. Deloitte & ArtTactic, 2013, p. 47). In recent years, the growth in available art price information and increases in computing power have helped to push forward academic research, with results that often differ from—or at least qualify—earlier conclusions. For example, based on a database of over one million transactions from an online art price service, Renneboog and Spaenjers (2013) pointed out that returns realized at the top auction houses are not representative for the overall art market. Similarly, evaluating the true benefits of art investments is complicated by the potential sample selection bias in observed auction sales and thus prices (Korteweg et al., 2016). Even the question of whether art is useful as a portfolio diversifier has been revisited. For example, Hiraki et al. (2009) and Goetzmann et al. (2011) reported that art prices covary substantially with equity returns and wealth creation.

Database Technology and Price Index Developments. A key innovation by art price services has been to change the way that their data is used and interpreted. Existing art price providers have consolidated and expanded, catalyzed by the internet revolution and improvements in computing technology. Today they provide aggregated price data from worldwide auction sales, along with additional art market information and index tools, usually via online subscription services. Importantly, the growing models and tools display data in recognizable and familiar ways. As one interviewee put it, “buyers are inclined to look at the market in a similar way to markets they're already in... art as an asset can start to be on the same level as something like real estate” (art price service interview, 2007). London-based Art Market Research illustrates the abundance of art price data and the ability to (re)package them in many forms. The company provides 500 different art price

indices, formatted in ways that make them easy to use for financial investors and analysts. For some time, Art Market Research even partnered with Bloomberg to offer more than 20 indices for different art and collectible sectors via Bloomberg terminals—see Figure 4 for an example. This allowed financial analysts and investors to examine art price data in their normal trading interface, with the ability to plot comparisons with other types of investments.

[Insert Figure 4 about here]

Art Market Analysts. As the art financialization project progressed, entrepreneurs found a market niche in the provision of advisory and professional services. These include Seymours, providing art collection advice, valuation, and research services; ArtTactic, offering bespoke research and art market sentiment indices; and Fine Art Wealth Management, a firm providing information needed by large investors to exercise due diligence in this market, as well as best practice advice for art funds and investment. These services merge specialized knowledge about the traditional art market with practices that would be considered legitimate by financial market investors.

Changing Perceptions and Institutional Recognition

Coming into the present, we see greater acceptance of the concept of art as an investment. The growing findings helped to provide proof of concept to institutional investors, according to Randall Willette of Fine Art Wealth Management, because at the time he founded the firm in the early 2000s, “there wasn’t a lot of research in terms of the correlation benefits and long-term performance benefits as well, so it wasn’t really up until some of the academic research that has been produced came more to the forefront that more and more investment managers, asset managers, were starting to sort of recognize art as an alternative asset class” (Willette interview). Similarly, Horowitz (2011) argues that recent research by academic economists on art’s properties as an asset “had the watershed ability to open the art market to a world of modern, global finance from which it had long been distinct” (p. 159).

Although mainly a niche investment, today art is listed in investment industry publications like the Capgemini World Wealth Report (2012), where it is categorized as a type of “passion investment.” In

a 2009 survey at the London Art Fair, 71% of respondents said art was or could be a type of investment, though many qualified their response, saying that investment value was only part of the attraction (Coslor, 2011, p. 5). In a larger survey of 19 private banks, 140 international art professionals and 48 international collectors, Deloitte and ArtTactic found that over half of the art advisors and collectors who responded saw art as an asset class (2011, pp. 8, 52). Finally, TEFAF, one of the world's most important art fairs, ends press releases saying that it "shares its view of art as more than an asset with its principal sponsor, AXA Art" (TEFAF, 2013), which mainly serves to highlight that the fair organizers believe art *is* an asset.

