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Abstract

The following thesis explores the nature of art as an asset class, focusing on both its financial correlations with traditional markets and its qualitative characteristics as a hybrid investment. The objective is to assess whether art can legitimately be considered part of the broader category of alternative assets, and to what extent its value lies in financial performance versus cultural and emotional returns.

The first part of the analysis concentrates on the financial dimension. Using data from the Artprice Global Index, alongside equities, bonds, real estate, and gold, both static and rolling correlations are estimated over the period 1998-2025. Results indicate that art exhibits consistently low correlations with traditional asset classes, confirming its potential as a portfolio diversifier. However, tests across major crises - including the dot-com crash, the Global Financial Crisis, and the Covid-19 shock - show that art does not operate as a reliable safe haven. While certain blue-chip segments display partial resilience, the sector as a whole contracts in times of systemic stress, with declining liquidity and auction turnover limiting its defensive role.

The second part of the thesis expands the perspective to a qualitative analysis of art as an asset. It examines the structural inefficiencies of the market - illiquidity, opacity, and high transaction costs - together with behavioral dynamics such as aesthetic enjoyment, status, and the so-called “aesthetic dividend.” Evidence from academic research is complemented by the testimony of an independent art advisor, which highlights how expertise and privileged access are indispensable for capturing upside in a market that rewards insiders. New channels of financialization, including art funds and fractional ownership platforms, further illustrate the sector’s ongoing evolution.

Taken together, the findings suggest that art is best understood as a hybrid asset class: one that provides diversification benefits through financial decorrelation, but whose true distinctiveness lies in the coexistence of cultural, emotional, and financial value.

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Introduction

In recent years, the rise of alternative assets has attracted growing attention, as investors search for diversification, protection against volatility, and exposure to non-traditional sources of value. Among these, art represents one of the most debated and least conventional asset classes. Its appeal lies not only in the potential for financial appreciation but also in the cultural, aesthetic, and symbolic value it embodies. Yet this duality raises a crucial question: can art be legitimately regarded as a financial asset, and if so, what are the defining characteristics of the asset itself, of the market in which it operates, and of the actors who drive its dynamics?

The objective of this thesis is to investigate art's role as an investment, combining quantitative evidence with qualitative insights. From a financial perspective, the analysis tests whether art can contribute to portfolio diversification and whether it demonstrates safe-haven characteristics in periods of crisis. From a qualitative perspective, it examines the structural inefficiencies of the art market - illiquidity, opacity, and high transaction costs - together with the behavioral motivations of collectors and the new channels of financialization, such as art funds and fractional ownership platforms. The research also integrates the perspective of an independent art advisor, underlining how expertise and privileged access are indispensable for navigating a market where opportunities are often reserved to insiders.

To underline the timeliness of this topic, it is worth noting that the first club deal platform dedicated to art pieces has recently been launched in Italy. This initiative reflects a broader trend toward making high-end artworks accessible to a wider base of investors, while at the same time preserving exclusivity through curated, membership-based structures. It illustrates how the art market is currently experimenting with new models that blend inclusivity with elite access, in line with the broader issues explored in this thesis.

The thesis is organized in two parts. Part I focuses on the financial dimension, reviewing academic contributions and conducting an empirical analysis of art's correlation with other asset classes and its alleged safe-haven properties. Part II shifts the perspective to a qualitative level, examining the structural features of the market, the motivations of investors, and the evolution of financial instruments that seek to position art as an asset class. Together, these two approaches provide a

comprehensive framework for evaluating whether art can be considered a legitimate component of investment portfolios, and to what extent its value lies in its hybrid identity - simultaneously cultural and financial.

Part I

Introduction - Correlation between Art and Other Asset Classes

The first part of this thesis investigates the financial characteristics of art by analyzing its correlation with traditional and alternative asset classes, as well as its potential role as a safe haven during periods of market stress. The objective is to assess whether art can meaningfully contribute to portfolio diversification and protection, and to what extent it differs from conventional assets such as equities, bonds, real estate, and gold.

This section combines a review of the academic literature with an empirical analysis based on market indices and auction data. The literature review outlines the main contributions on art as an investment, from early studies emphasizing its speculative nature and modest returns, to more recent evidence on its role as a diversifier. The empirical analysis tests both static and dynamic correlations across asset classes and evaluates art's behavior during major financial crises, benchmarking it against gold as the canonical safe haven.

By integrating theoretical insights with quantitative evidence, Part I provides the foundation for the broader inquiry of this thesis. It clarifies the financial limits and opportunities of art as an investment, and prepares the ground for Part II, which expands the perspective to classification, investor motivations, and the ongoing financialization of the art market.

Theoretical Background

1.1 Academic Contributions on Art as an Investment

The academic study of art as an investment has evolved considerably over the last decades, moving from anecdotal observations of price dynamics to the systematic application of econometric methods.

A central challenge has always been the unique characteristics of art: each artwork is heterogeneous, transactions are infrequent, and data are limited compared to financial assets. Despite these obstacles, scholars have developed approaches to assess the risk-return profile of art, its role in diversified portfolios, and the determinants of its pricing.

A pioneering step in the systematic study of art prices was made by Gerald Reitlinger through his trilogy *The Economics of Taste* (1961, 1963, 1970-71). These volumes, which documented auction

sales over more than two centuries, represented the first large-scale attempt to compile and organize historical data on the art market. By assembling detailed records of repeated transactions, particularly from Christie's and Sotheby's, Reitlinger provided an invaluable database for subsequent academic research. Although his work was not designed as an econometric analysis, and suffered from issues of selection bias and incompleteness, it laid the foundation for later quantitative studies.

Building on the historical database assembled by Reitlinger, Baumol (1986) offered one of the earliest formal economic analyses of art as an investment. In his article *Unnatural Value: Or Art Investment as a Floating Crap Game*, Baumol applied a repeated-sales approach to the auction records spanning more than three centuries. His findings suggested that the average annual real return on paintings was close to zero, despite occasional spectacular price increases. Baumol therefore argued that the art market resembled a speculative lottery rather than a rational investment arena. His colored metaphor of a "floating crap game" captured the inherent unpredictability of art prices and emphasized the absence of reliable equilibrating forces, raising fundamental doubts about the efficiency of art as a financial asset.

Furthermore, one of the most influential early contributions in this field is James E. Pesando's analysis of the market for modern prints (Pesando, 1993, *Art as an Investment: The Market for Modern Prints*). Pesando employed the repeat-sales regression (RSR) method to construct a semi-annual index of art prices between 1977 and 1992. His work is particularly notable for its use of prints, rather than unique paintings, as prints exist in multiple copies and therefore allow for a larger dataset of repeated transactions. Results indicated that the average real return on prints was relatively low, at around 1.5% per year, significantly below that of stocks and even below U.S. government bonds. Moreover, he showed that the volatility of returns on prints was comparable to equities, making the risk-adjusted performance of art relatively unattractive.

Art dealers traditionally advise clients to buy the most expensive artworks they can afford, on the presumption that the top works will outperform the market (Pesando, 1993). His findings found little support for this idea, and in fact demonstrated that the performance of so-called "masterpieces" could be weaker than that of mid-market works. Moreover, and perhaps more interestingly, the study showed how, as far as the art market is concerned, the law of one price

does not necessarily apply, with identical prints frequently selling at leading auction house Sotheby's for greater prices compared to rival Christie's. Such persistent discrepancies suggest that, at least in theory, opportunities for arbitrage could arise, as investors might exploit price differentials between auction houses or geographic markets to generate excess returns.

Goetzmann's (1993) *Accounting for Taste: Art and the Financial Markets over Three Centuries*, constructed an index of painting prices spanning from 1715 to 1986 using repeat-sales regression, demonstrating a strong positive correlation between art prices and financial wealth, particularly stock market performance. He identified several long art market cycles, including major bull markets in the late eighteenth, mid-nineteenth, and post-World War II periods. Although art sometimes rivaled the stock market in terms of returns during specific decades, its overall performance was highly volatile and strongly tied to broader wealth effects.

A data set for the study of art prices was introduced in 2002 (Mei & Moses, 2002, *Art as an Investment and the Underperformance of Masterpieces*). Using repeat-sales data covering more than a century (1875-2000) and drawing from major auction houses, Mei and Moses (2002) constructed the "Mei Moses Art Index." This index allowed to investigate both long-run returns and systematic risk characteristics of art as an asset class, with the research results contradicting some earlier findings. Conclusions included the fact that, over long horizons, art outperformed fixed income securities, though it still lagged significantly behind equity stocks. Art produced an annualized real return of approximately 5% over the twentieth century, compared to nearly 7-9% for stocks. Additionally, and similarly to Pesando, Mei and Moses proved that expensive artworks systematically underperform the broader market index, a result that undermined the traditional belief that investors should always seek out the most prestigious and costly pieces. Overbidding is to be avoided, in a similar way to investments in equity: *buy low, sell high*.

Fundamentally, and more thoroughly investigated in the following chapter, their work contributed to the discussion on diversification: art demonstrated relatively low correlation with other financial assets, meaning that even though its standalone returns were modest, its inclusion in a portfolio would certainly play a crucial role in long term diversification benefits, without expecting standout returns in the short term, due to high illiquidity and transaction costs.

The later contribution by Mandel (2009), *Art as an Investment and the Illiquidity Premium*, expanded the scope of analysis by incorporating the dual nature of art as both an investment and a

consumption good. Mandel argued that artworks, unlike financial securities, deliver nonpecuniary returns to their owners, such as aesthetic enjoyment and the status associated with conspicuous consumption. Building on earlier insights from Veblen (1899) on conspicuous consumption and Kalman (1968) on utility functions incorporating prices - and various more authors in the 80s and 90s acknowledging that investing in art generates the so-called aesthetic dividends - Mandel embedded this idea into a consumption-based capital asset pricing model. By doing so, he provided a theoretical explanation for the empirical observation that art tends to generate lower risk-adjusted returns than equities. His model showed that, because art prices and returns rise in times of high wealth and high consumption utility, the risk premium associated with art can be close to zero or even negative. In other words, investors are willing to accept lower financial returns because art delivers additional utility that is not captured in standard return measures. This theoretical perspective reconciled the paradox of a thriving, high-value art market with the empirical evidence of art's relatively weak financial performance.