New Organizational Structures for Art Investment

Former Sotheby's researcher Jeremy Eckstein noted that "the issue is no longer whether or not art is a viable, attractive asset class: that can now be taken as a given. The only substantive issue now is the most effective means of structuring efficient vehicles for investing in art" (2008, p. 74). Eckstein's point underscores another evolving and important form of knowledge: practical knowledge about how to structure the investment and to profit from it. As noted in news articles, a few dozen art investment funds popped up in the late 1990s and early 2000s, with structures similar to private equity funds. Horowitz (2011) provides an overview of more than 30 efforts to launch funds between 2002 and 2008; many of these used private equity structures. This structure typically involves a management team, whose compensation consists of fixed and performance-based components. With a fund horizon of 8-10 years, fund shares are sold to qualified individual and institutional investors. The typical long-term holding commitment, or "lock-up period", on the part of investors connects to the illiquidity of the underlying assets. Management teams often rely on both internal and external art world experts when making decisions, a move that partially alleviates investor concerns about the inherent lack of transparency (interview data). Strong reliance on market insiders also links to the growing realization that even if investment performance for art as an asset class is actually lower than was previously believed, there probably exist arbitrage opportunities which well-informed and well-connected players can exploit, such as the ability to treat art as similar to distressed assets. Similarly, funds may also "develop" assets in a hands-on fashion. In this unregulated market, it would not be illegal for funds to

try to include work from the portfolio in exhibitions—as was also seen with British Rail’s collection—a move that would typically increase the artwork’s monetary value.

The significance of this investment structure is not only that it fits the known properties of art investment but that it provides another familiar structured finance “container”. Investments can thus be compared against other types of investments at the due diligence stage, given a fund manager who can be examined for her or his track record. Building on informational developments, these organizations can also benchmark against a given index. This was the case, for example, for Castlestone Management’s Post-War fund, which was benchmarked against the Art Market Research Post-War Art 50 index.

Experimentation with Other Investment Formats. Additional experiments and ventures can also be seen in this space, for example art exchanges, which sell fractional shares of paintings. This provides a different form of securitization from funds: “When the owner of an artwork decides to sell, he gets in touch with a bank and Splitart, which then go through the process of securitizing it... Then trading begins, like any other financial exchange” (Ferro, 2012). We continue to see smaller clubs of friends and clients investing in art. Often set up by art dealers seeking investors from their existing pool of friends and clients, informal clubs such as the Switzerland-based ArtVest are able to avoid certain US and UK financial regulations (see Adam & Mason, 2005).

Industry, Field, and Market Developments

In addition to art price services, analysts, and new organizational forms, we also see various developments in the professional services and industry infrastructure, both institutional and technical (Star, 1999).

Art Loans and Finance. Various art-related financial services expand the capabilities seen in earlier phases. For example, the firm Fine Art Capital was available to lend “to individuals, art dealers, trusts & estates, and museums seeking to finance new acquisitions and borrow against an existing collection of art and antiques” (Fine Art Capital, 2007). Art Finance Partners, based in New York, provides “fast, flexible and innovative credit solutions to the owners of unconventional assets” (Art Finance Partners, n.d.). Actors in this area make it explicit that they consider art a financial asset. Ian Peck of New

York's Art Capital Group noted in 2006 that "private banking clients' assets in the world are about \$7 trillion. The banks estimate that about 15 per cent of those assets are comprised of artworks... (meaning) about a trillion dollars' worth of art that can be lent against" (quoted in Dizard, 2006).

Education Programs and Industry Conferences. One of the major ways that knowledge about the art market and art investing has been diffused is through education programs. Christie's Education and Sotheby's Institute of Art offer professional master's degrees and certificate programs. In 2014, the Van Gogh Museum offered a master class on "art finance" in China, in collaboration with a Dutch business school. There has also been an explosion in industry forums, conferences, and other events to support the industry. The conferences range from semi-academic events such as the London Business School's Art Investment Conference to fair-based offerings. Industry groups include the Art Fund Association (ARTFA).

Trade Reports. We also see the emergence of various reports on the art investment field. Deloitte and ArtTactic have published a number of *Art & Finance* reports since 2011, discussing issues including art investment ventures, art-backed lending, art price indexes, and analytical measures of art market sentiment. Barclays Wealth and Investment Management published a report in 2012 on the (emotional versus financial) motivations to hold art and other collectibles. The *World Wealth Reports* of Capgemini and RBC Wealth Management and the *Wealth Reports* of real estate consultancy Knight Frank include information on the collectible holdings of high-net-worth individuals and the returns to "luxury investments". Such reports are often covered extensively in the financial press.

Global Financial Crisis, Subsequent Developments and Heritage

The most recent financial crisis began with a credit crunch that dried up liquidity (Murphy, 2009), which naturally reduced the flow of money into new ventures and made trading difficult for existing funds. For example, a three-year closed-end fund launched by Osian Art in 2006 faced difficulties in 2009 when its assets were not selling. According to the chief advisor, "the art would not sell at any price... The cash liquidity just did not exist even at a junk value discount" (quoted in MoneyLife Digital Team, 2011). Failures in the art fund sector resulted in the closure of some funds, with a retreat to more modest goals for others.

But there were already failures prior to the financial crisis—many of the planned funds listed by Horowitz (2011) never got off the ground—and were explained in different ways by insiders. “Most funds just don’t have the kind of track record necessary to get institutional investors. There are a lot of ‘friends and family funds’... like a line of capital with one art dealer at the helm. But they can’t get the institutional investors because they have too many conflicts of interest” (art fund interview, 2007). Spencer Ewen, managing director of art advisory service Seymours, pointed out that “it is a struggle to make the concept fit with financial institutions... While I believe that art funds are a good thing, results are still a long way away, and I am not sure that the big, structured vehicles are the best solution. Smaller, niche funds may be a better solution” (quoted in Adam & Mason, 2005). Other problems occurred when financial professionals tried to start a fund without sufficient knowledge or connection to the art market, problematic given the high degree of insider knowledge still required (Velthuis & Coslor, 2012). This also relates to a more general issue holding back field growth, namely that the relative lack of transparency in the art market is still seen as problematic for some investors. “Yes. It’s also been historically one of the criticisms of the art market,” that it has been “very much of an insider’s market” (Willette interview, 2009).

A notable failure was that of the fund-of-funds proposed by ABN-AMRO, which closed only two years after launch (Adam & Mason, 2005). According to an art fund representative, there were too few up-and-running funds at the time, making the failure unsurprising at this stage: “people are trying to speed the market, with things like art derivatives, like this fund of funds of ABN, but this was way too soon, possibly 20 years too soon to recommend this” (art fund interview, 2007).

Discussion

Our case study leads to three main insights. First, performance measurement, valuation needs and other established practices constrain entrepreneurship in areas where products face technical evaluation, indicating the relationship between the growing knowledge of product properties and field development. The relationship is complicated, however, with push-pull interactions of new knowledge driving new ventures as well as the reverse. Secondly, we note the important role of

multiple actors, experimentation and failures that nonetheless move the field forward. The process by which the art investment field grew was often one of experimentation, in which useful “negative knowledge” (Knorr Cetina, 2007) could be produced. This, third, allows us to typologize investment venture failures by distinguishing legitimacy and profitability as different factors, linking to the issue of receptive audiences and environments.

Knowledge Developments, Legitimacy, and Technical Field Emergence

Our findings suggest that when products are evaluated before purchase according to technical measures, a nuanced understanding of their properties is necessary, which sometimes requires the creation of new evaluation practices, as well as the development of audiences receptive to these new knowledge claims. By increasing the knowledge, tools and valuation practices to understand these products, pre-existing logics and expectations can be met (Gendron et al., 2007; Mennicken, 2008; O’Dwyer, 2011; O’Dwyer et al., 2011; Power, 1996).