More recently, Renneboog and Spaenjers (2013) expanded the empirical literature with their article *Buying Beauty: On Prices and Returns in the Art Market*. Using a comprehensive dataset of more than one million auction transactions between 1957 and 2007, they applied hedonic regression techniques and robustness checks with repeat-sales regressions. Their results indicated that art generated an average annual real return of approximately 4% over the full sample period, comparable to corporate bonds but achieved with significantly higher risk. Unlike earlier studies, they found no systematic evidence that masterpieces underperform, though high-end works exhibited greater volatility - appreciating more during booms and falling faster during downturns. They also highlighted the importance of non-financial determinants such as consumer confidence and market sentiment, showing that art returns are influenced not only by wealth effects but also by behavioral and psychological factors.

Taken together, these academic contributions have shaped a nuanced understanding of art as an investment. Pesando's work highlighted the inefficiencies and modest returns in art markets, particularly in the segment of modern prints, while Mei and Moses extended the time horizon and demonstrated that, although art can outperform bonds, it consistently underperforms equities. Their findings also reinforced the idea that masterpieces are not necessarily superior investments and that the law of one price is not always respected. Mandel introduced an important theoretical

framework, emphasizing the consumption dimension of art ownership and explaining why investors might rationally accept low or even negative risk premia. Building on these foundations, Baumol's early skepticism about art's financial performance, Goetzmann's demonstration of the long-run correlation between art prices and financial wealth, and the more comprehensive empirical evidence of Renneboog and Spaenjers further enriched this literature. The overall picture is one of an asset class that consistently underperforms equities, matches bond returns, and exhibits high volatility and illiquidity. Transaction costs at auctions are substantial, typically ranging from 10% to 20% of the transaction value, further eroding net returns. Yet, the unique combination of financial and non-financial returns - particularly the so-called aesthetic dividends - makes art a distinctive component in the investment universe. Theoretically, for portfolio managers, the key implication is that art may serve as a diversifier, particularly in periods of high inflation or financial uncertainty, but it should not be expected to deliver superior financial returns compared to traditional asset classes. This duality explains why art remains a persistent, though unconventional, element of investment strategies: financially weak in isolation, but potentially valuable within broader portfolios.

1.2 Correlation with other Asset Classes and the Safe Haven Debate

1.2.1 Correlation with Traditional and Alternative Asset Classes

A central strand of the literature has focused on the degree of correlation between art and other financial assets, seeking to determine whether art can genuinely contribute to portfolio diversification. Early studies already suggested that art prices tend to move independently from the major financial markets, making it a potentially useful though unconventional asset.

The pioneering work of Mei and Moses (2002, *Art as an Investment and the Underperformance of Masterpieces*) demonstrated that art returns exhibit low correlation with equities and bonds, a result confirmed through their construction of the Mei Moses Art Index. Despite documenting lower average returns than stocks, their findings underscored the possibility that art could serve as a useful diversifier due to its relative isolation from mainstream financial cycles. Similarly, Frey and Pommerehne (1989, *Art Investment: An Empirical Inquiry*), in one of the earliest empirical

analyses, concluded that while art was not competitive with equities in terms of returns, its lack of co-movement with stocks and bonds could reduce overall portfolio volatility.

A particularly relevant contribution to the correlation debate is offered by Jurevičienė and Savičenko (2012, *Art Investments for Portfolio Diversification*). Using the Artprice Global Index as a proxy for art and the S&P 500 as a benchmark for equities, they conducted a regression analysis to directly test the relationship between these two markets. Their results showed a weak but statistically significant correlation, implying that changes in equity markets do not directly translate into shifts in the art market. Building on this, the authors developed efficient frontiers that included art among other assets and demonstrated that, in some configurations, portfolios containing art could achieve improved diversification. The study therefore provides direct empirical evidence that art can function as a complementary component in portfolio allocation.

Further methodological refinements have been proposed by Charlin (2017, *On the Correlation between Stocks and Art Market Returns*), who argued that single correlation coefficients are not sufficient and must be interpreted with caution. Using bootstrap techniques to estimate confidence intervals around the correlation between a dataset of Renoir paintings and equity indices, he found that the correlations were generally weak and statistically fragile. This reinforced the idea that art is not tightly connected to financial markets, but also highlighted the importance of acknowledging statistical uncertainty rather than relying on single numerical estimates.

Long-run relationships have also been explored through cointegration and wealth-effect frameworks. Worthington and Higgs (2003, *Short- and Long-term Comovements in Major Painting Markets and the Global Equity Market*) examined the co-movement between different painting market segments and a global equity index from 1976 to 2001. Their results suggested evidence of both short- and long-term linkages, although equities explained only a small fraction of the variation in art prices, confirming art's partial detachment from financial markets. Goetzmann, Renneboog, and Spaenjers (2009, *Art and Money*) extended this perspective by linking art valuations to macroeconomic wealth effects, showing that growth in top incomes and strong stock market performance were important drivers of demand for high-end art.

Finally, the study of Öztürkkal and Togan-Eğrican (2020, *Art Investment: Hedging or Safe Haven through Financial Crises*) contributes a valuable perspective from an emerging market - usually a more valuable proxy to a natural and pure financial market environment. Using data from Turkey covering the period 1994-2014, they constructed an hedonic index of over 2,300 artworks and compared it with equities, bonds, and gold. Their analysis revealed that art exhibited negative average correlation with equities, suggesting meaningful hedge properties. At the same time, they observed that these relationships were sensitive to macroeconomic volatility, with correlations fluctuating depending on the level of systemic stress. The study provides an important reminder that the strength of art's diversifying role may depend on the economic environment in which it is tested, with the asset being more effective as an hedging tool in more emerging markets.

These contributions converge on a consistent message: art demonstrates low average correlation with equities and bonds, supporting its role as a diversifier. However, its contribution is nuanced, as correlations are not fixed and may vary across periods and economic regimes. Moreover, the influence of wealth effects indicates that, while art remains partially isolated from financial markets, it is not completely detached from macroeconomic cycles.

1.2.2 Beyond Diversification: Art and the Safe Haven Question

While art appears to provide some hedging properties in average conditions, a more challenging question is whether it can operate as a safe haven, maintaining or even increasing value during times of systemic crisis. The concept of a safe haven was formalized by Baur and Lucey (2010, *Is Gold a Hedge or a Safe Haven?*), who defined it as an asset that is uncorrelated or negatively correlated with equities and bonds specifically during episodes of market stress. Gold is the canonical example: it has been shown to provide protection in extreme downturns, as recent soaring upwards gold trends show.

Öztürkkal and Togan-Eğrican (2020, *Art Investment: Hedging or Safe Haven through Financial Crises*) examined this question within the Turkish market - particularly valuable for this inquiry for the same market purity characteristics mentioned above. Their study revealed that art could indeed serve as a hedge under normal market conditions, given its negative average correlation with equities. However, when focusing on periods of financial stress, the evidence was far less

convincing. Correlations between art and risk indicators such as volatility indices and credit spreads tended to increase, suggesting that art did not preserve value during crises. Moreover, their findings highlighted the possibility of “fire sales” in the art market, as some investors liquidated holdings during downturns. The overall conclusion was that while art may hedge risks in stable conditions, it cannot be relied upon as a safe haven in the way that gold can.

Dimitriou (2025, *Art as a Safe Haven Investment during Financial Crises: Myth or Reality?*) reinforced this conclusion with a broader international dataset spanning multiple crises, including the dot-com bubble, the global financial crisis, and the COVID-19 shock. Employing time-varying correlation models, Dimitriou found that art’s safe-haven properties were not robust. In most crises, art prices declined in tandem with equities, reflecting the procyclical nature of demand from high-net-worth individuals. Nonetheless, the study did note an interesting nuance: certain blue-chip segments of the art market, such as works by established masters, displayed partial resilience. This suggests that safe-haven behavior in art may be segment-specific, but even in these cases the protective effect was weaker and less reliable than that of gold or government bonds.

David (2014, *Is Art Really a Safe Haven? Evidence from the French Art Market during WWI*) offered a historical perspective by studying the French art market during World War I. His analysis challenged the idea that art could be a protective asset in times of severe disruption. Prices in the French market did not show systematic resilience relative to traditional safe assets, undermining the notion that art can function as a store of value in wartime. Instead, the evidence indicated that art markets, much like other luxury markets, suffered from reduced demand when economic and political uncertainty was at its peak. This case study illustrates that art’s vulnerability during systemic shocks is not only a contemporary phenomenon but has deep historical roots.

Taken together, these studies converge on a clear conclusion: while art may behave as a hedge in average conditions, it does not consistently operate as a safe haven in crises. Structural features such as illiquidity, heterogeneity, and the dependence of demand on the wealth of high-net-worth individuals limit art’s protective capacity. Unlike gold, which benefits from standardization and liquidity, art cannot be liquidated quickly or universally accepted as collateral. Therefore, according to previous literature, art should be considered a diversifying asset with conditional hedging properties, but not a reliable safe haven comparable to gold.

Empirical Analysis

2.1 Correlation Between Art and Other Asset Classes: Methodology

The empirical analysis presented in this chapter is designed to test the correlation between art and other asset classes, as well as to investigate whether art can effectively operate as a safe haven in times of financial distress.

This section provides a comprehensive explanation of the data sources employed, the methodological decisions that shaped the construction of the dataset, and the procedures followed in order to conduct the correlation analysis.

A first crucial element concerns the selection of datasets. The analysis is based on a core group of five asset classes¹:

- (i) the Artprice Global Index, used as the main proxy for art prices and returns;
- (ii) the S&P 500, which represents the global equity benchmark;
- (iii) the iShares 7-10 Year Treasury Bond ETF (IEF), which serves as a proxy for US government bonds;
- (iv) the Vanguard Real Estate ETF (VNQ), which provides exposure to the listed real estate market (REITs)
- (v) the LPX50 Total Return Index (LPX50), which tracks the performance of listed private equity companies globally.

In addition to the core dataset, gold, represented by the XAU/USD spot price, is considered the canonical benchmark for safe haven analysis. Gold is not included in the main correlation analysis, but it is examined in a dedicated section, given its central role in the literature as the traditional hedge against equity market downturns. This allows for a direct comparison between art and the asset most frequently associated with safe haven properties. The dataset is constructed at a quarterly frequency, in order to align with the Artprice Global Index, which is updated on a quarterly basis. For each asset, the last available observation of January, April, July, and October is extracted, ensuring comparability across all series. The time horizon

¹ Financial data for equities, fixed income, real estate, private equity, and gold were obtained from Investing.com. Art market data, including the Artprice Global Index and auction turnover figures, were sourced from Artprice (www.artprice.com). All calculations by the author.

varies according to the availability of data: from 1998 onwards for art, equities, and gold; from 2006 onwards when including real estate and fixed income securities.

The Artprice Global Index

A crucial component of the methodology is the construction and interpretation of the Artprice Global Index (USD).

This index is rebased to 100 in January 1998 and represents the evolution of global art prices as measured through repeat-sales regression.

Fundamentally, the index works as follows:

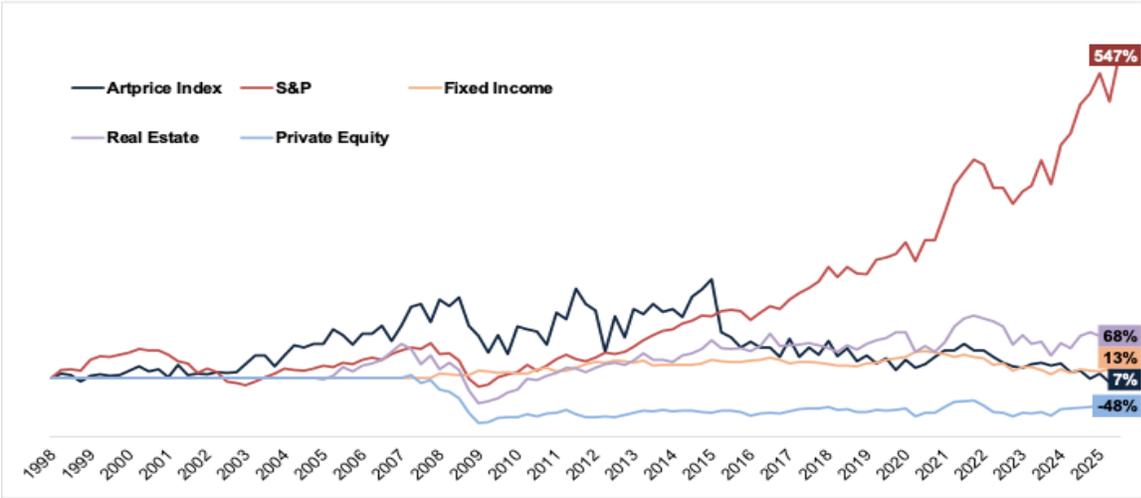
- The repeat-sales regression method isolates artworks that have been sold at least twice at public auction. For each repeat sale, the change in price between the two transactions is calculated, and these observations are then aggregated through a regression model with time dummies, which estimates the average price evolution across all repeated sales. This procedure has several important implications. It controls for heterogeneity, since each artwork is unique and cannot be directly compared to others; by considering repeat sales, the analysis isolates pure time variation, preventing single extraordinary transactions, such as record-breaking sales, from dominating the index, since each repeat sale counts as one observation.

Nonetheless, the repeat-sales methodology also entails limitations. The index only considers publicly auctioned works and excludes private transactions, which represent a significant share of the market, but also very difficult to quantify. It is also subject to selection bias, as artworks that are resold are typically those that have preserved or increased their value, while works that lose appeal are less likely to reappear at auction. Additionally, the illiquidity of the art market implies that repeat sales may be relatively sparse, especially for specific segments, which can reduce the robustness of estimates in short sub-periods. These limitations must be kept in mind when interpreting results, and they underline why complementary measures - such as auction revenues - are useful to contextualize findings.

Alongside price indices, this study considers aggregate auction revenues of the major houses. Revenues provide a proxy for overall market sentiment and liquidity, as they reflect both the number of works sold and the average prices achieved. They display clear cyclical patterns, surging in times of economic growth and contracting sharply during crises. The collapses of 2009 and 2023-24 illustrate the vulnerability of art demand to global liquidity conditions, a factor that is particularly relevant in assessing whether art can act as a safe haven.

2.2 Analysis and Results²

Graph 1 - Performance of Art and Financial Assets



Graph 1 illustrates the cumulative performance of the Artprice Global Index, equities, fixed income, real estate, and private equity over the available sample period. The S&P 500 and the Artprice Index are tracked from 1998, while fixed income data are available from 2004, and real estate (VNQ) and private equity proxies from 2007. This difference in coverage reflects the availability of reliable market indices for each asset class.

This preliminary comparison emphasizes two points. First, the substantial dispersion of returns across asset classes highlights the unique position of art: not a high-yielding asset, but one that follows its own trajectory. Second, the lack of parallel movement with equities, real estate, or

² All subsequent graphs and tables are based on data from Artprice (art market) and Investing.com (financial markets); author’s elaboration.

bonds suggests that art may contribute diversification benefits. These descriptive patterns motivate a closer investigation of correlations - both static and dynamic - to test whether art can act as a hedge or even a safe haven during market stress.

Correlation Between Art and Other Asset Classes: Static Correlation

Table 1 - Static Correlation between Asset Classes

| | S&P 500 | Fixed Income | Real Estate | Private Equity |
|-----------------------|--------------------|---------------------|--------------------|-----------------------|
| Artprice Index | 0.16 | 0.02 | 0.13 | 0.14 |
| S&P 500 | - | -0.12 | 0.75 | 0.92 |
| Fixed Income | -0.12 | - | 0.11 | -0.09 |
| Real Estate | 0.75 | 0.11 | - | 0.76 |
| Private Equity | 0.92 | -0.09 | 0.76 | - |

Static correlations provide a first indication of the degree to which asset returns have moved together over the full sample period. Unlike rolling correlations - studied in the next paragraph - which capture time variation, static measures are computed over the entire horizon and therefore offer an average picture of the long-term relationships among assets. In this analysis, quarterly returns from 1998 to 2025 have been employed, ensuring comparability across all series.

The results reported in Table 1 show that the Artprice Index displays consistently low static correlations with all the traditional asset classes considered. Its correlation with the S&P500 amounts to only 0.16, with bonds essentially negligible (0.02), and with real estate (0.13) and private equity (0.14) remaining weak as well. This finding is in line with the literature that portrays art as a potential diversifier: *Mei and Moses (2002)* already emphasized that art's investment rationale lies more in its decorrelation than in its absolute returns, while *Dimson and Spaenjers (2014)* confirmed that, over long horizons, correlations between art and financial markets remain modest.

To further validate the robustness of these results, correlations among financial assets themselves are markedly higher. The S&P500 shows strong co-movement with both real estate (0.75) and private equity (0.92) throughout the whole time span, reflecting their common exposure to equity market cycles. Bonds are negatively correlated with equities (-0.12), consistent with their role as a defensive asset, but the correlation is not as strongly negative as in shorter time frames or during periods of acute crisis.

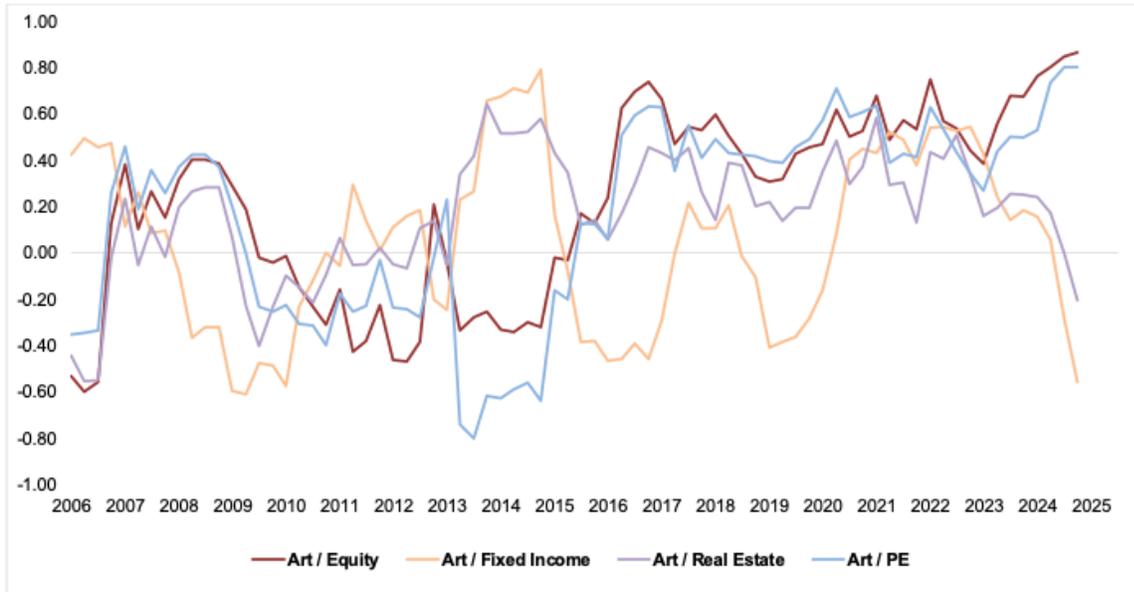
Taken together, these results suggest that art has behaved as an independent asset class over the last 25 years, with minimal integration into broader financial markets. While static correlations cannot reveal the dynamics of crisis periods, they provide a useful starting point: art appears weakly connected to all major asset classes, which supports its role as a diversifier within a multi-asset portfolio.