Over time art was rendered quantifiable, conforming to industry norms about proper practice for selecting and monitoring investments. A key tool for this was art price index development, which allowed the aggregation of auction data into overall trends that could be tracked over time. Importantly, indices were able to be incorporated into broader organizational and calculative practices, from the earlier Times-Sotheby Index (Stage 1) to the typical inclusion of an index in Deloitte’s art market reports (Stage 4).

If we treat art investment (i.e. the asset category) as the knowledge object, we see the deepening and unfolding of the properties of this object throughout our narrative (e.g. volatility, correlations, liquidity). Art was once thought to promise extraordinary returns, with stories of fabulous profits, as illustrated by Henry Clay Frick’s thoughts (Stage 1). But historical returns needed to be quantified, and properties such as risk and volatility needed to be investigated for professional investments to find these knowledge claims credible, as seen with the example of British Rail’s investments (Stage 2). In the early days, this was difficult to do, because of the lack of data and calculative abilities. As tools were developed to measure these properties, we see a deepening understanding of the investment characteristics of art, making art recognizable to financial market audiences, with help from academic

research. Tools such as art price indexes facilitated comparison with other asset types, and allowed for the study of potential correlations with other investments. Building on these developments, ongoing research is developing a more nuanced understanding of, for example, the specific properties of different types of art and the optimal levels of art in a diversified portfolio. These developments highlight the continually unfolding nature of knowledge objects as well as the excellent fit of this theoretical lens to our case.

These tools are also important because given existing expectations, investments will face legitimacy problems as long as they lack monitoring and evaluation practices. Once developed, different measures could be used by various investment ventures, as in Castlestone's use of the AMR Post-War 50 as a valuation benchmark (Stage 4). The use of these valuation tools allowed the properties of art investments to be compared to other types of investments, which was expected by financial investors. It is also interesting to see the tools in the art investment field being linked to evaluation practices for other assets. For example, index construction is borrowed from work on real estate, while Keen points to her own research as "this Dow Jones index of the art world" (quoted in Hayden-Guest, 1996). Aside from it being faster to modify existing techniques than to start from scratch, Suchman (1995) tells us that cognitive legitimacy may be achieved by appropriating a set of existing standards from a related area, as is also seen in the case of sustainability assurance presented by O'Dwyer et al. (2011). Moreover, the developing knowledge of investment properties was essential for building up legitimacy in this area given that a different set of investment properties for art would inform different types of investment structures, along financial market templates. This is seen in the gradual evolution from direct investment toward securitized funds with longer lock-up periods—mirroring funds in illiquid financial asset categories such as private equity. The operationalization into different structures, informed by unfolding properties of the knowledge object, shows the importance of the knowledge object for investment legitimization.

The case also highlights the need for conformity to other key financial market practices and standards, such as the avoidance of conflicts of interest, seen with the move away from Sotheby's providing

market information and toward external information providers. These developing understandings and practices are integral to the development of the field and formation of institutions.

Importantly, we see a clear pattern of the relationship between knowledge and field development as complicated by both push and pull factors. Sometimes new knowledge “pushes” the field forward, but at other times market conditions or interest spur research and entrepreneurship, i.e. “pull” the development of knowledge.

The Many Contributors to Knowledge: Actors, Experimentation, and Beyond

While adoption of valuation devices and co-constitution by investment bodies are integral to field development, as our evidence shows, there are quite a few actors at work over and above art investment ventures. This highlights a major benefit of an epistemic cultures approach, which is focused on knowledge, tools and practices, and enables us to see the many different actors and developments that happen around the central knowledge object (art as an investment). These other actors include academics in finance and economics, academics turned practitioner (Rush, Mei and Moses), auction houses (Sotheby’s, Christie’s), art information providers (artnet), consultants, certain art gallerists and others, noted throughout the data.