Correlation Between Art and Other Asset Classes: Rolling Correlation

While static correlations provide a useful first approximation, they inevitably conceal important time variation. To capture the dynamic nature of the relationships between art and other asset classes, rolling correlations were computed over a 24-month window. This approach made it possible to observe short- to medium-term fluctuations and to highlight whether the diversification potential of art remained consistent or changed across market regimes. As emphasized by Baur and Lucey (2010, *Is Gold a Hedge or a Safe Haven?*) in their analysis of gold, the ability of an asset to serve as a hedge or a safe haven can only be properly assessed through a time-varying perspective rather than by relying on full-sample averages.

The graphs that follow present both an aggregate view, where the Artprice Global Index was compared simultaneously with equities, bonds, real estate, private equity, and gold, and a set of individual plots focusing on each pair separately. This dual representation provided a clear overview of the general instability of correlations and allowed for a more granular assessment of specific asset class interactions.

Graph 2 - Rolling Correlations Overview (24-month)



Graph 2 presents the rolling correlations (24-month window) between the Artprice Global Index and the four main financial asset classes considered in the baseline analysis: equities, fixed income, real estate, and private equity. The series start in 2006, since this is the first year in which all the indices could be aligned on a quarterly frequency, ensuring comparability across assets. This alignment is essential to avoid distortions, as the availability of data for real estate and private equity begins later than for equities and bonds.

The chart highlights a clear pattern: correlations between art and financial markets are highly unstable, oscillating widely between positive and negative territory, with no evidence of persistent co-movements. At times, the Artprice Index moved in parallel with equities or real estate, while in other phases the relationship turned negative, especially during periods of financial stress such as the 2008 Global Financial Crisis. Fixed income correlations remained particularly erratic, often hovering around zero, reflecting the fundamentally different drivers of bond markets compared to art.

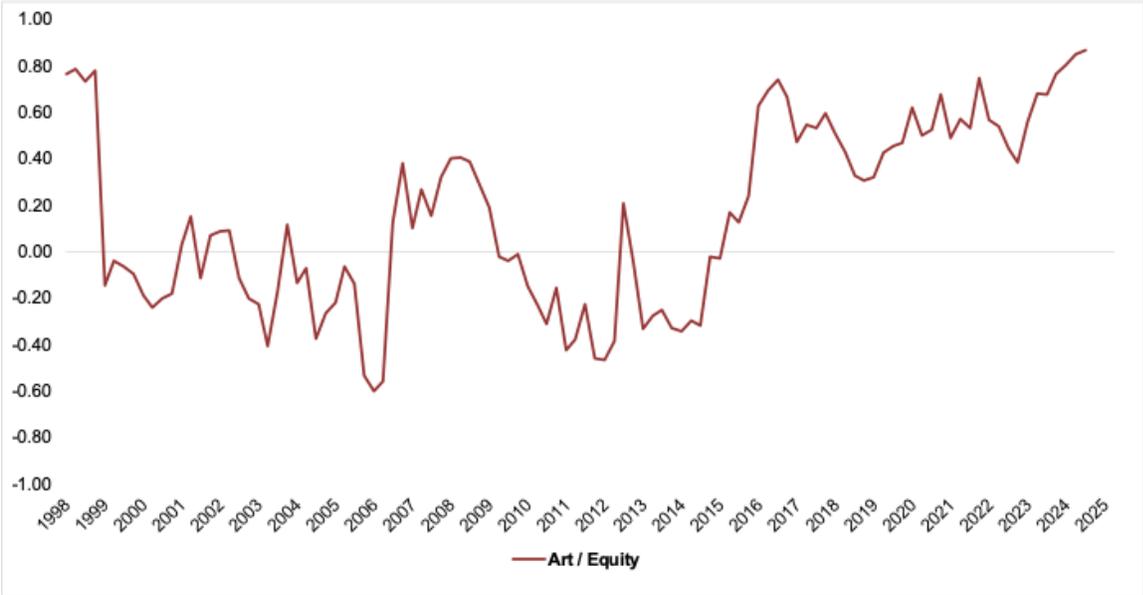
Overall, the evidence confirms that there is no stable correlation between art and traditional financial assets. This result is consistent with prior academic findings, such as Charlin (2017, *On the Correlation between Stocks and Art Market Returns*), who showed that art-equity correlations

are both weak and fragile, and Worthington and Higgs (2003, Short- and Long-term Comovements in Major Painting Markets and the Global Equity Market), who documented similar instability across international painting markets.

Given this aggregate evidence, the next step is to explore the correlations pair by pair, focusing on art in relation to each individual asset class. This more granular analysis allows us to identify whether distinct patterns emerge in specific bilateral relationships and to assess more precisely the potential role of art in portfolio allocation.

Art vs. Equity

Graph 3 - Rolling Correlations Art vs. Equity



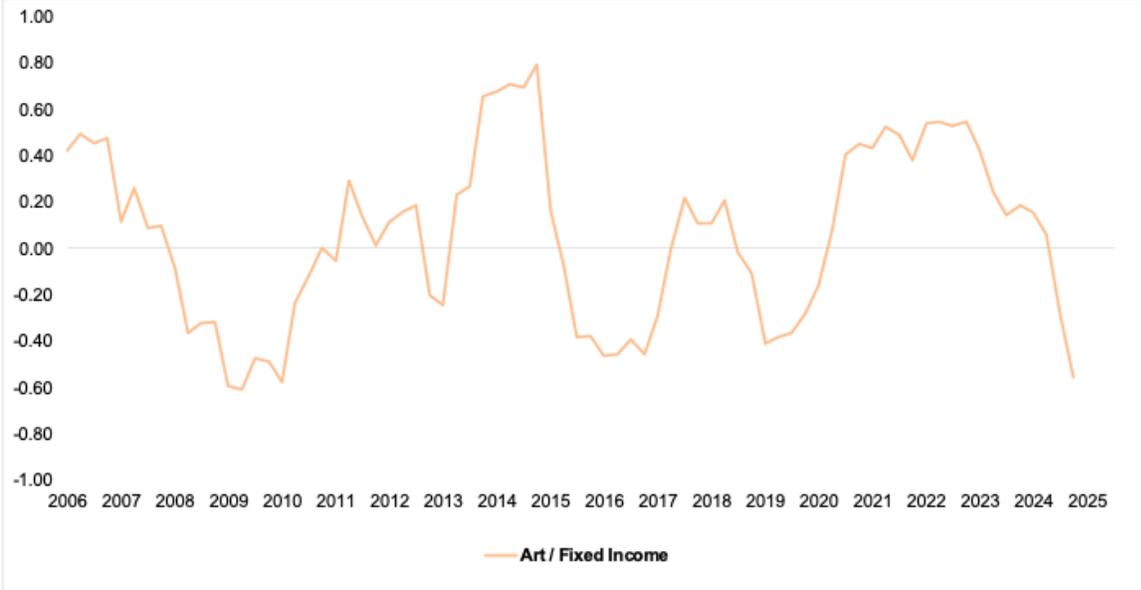
Graph 3 illustrates the rolling correlation between the Artprice Global Index and the S&P 500 from 1998 to 2025, based on a 24-month window. The series reveals a pronounced instability, with correlations frequently alternating between positive and negative values. In the early 2000s, during and after the dot-com crash, correlations often turned negative, highlighting that art did not follow the dynamics of equity markets. A similar pattern was observed during the Global Financial Crisis of 2007-2009, when art prices behaved independently from equities, offering diversification at a time of severe financial stress.

In the more recent decade, however, correlations have trended upward, at times reaching values above 0.5. This does not contradict the notion of art as a decorrelated asset, but rather reflects the progressive financialization of the art market, whereby art has become increasingly tied to global wealth and liquidity conditions. As noted by Dimson and Spaenjers (2014, Returns on Art, 1900-2012), art prices are influenced by broader macroeconomic trends, and their integration with capital markets has intensified over time.

Taken together, the evidence suggests that art has historically offered weak or negative co-movements with equities, reinforcing its role as a portfolio diversifier. Yet, the stronger link observed in the last decade may signal that the boundaries between art and financial markets are becoming less distinct, in line with the broader trend of art being treated as a financial asset.

Art vs. Fixed Income

Graph 4 - Rolling Correlations Art vs. Fixed Income



Graph 4 reports the rolling correlation between the Artprice Global Index and the iShares 7-10 Year Treasury Bond ETF (IEF), used here as a proxy for fixed income, from 2006 to 2025. The correlation series fluctuates significantly across the sample, with values ranging from strongly negative to moderately positive. During the years of the Global Financial Crisis (2007-2009), correlations dropped deeply below zero, indicating that art and bonds moved in opposite directions

at a time when investors shifted massively towards fixed income as a safe asset. This highlights the independence of the art market from traditional defensive dynamics.

In subsequent years, correlations occasionally turned positive, particularly around 2013-2015 and again between 2019 and 2022. However, these episodes proved short-lived, with values quickly reverting towards zero or negative territory. The overall picture suggests that the relationship between art and bonds is unstable and lacks persistence. This is consistent with the notion that the drivers of art prices - collector demand, wealth effects, and market sentiment - are structurally different from those governing bond returns, which are determined primarily by interest rate cycles and monetary policy.