Our evidence focuses on two major forms of knowledge: (1) properties of art as an investment and valuation practices, and (2) practical knowledge about how to structure investment ventures to profit. Knowledge of art’s investment properties—and of appropriate valuation and performance measurement tools—is developed within organizations (BRPF, Sotheby’s), with related developments in academic research seen in the growing publications. Valuation tools evolve: Bloomberg’s art indices could be reinstated, or methods revamped in the way the Times-Sotheby Index informs the later Sotheby Index. Individuals in the field such as Jeremy Eckstein also carried with them the knowledge they gained in prior efforts. In contrast, unlike the knowledge properties of art as an investment, which tend to unfold and accrue over time in a forward trajectory, we see different investment structures coexisting in the same time period, with experimentation around venture structure. Our data shows how some similar investment structures continued over time (e.g. art investment syndicates), as well as a variety of new ways to operationalize art investment (e.g. the

private equity model). Some structures were later replicated, others proved fleeting, showing entrepreneurial experimentation around investment forms.

The epistemic cultures approach thus highlights the benefits of experimentation: just as an experiment in high-energy physics can fail because of misspecification, art investment fund failures can be looked at as experiments to develop a workable structure and concept, developing through negative knowledge (Knorr Cetina, 2007), in addition to the noted concerns about matching the evolving knowledge of investment properties. For example, despite the failure to launch of the ABN-AMRO “fund of funds,” a venture which interviewees thought was premature at the time, the planning of such a venture shows a conceptual development about what might be possible in terms of the asset properties of art, even if it was not yet sustainable in the market. Moreover, the British Rail Pension Fund has remained a key example for many later investment efforts even though the Fund itself disposed of the art holdings. This shows how various efforts leave “traces” that can be picked up by later actors. As the data shows, each of our historical stages contains a flourishing of activity, characterized by new firms and models, followed by cancellations and die-offs. This iterative growth model of field development highlights the way that experiments, despite success or failure, help to support further developments, a pattern recognized by industry members. For example, according to Philip Hoffman of London’s Fine Art Fund, “there’s a learning curve, just like (real-estate investment trusts) were 20 years ago... The first property fund had zero subscriptions, the fourth one was 200 percent oversubscribed” (quoted in Baram, 2005).

Venture Legitimacy, Profitability and Field Emergence

A key development is the creation of receptive environments and audiences (Power, 1996; Suchman, 1995) who can accept and recognize new expertise. Much like the case of government performance and sustainability auditing (Gendron et al., 2007; O’Dwyer, 2011; O’Dwyer et al., 2011), there are clear, continuing expectations for valuation and monitoring of new asset categories in financial markets that shape whether or not these new opportunities will be seen as legitimate. This consideration of audiences and environments for expertise provides nuance to the understanding of why investment ventures fail, as we found that profits and perceived legitimacy were distinct factors,

allowing the creation of a typology that differentiates investment ventures, as shown in Table 3. Splitting profits and legitimacy demonstrates one clear way in which durable expectations related to valuation and performance measurement constrain entrepreneurship in areas where products are subject to due diligence and evaluation of expected properties.

[Insert Table 3 about here]

Over time we see the diffusion of knowledge through conferences and education programs, and the rise of new institutions such as consultants providing best practices, which also links to Power's (1996) points about the creation of receptive environments. We also find other markers of field emergence and establishment showing the creation of receptive environments and audiences, with markers of legitimacy including recognized investment funds, industry associations (e.g. ARTFA), discussion of art in general investment reports, development of art investment professional services and other indicators. But we also see indicators of knowledge developments, including recognized valuation practices, art fund "best practices," academic publications and other indicators of the growing knowledge community, demonstrating the benefits of an epistemic cultures approach to examining new investment areas.

Conclusion

In this paper, we have provided a historical narrative to understand the interrelated stories of the operationalization of art into an investment category and investment ventures on the one hand, and the development of underlying knowledge and tools to analyze these investments on the other hand. We have argued that the growth of art investment knowledge—technical knowledge about investment characteristics and valuation tools, plus practical knowledge about how to structure investment—was a necessary condition for the development of the art investment field, because it favorably met the institutional expectations of financial investors, adding to the prior interpretive ability, market history or "educated gut" of traditional art market experts. This suggests insights for theory, future research and practitioners.

Our case may help to illuminate the underlying processes seen in the development of other knowledge-based markets, particularly those at the intersection of two different fields with different sets of expectations similar to firms changing to fit new standards (Mennicken, 2008), or the way that standards of practice develop through processes involving local experiments by practitioners and collective processes of validation (Gendron et al., 2007). Studying new investments thus enables empirical insight into how specific valuation practices become attached to new asset areas, nuancing links between performance measurement and organizational success. This is especially useful to see the development of knowledge over time in the process of field growth, where publications and even failed ventures leave “traces” available to later actors. The epistemic culture approach enabled us to treat the different moving parts with methodological consistency and also allowed us to see the evolution of knowledge objects through experimentation and negative knowledge. Its application in accounting holds promise for further methodological and theoretical innovation. That might include future research to examine key patterns in epistemic evolution, for example, whether certain kinds of organization that are more likely to produce certain kinds of knowledge. Given the focus on tools, practices and shared understandings, the framework provides a lens to study precursors to a field and microstructural issues, complementing existing approaches, such as those used for organizational fields, for example, work on recombinant networks and social relationships (Padgett & Powell, 2012).

One insight for practitioners is that by its very nature, art is unlikely to become a completely mainstream investment. Art is an illiquid, opaque asset that pays no monetary dividends but comes with high storage, insurance, and transaction costs, and the size of the art market is small compared to that of financial markets. Moreover, insiders can exploit their superior information, at the expense of outsiders. Yet, despite the natural limits of the market, as the tools and knowledge about artwork have been developed, and successful efforts promoted, we have seen a reluctant acceptance of artwork as a legitimate investment area. There are continuing questions from institutional investors about the state of knowledge about art investment and art investment funds, but fewer declarations that art is never an acceptable investment category.

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Figure 1. Deflated Art Price Index and Record-Breaking Auctions 1900-2012