The evidence therefore reinforces the interpretation of art as a decorrelated asset in relation to fixed income. As noted by Mandel (2009, *Art as an Investment and the Underperformance of Masterpieces*), the demand for art is partly motivated by consumption and non-financial utility, which insulates it from the interest-rate sensitivity typical of bond markets. This makes art distinct from bonds and supports its role as a diversifier within a portfolio context.

Art vs. Real Estate

Graph 5 - Rolling Correlations Art vs. Real Estate



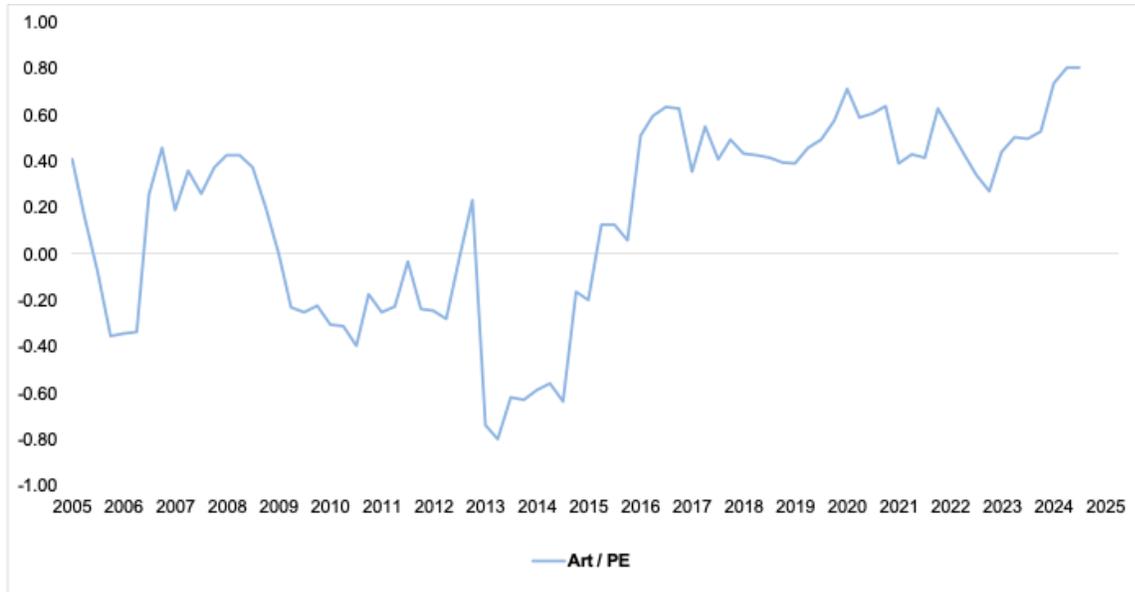
Graph 5 reports the rolling correlation between the Artprice Global Index and the Vanguard Real Estate ETF (VNQ), taken as a proxy for listed real estate markets, over the period 2003-2025. The series shows a high degree of variability, alternating between negative and positive phases, with no evidence of a stable long-term relationship. In the years preceding the Global Financial Crisis, correlations dropped sharply below zero, suggesting that art and real estate were moving in opposite directions at a time when property markets were overheating. During the crisis itself (2007-2009), the relationship remained unstable, confirming that art prices were not systematically tied to the dynamics of real estate markets.

From 2013 onwards, correlations tended to become more positive, often fluctuating between 0.2 and 0.6, although without establishing a persistent pattern. This reflects the fact that both art and real estate share some common exposure to broader macroeconomic factors, such as global liquidity and investor sentiment, but their co-movement remains partial and subject to reversal in downturns. The decline observed towards the end of the sample, when correlations again fell into negative territory, underscores the absence of a structural link between the two asset classes.

Overall, the evidence indicates that while art and real estate occasionally move together during periods of expansion, their relationship is weak and unstable. This supports the interpretation of art as a decorrelated asset rather than as an extension of the property cycle. As highlighted by Dimson and Spaenjers (2014, Returns on Art, 1900-2012), the value of art is shaped by idiosyncratic demand factors and wealth effects, which differentiate it from asset classes primarily driven by credit conditions and real estate valuations.

Art vs. Private Equity

Graph 6 - Rolling Correlations Art vs. Private Equity



Graph 6 shows the rolling correlation between the Artprice Global Index and the LPX50 Total Return Index, which is employed as a proxy for global listed private equity, over the period 2005-2025. This index tracks the performance of the 50 largest and most liquid listed private equity companies worldwide and is widely used in the literature as a benchmark for private equity returns.

The series reveals a marked instability, particularly in the first part of the sample. During the Global Financial Crisis (2007-2009), correlations oscillated between positive and negative values, often dropping below -0.4, suggesting that art and private equity responded to different dynamics in a period of systemic stress. Between 2010 and 2014, correlations remained weak and volatile, reflecting the fact that private equity valuations are heavily influenced by credit market conditions, leverage cycles, and investor risk appetite, while art is more insulated from these financial drivers.

From 2015 onwards, correlations increased substantially, often remaining above 0.5 and reaching peaks close to 0.8 in the most recent years. This upward trend can be interpreted as a symptom of the increasing financialization of the art market, which has become progressively more sensitive to global wealth cycles and liquidity conditions - factors that also drive private equity. However,

even during this period, the relationship is not perfectly stable, with short-term fluctuations reminding that art still retains idiosyncratic characteristics.

Overall, the evidence suggests that art and private equity share some common exposure in expansionary phases, but the relationship is far from constant. The art market remains largely decorrelated from private equity over the long run, which supports its role as a diversifying asset within a portfolio.

2.3 Conclusions on Art as a Potential Diversifier in a Portfolio

The overall evidence from both static and rolling correlations supports the interpretation of art as a potential portfolio diversifier. Static correlations with equities, bonds, real estate, and private equity remained consistently low over the full sample, confirming that art is only weakly integrated into financial markets. This finding is consistent with earlier contributions such as Mei and Moses (2002, *Art as an Investment and the Underperformance of Masterpieces*) and Dimson and Spaenjers (2014, *Returns on Art, 1900-2012*), who emphasized that art's main appeal for investors lies in its lack of systematic co-movement with traditional assets rather than in its return profile.

The rolling analysis further highlights the instability of correlations, which fluctuated widely between positive and negative values across all asset classes. While certain periods - particularly in the last decade - displayed stronger positive correlations with equities and private equity, these episodes did not establish a persistent relationship. Rather, they can be interpreted as temporary outcomes of the financialization of the art market and its increasing sensitivity to global liquidity cycles.

Taken together, these results suggest that art retains its role as a largely decorrelated asset class, whose value dynamics are shaped by idiosyncratic demand, wealth effects, and market sentiment. As such, art can contribute to risk reduction within a diversified portfolio, although it cannot be regarded as a systematic hedge against movements in financial markets. This conclusion naturally motivates the next step of the analysis, which focuses on whether art may behave as a safe haven asset in times of financial distress, benchmarked against gold - the most famous haven in times of crisis.

2.4 Testing the Safe Haven Properties of Art: Methodology

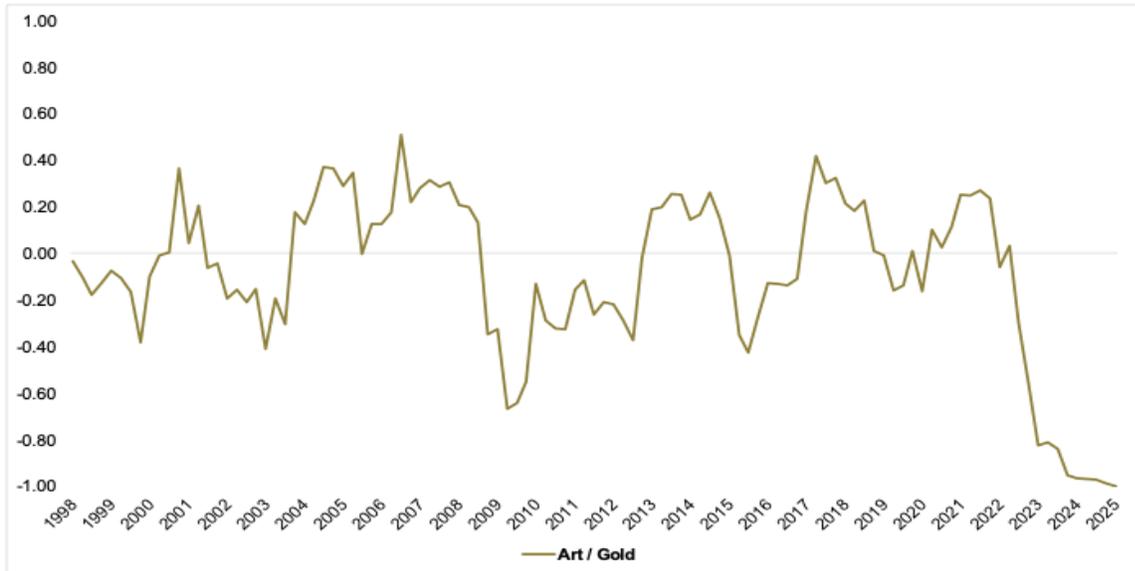
The notion of a safe haven asset refers to an investment that preserves value or even appreciates during periods of financial turmoil, thereby providing protection when traditional markets experience severe downturns. Baur and Lucey (2010, *Is Gold a Hedge or a Safe Haven?*) distinguish between a hedge - an asset that is uncorrelated or negatively correlated with stocks on average - and a safe haven, which is uncorrelated or negatively correlated specifically during times of market stress. In financial literature, gold has traditionally been regarded as the canonical safe haven, consistently attracting demand in times of crisis and acting as a store of value.

Against this backdrop, the following section investigates whether art can display similar properties. To this end, the analysis compares the behavior of art with gold, using rolling correlations during well-defined episodes of financial distress. By focusing on the dot-com bubble (2000-2002), the Global Financial Crisis (2007-2009), and the Covid-19 market shock (2020), the following empirical analysis aims to assess whether art exhibited the negative or near-zero correlations with equities that are considered the defining feature of a safe haven asset.

To assess whether art displays safe haven properties, rolling correlations were computed using a 12-month window during well-defined episodes of financial distress. The shorter window was preferred for the crisis analysis in order to better capture the abrupt dynamics of market turmoil, where structural breaks occur over a relatively short horizon.

Gold was proxied by its spot price against the US dollar (XAU/USD), which provides a long historical series and avoids the distortions that could arise from ETF-specific factors such as management fees or tracking error. The S&P 500 served as the proxy for equity markets, while the Artprice Global Index was used for art. Three crises were selected to provide a comprehensive test across different types of shocks: the dot-com bubble (2000-2002), the Global Financial Crisis (2007-2009), and the Covid-19 crash (2020). For each crisis, correlations between art and equities, gold and equities, and art and gold were analyzed, in order to evaluate whether art behaved as a diversifier or whether it displayed the negative co-movements that characterize a safe haven asset.

Graph 7 - Rolling Correlations Art vs. Gold

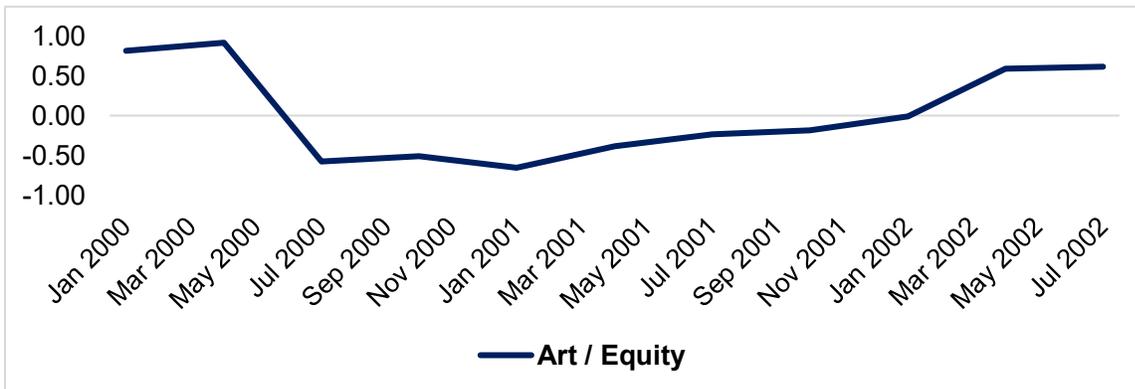


Graph 7 presents the rolling correlation (24-month window) between the Artprice Global Index and gold, proxied by the XAU/USD spot price, over the period 1998-2025. Art and gold do not seem to share a systematic co-movement, reinforcing the potential interpretation that the art market is driven by idiosyncratic factors rather than by the safe haven dynamics that characterize gold. To evaluate this more rigorously, the analysis now turns to specific episodes of financial stress.

2.5 Analysis and Results

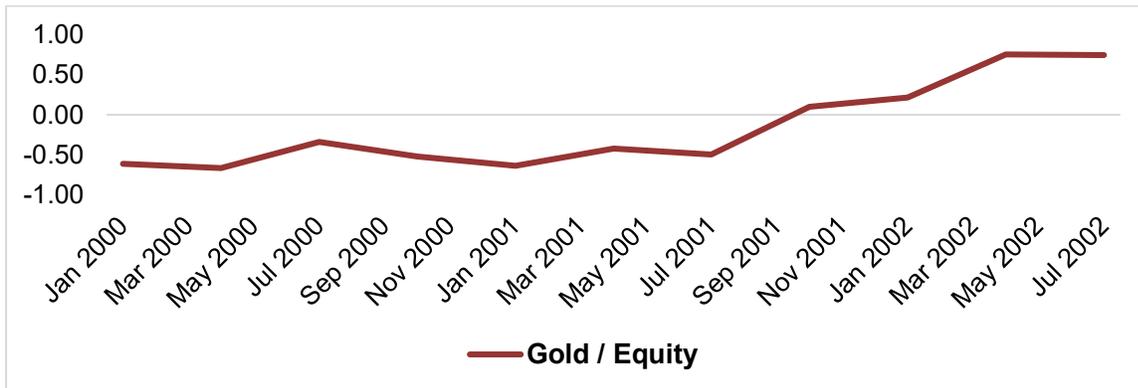
Dot-com Bubble

Graph



8

Graph 9



Graph 10

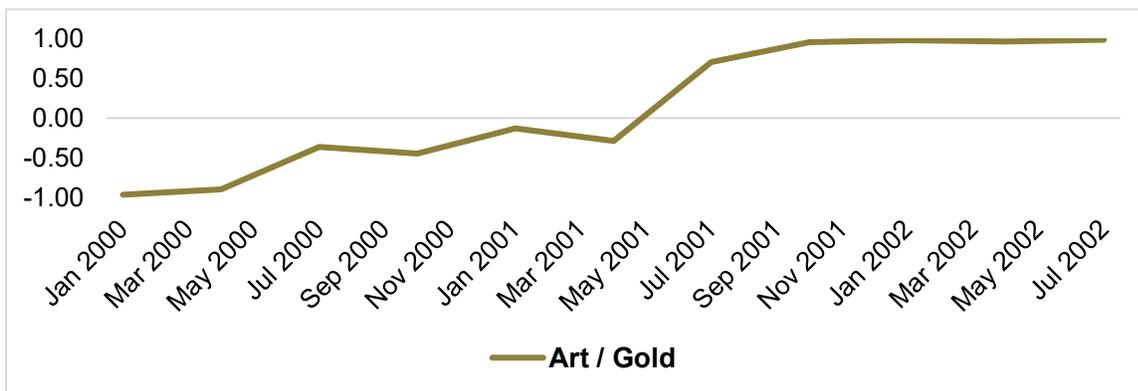


Table 2 - Average Rolling Correlation

| | Art / Equity | Gold / Equity | Art / Gold |
|----------------|--------------|---------------|------------|
| Average | 0.03 | -0.17 | 0.14 |

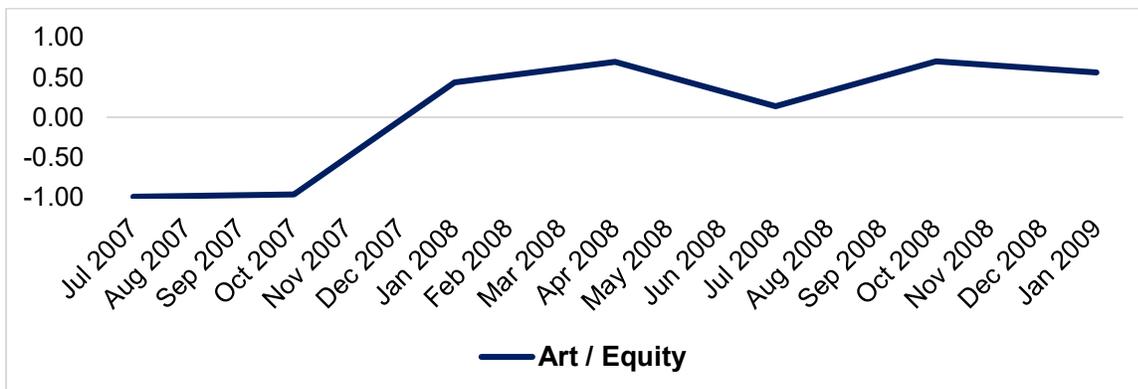
Graphs 8/9/10 illustrate the rolling correlations (12-month window) between art, equities, and gold during the dot-com bubble, (Q1 2000 - Q3 2002) while Tables 3/4 in the Appendix report the full set of quarterly values. On average, correlations between art and equities were close to zero (0.03), reflecting a lack of systematic co-movement between the two markets. This confirms that, at the time, art prices followed an independent trajectory, unaffected by the sharp correction in technology stocks.

By contrast, gold exhibited a negative average correlation with equities (-0.17), consistent with its widely recognized safe haven role. During the most acute phases of the equity downturn, gold decoupled from stock markets and provided protection to investors. The correlation between art and gold was slightly positive on average (0.14), but the series was highly unstable, alternating between negative and strongly positive values.

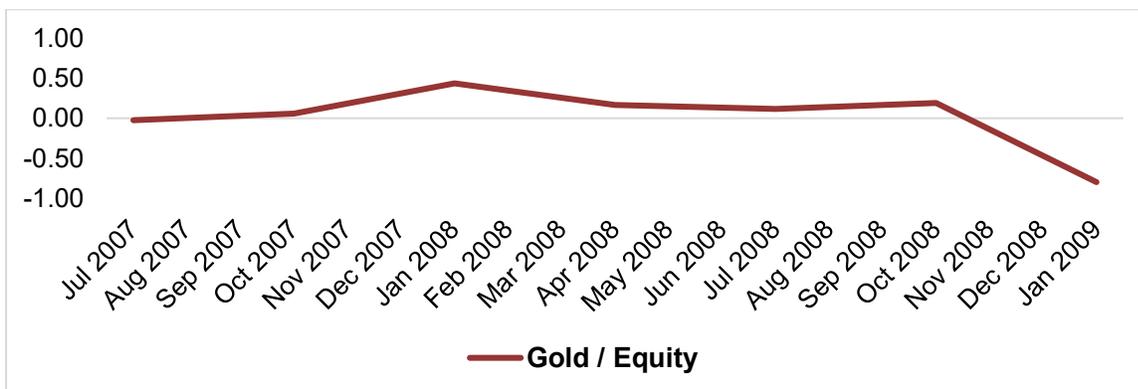
Results suggest that art did not behave as a safe haven during the dot-com crash. Unlike gold, it failed to establish a consistent negative correlation with equities in periods of stress. Nevertheless, its near-zero average correlation indicates that art acted as a diversifier, maintaining independence from equity market dynamics even during a severe correction.