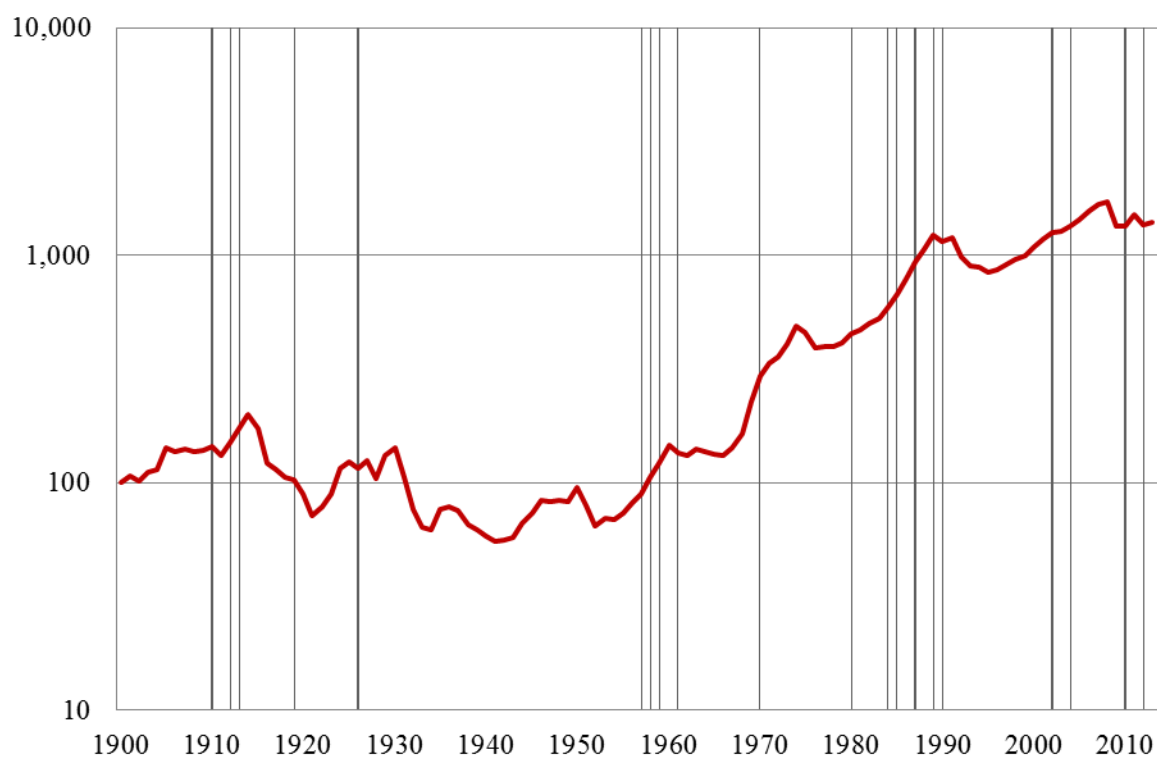


Figure 2. Comparison of Art to Stocks in Rush (1961, p. 385)

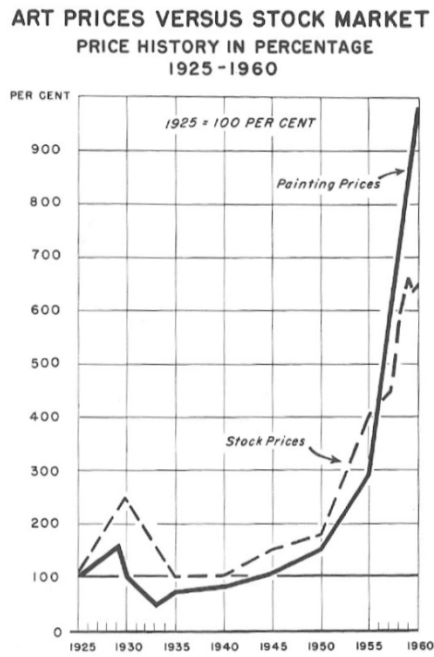


Figure 3. The Sotheby Index (Barron's, 1982, p. 62)

The Sotheby Index[®]				
Category	Jan. 1975	Jan. 1976	Sept. 1981	Sept. 1986
Old Master Paintings	201	201	199	255
19th Century European Paintings	179	179	176	225
Impressionist & Post-Impressionist Paintings	248	248	239	206
Modern Paintings (1900-1950)	249	249	232	204
American Paintings (1800-pre-WW II)	450	450	424	350
Continental Ceramics	293	293	299	336
Chinese Ceramics	445	445	459	462
English Silver	175	175	160	205
Continental Silver	140	140	143	179
American Furniture	209	209	209	172
French & Continental Furniture	228	228	218	232
English Furniture	279	279	270	256
Weighted aggregate	249	249	244	253

®1982 Sotheby Parke Bernet Inc. 1975=100.

Figure 4. Art Market Research on Bloomberg

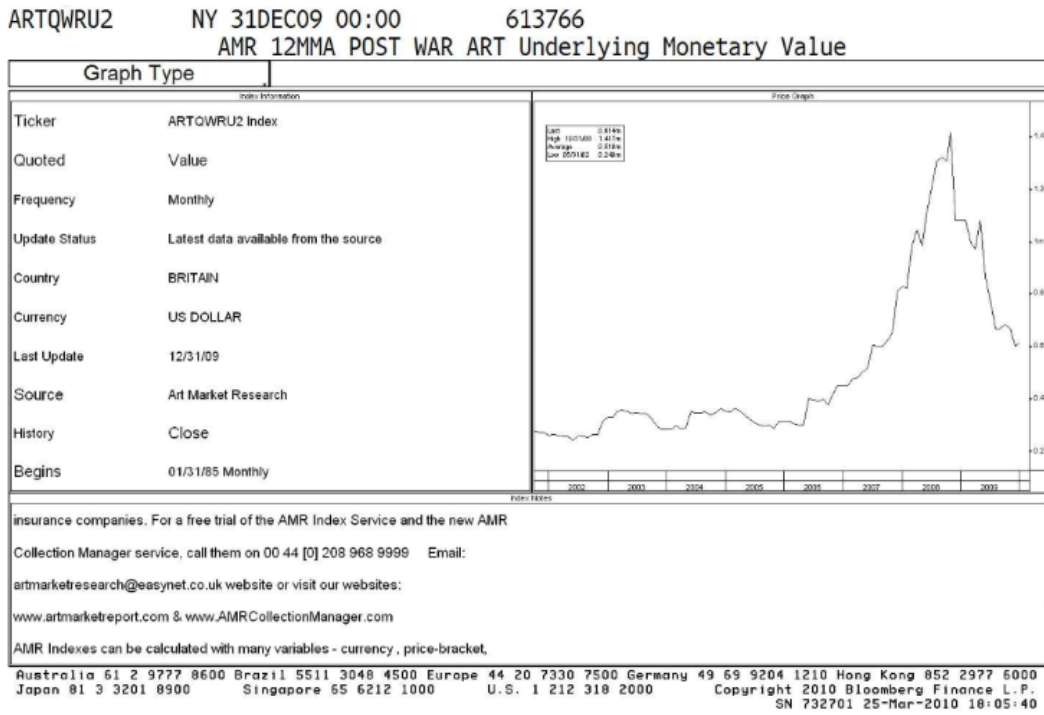


Image courtesy of Art Market Research and Bloomberg.

Table 1. Data Inventory

Data type	Quantity	Format	
<i>Primary data</i>			
Interviews	33	Written interviews and formal recordings	} Analysis for original ethnographic study
Observational data	29 events, including auctions, fairs, and lectures	Field notes: 4 journals of observational notes and on-scene memos	
Surveys of attendees at London Art Fair	50	Paper forms	
<i>Secondary data</i>			
Archival data		Academic studies, Sotheby’s Institute of Art dissertations, British Rail company documents, industry studies (Barclays, TEFAF) and trade publications (Art + Auction, The Art Newspaper), newspaper and magazine archives (Burlington Magazine, The Economist), books	
Online data		Art price databases and indices	

Table 2. Stages of Industry-Level Developments in the Financialization of Art

Stage	Dates	Developments	Examples
1	1960s	Early interest by economists	Reitlinger
		Early price indices	Times-Sotheby Index
2	1970s to 1980s	Early institutional investment interest	British Rail Pension Fund
		Art Trading Ventures	Artemis, Modarco
		Academic research	Journal of Cultural Economics
		Art market analysis	Art Investment Report, Times-Sotheby Index
3	1980s to early 1990s	Academic research	Various
		Art market analytics growth	Artnet, Sotheby Index
		Private art banking services	Citibank
		Dedicated art funds	Chase, BNP
4	1990s to present	Explosion of research and analytics	ArtTactic
		Art investment funds using the private equity structure	The Fine Art Fund, Castlestone
		Development of supporting industries	Fine Art Wealth Management, ARTFA

Table 3. Typology of Investment Venture Failures

	Seen as legitimate	Legitimacy factors led to failure
Failing to profit	<p>Venture failures</p> <p>Failed due to lack of profit, but helped to develop knowledge</p> <ul style="list-style-type: none"> • Chase and BNP funds 	<p>Overall failures</p> <p>Firms that both failed to profit and failed in terms of legitimacy</p> <ul style="list-style-type: none"> • ABN-AMRO fund-of-funds
Adequate or better profits	<p>Clear successes</p> <p>Both profitable and seen as legitimate</p> <ul style="list-style-type: none"> • The Fine Art Fund 	<p>Legitimacy failures</p> <p>Ventures that were profitable, but not justifiable given valuation and monitoring needs</p> <ul style="list-style-type: none"> • BRPF



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