Global Financial Crisis

Graph 11



Graph 12



Graph 13

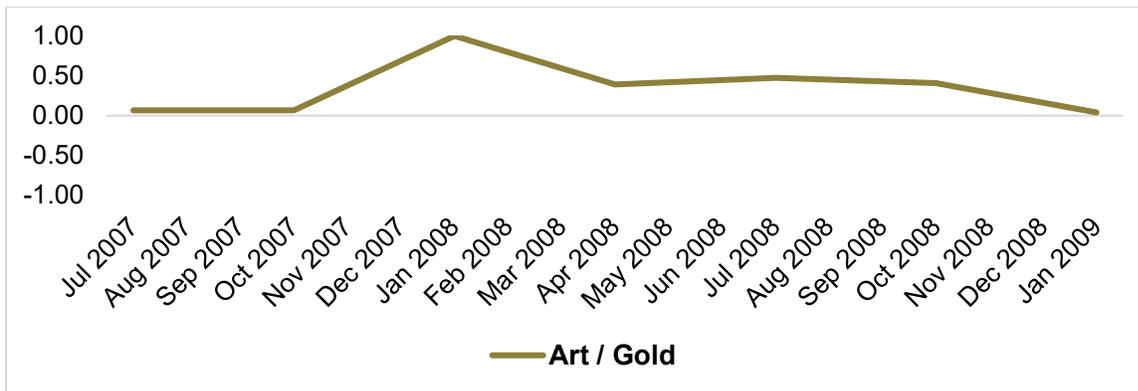


Table 3 - Average Rolling Correlation

| | Art / Equity | Gold / Equity | Art / Gold |
|----------------|---------------------|----------------------|-------------------|
| Average | 0.08 | 0.02 | 0.35 |

Graphs 11/12/13 present the rolling correlations (12-month window) between art, equities, and gold during the Global Financial Crisis (GFC), while detailed quarterly values are reported in Tables 5/6 in the Appendix. The results indicate that the behavior of art during the crisis was unstable and markedly different from that of gold.

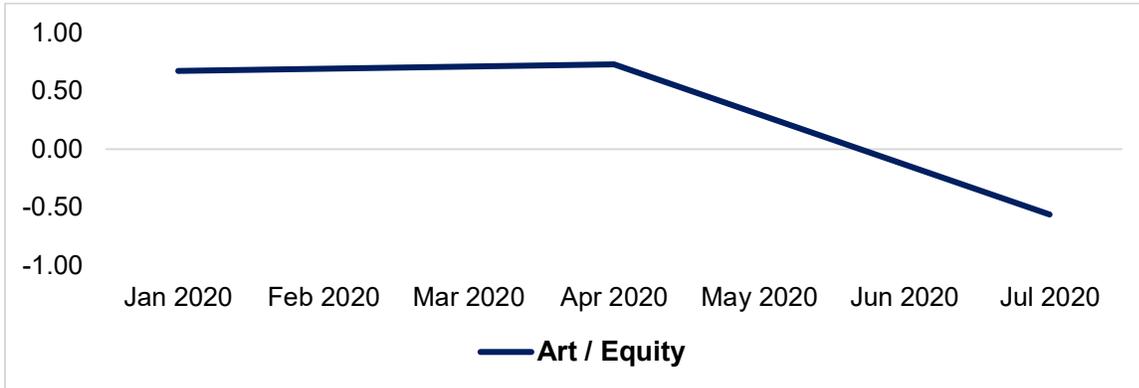
In the initial phase of the crisis (mid-2007), art displayed strongly negative correlations with equities (-1.00 in July 2007 and -0.97 in October 2007), suggesting a temporary hedge-like behavior. However, this pattern was short-lived: from early 2008 onwards, correlations turned positive and remained so through 2009, with values often above 0.5. On average, the correlation between art and equities over the whole period was close to zero (0.08), confirming the absence of a systematic safe haven property.

Gold, traditionally considered the canonical safe haven, did not provide unambiguous protection either. Its average correlation with equities was also close to zero (0.02), although it reached negative extremes at specific points (-0.80 in January 2009), reflecting episodes of flight-to-quality. The relationship between art and gold was moderately positive (0.35 on average), with art failing to mimic gold’s protective behavior during the sharpest phases of equity market stress.

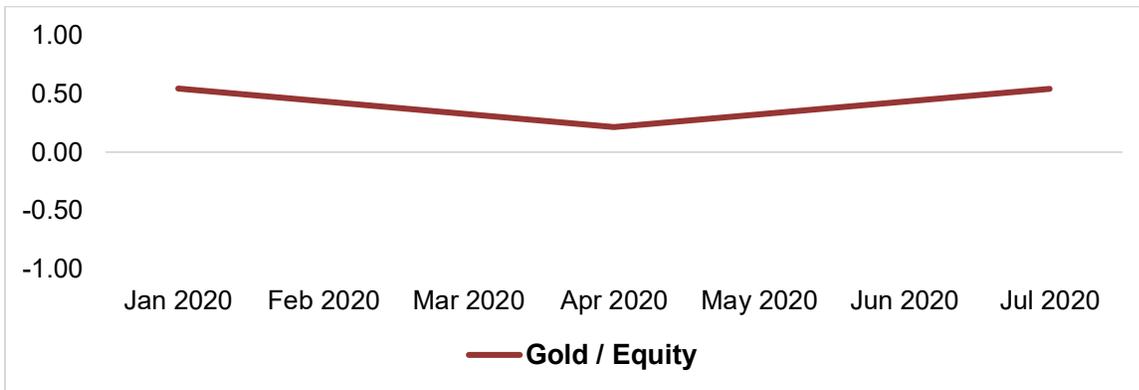
Overall, the evidence from the GFC suggests that neither art nor gold consistently acted as a safe haven across the entire episode. While gold offered protection in certain windows, art only briefly displayed negative correlations before reverting to a neutral or positive relationship with equities.

Covid-19

Graph 14



Graph 15



Graph 16

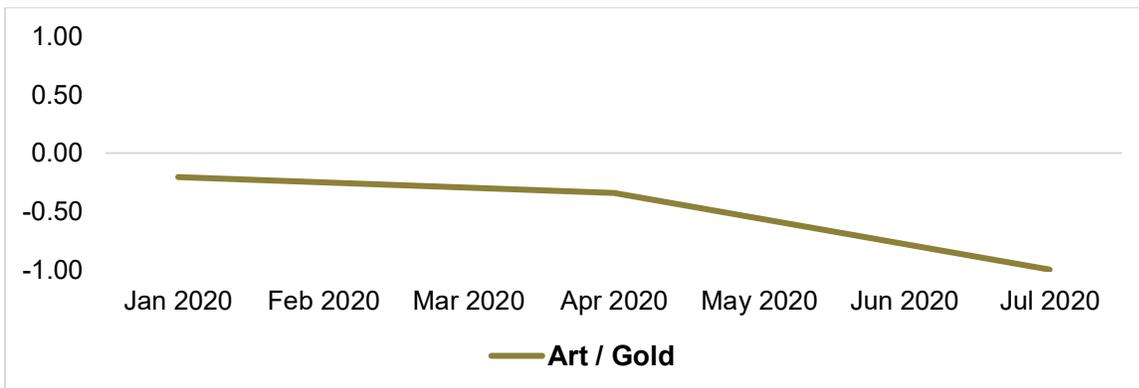


Table 4 - Average Rolling Correlation

| | Art / Equity | Gold / Equity | Art / Gold |
|----------------|---------------------|----------------------|-------------------|
| Average | 0.28 | 0.43 | -0.52 |

Graphs 14/15/16 present the rolling correlations (12-month window) between art, equities, and gold during the Covid-19 shock, while Table 7/8 in the Appendix reports the detailed quarterly values and realized returns.

At the onset of the crisis, in Q1 2020, both art and equities recorded sharp losses (-10% each), whereas gold posted a positive return (+6%). This highlights gold's traditional role as a flight-to-quality asset in the face of extreme uncertainty. The correlation analysis, however, shows that in the first months art and equities moved in the same direction, with correlations strongly positive (0.67 in January and 0.73 in April 2020). Only in Q2, when markets began to stabilize, did art temporarily detach from equities (-0.56 in July 2020). On average, the correlation between art and equities over the crisis period remained moderately positive (0.28), suggesting that art did not function as a safe haven.

Gold's behavior was more in line with its canonical role. Its average correlation with equities was positive (0.43), but this masks its strong performance during the sharpest downturn: while equity markets collapsed in Q1 2020, gold delivered positive returns and attracted safe-haven flows. The subsequent recovery phase, driven by unprecedented monetary and fiscal support, explains why gold and equities later moved in the same direction, diluting its average safe-haven effect.

The correlation between art and gold was negative (-0.52 on average), reflecting divergent behavior: while gold surged in the early months of the crisis, art initially fell with equities and only recovered later in the year. This divergence underscores the fact that, unlike gold, art does not systematically attract demand during periods of financial stress.

In sum, the Covid-19 shock confirmed gold's safe haven status, at least in the immediate phase of market collapse, while art acted more as a delayed diversifier than as a protective asset.

2.6 Conclusions on Art as a Safe Haven

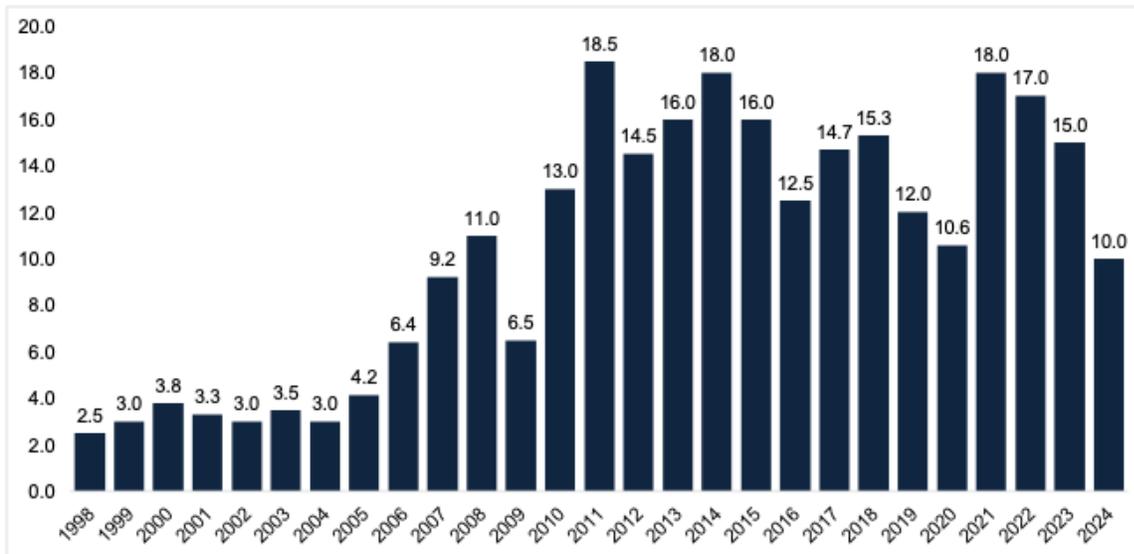
The crisis-specific analysis makes clear that art cannot be classified as a safe haven asset. Across the three major episodes considered - the dot-com bubble, the Global Financial Crisis, and the

Covid-19 shock - art failed to display the consistent negative or near-zero correlations with equities that define a safe haven according to Baur and Lucey (2010, *Is Gold a Hedge or a Safe Haven?*). While occasional periods of negative correlation were observed, these episodes proved short-lived and lacked persistence. By contrast, gold confirmed its role as the canonical safe haven, particularly during the initial phases of market turmoil, even though its performance was not uniformly negative in correlation terms across the full duration of each crisis. Art, on the other hand, behaved primarily as a decorrelated asset: it maintained independence from financial markets on average but did not attract capital inflows in times of systemic stress. This conclusion underscores that art's contribution to portfolio construction lies in its diversification potential rather than in any safe haven property. Its value is shaped by idiosyncratic demand, wealth effects, and market sentiment, which makes it unsuitable as a defensive asset in crisis periods but still relevant as a complement to traditional investments.

2.7 Auction Market Dynamics: Revenues and Liquidity Cycles

The evidence presented so far confirms that art does not behave as a safe haven in times of financial turmoil, but rather as a diversifier with unstable correlations. Given these findings, it becomes essential to complement the correlation analysis with an investigation of the underlying dynamics that drive the art market itself. One of the most direct indicators of market sentiment in this context is provided by auction revenues, which reflect both the number of works sold and the average prices achieved. Unlike price indices, auction turnover captures liquidity conditions and investor confidence, making it particularly informative during periods of expansion and contraction. The following section therefore examines global auction revenues over the past two decades in order to assess how shifts in sentiment and liquidity cycles have influenced the evolution of the art market.

Graph 17 - Global Auction Turnover (\$b)³



Graph 17 shows the evolution of global auction turnover for fine art between 1998 and 2024. The series highlights the cyclical nature of the market, with sharp contractions during financial crises and rapid recoveries in expansionary phases. The sector experienced strong growth from the early 2000s, peaking at 18.5 billion USD in 2011, before undergoing alternating phases of slowdown and renewed expansion, with further peaks in 2014 and 2021. By contrast, severe downturns are visible in 2009 (6.5 billion USD, following the Global Financial Crisis), 2020 (10.6 billion USD, during the Covid-19 shock), and 2024 (10.0 billion USD, reflecting the most recent contraction).

This evidence shows that while art prices often appear decorrelated from equity markets, the sector as a whole is highly sensitive to global liquidity conditions. In times of financial stress, investors become more cautious, transaction volumes decline, and auction houses sell fewer works, leading to lower revenues. As a result, even if individual masterpieces may not lose value, the overall market becomes less liquid and therefore less attractive from an investment perspective.

The distinction is crucial: decorrelation at the price level does not imply that art functions as a safe haven. Instead, the auction turnover dynamics underline its vulnerability to shifts in wealth and

³ Source: Artprice Annual Market Reports

sentiment, confirming that art should be understood primarily as a cyclical market dependent on global liquidity, rather than as a defensive asset in times of crisis.

Conclusion - Can Art Function as a Diversifier or a Safe Haven?

Consistently low correlations with other financial asset classes suggest that art possesses one of the most sought-after characteristics in wealth allocation: independence from the broader financial markets. This decorrelation underpins its potential role as a portfolio diversifier, offering investors a way to reduce exposure to systematic risks without necessarily sacrificing long-term value.

At the same time, the analysis shows that art's resilience is conditional. During periods of systemic financial crises, the tendency to invest in art tends to weaken, as overall market sentiment deteriorates and liquidity contracts. Even if individual artworks may retain value, aggregate auction turnover declines significantly, demonstrating that art demand is highly sensitive to global wealth conditions and investor confidence. This dynamic reveals the dual nature of art: while returns appear detached from traditional markets in normal times, the sector as a whole remains cyclical and dependent on broader liquidity cycles.

This tendency also emerges when analyzing art as a potential safe haven. Across the major crises considered - the dot-com crash, the Global Financial Crisis, and the Covid-19 shock - no clear or consistent pattern of protection was observed. While certain blue-chip works occasionally displayed partial resilience, the overall market did not attract capital inflows in the way gold traditionally does. Instead, art's role is better understood as that of a diversifier: an asset class that, although unable to safeguard wealth during systemic shocks, can still provide long-term benefits through decorrelation and idiosyncratic value drivers.

Part II

Introduction - Art as an Asset Class

The empirical evidence presented in Part I has provided a clear picture of the financial dynamics of art. While art shows relatively low correlation with equities and bonds, and therefore can act as a hedge in certain market conditions, the evidence against its role as a genuine safe haven is overwhelming. In periods of financial distress, art prices tend to contract in parallel with broader markets, undermining the idea that it can consistently preserve value when investors need protection the most. In other words, art may diversify, but it does not shield. From a strictly financial standpoint, this makes its status as a reliable asset class questionable. Unlike equities, bonds, or even gold, art fails to offer the liquidity, transparency, and resilience that would justify its inclusion as a core component of institutional portfolios.

This ambiguity opens a fundamental question that lies at the heart of Part II: if art does not behave like a traditional asset class, should it really be considered as one? The rise of art funds, fractional ownership platforms, and lending mechanisms all suggest an ongoing effort to financialize art. At the same time, collectors, galleries, and advisors emphasize dimensions that go beyond returns: aesthetic pleasure, status, and cultural capital. Part II therefore shifts the focus from quantitative evidence to qualitative insights, exploring the structural features of the art market, the motivations of its investors, and the growing attempt to package art as a financial product. The central question becomes: is art truly evolving into an asset class, or does it remain first and foremost a source of aesthetic enjoyment - a luxury good disguised as investment?

Theoretical Background

3.1 Market Characteristics

The art market is defined by structural features that make it profoundly different from traditional financial markets. A first crucial element is illiquidity. Each artwork is unique, transactions are relatively infrequent, and the absence of standardized trading mechanisms makes liquidation difficult without significant price concessions. As Mandel (2009, *Art as an Investment and the Illiquidity Premium*) demonstrates, these frictions explain why risk premia on art are often negligible or even negative, as investors accept lower returns in exchange for the aesthetic and social utility of ownership. Li, Ma and Renneboog (2022, *The Value of Provenance in the Art Market*) similarly emphasize that art should be understood as “unregulated, illiquid, and opaque”, which underscores its divergence from conventional asset classes.

A second defining feature is the opacity of information. While auction results are publicly available, they only capture part of the picture: nearly half of global sales occur privately through galleries, fairs, and dealers, where prices are rarely disclosed. As a result, market indices such as the Mei Moses Art Index or the Artprice Global Index are constructed on partial datasets, which raises concerns of selection bias (Mei & Moses, 2002, *Art as an Investment and the Underperformance of Masterpieces*). Etro and Stepanova (2019, *The Economics of Art Auctions*) stress that indices based on repeat-sales regressions tend to overestimate performance, since they exclude unsold works and systematically favor objects that have retained or increased in value. This incomplete transparency contributes to strong asymmetries between insiders and outsiders. As Stephen Dubner - journalist and co-author of the best-selling book *Freakonomics* (2005) - vividly remarked, the art market resembles “a magnified case of what economists call a tournament model, which is essentially a pyramid. At the very top, the rewards are outsized. And then there’s a very, very large base of the pyramid, where everybody would like to climb higher - but the rules of climbing are not clear. There’s a great deal of information asymmetry, which can be frustrating, and price doesn’t function the way it does in most markets. The normal laws of supply and demand don’t apply” (Dubner, 2021, *The Art Newspaper*).

The art market is also largely unregulated, which differentiates it from financial markets overseen by centralized authorities. The absence of regulation has historically facilitated speculative practices such as deliberate price manipulation and “chandelier bidding,” - a practice by which

auctioneers announce fictitious bids at the beginning of the sale in order to up the minimum price agreed with the seller. Goetzmann, Renneboog and Spaenjers (2009, *Art and Money*) argue that the lack of oversight remains one of the principal obstacles to institutional recognition of art as a legitimate asset class.

Another structural element is the magnitude of transaction costs. Auction houses charge sellers' fees ranging from 2% to 20%, while buyers pay premiums often between 15% and 25% of the hammer price. Renneboog and Spaenjers (2013, *Buying Beauty: On Prices and Returns in the Art Market*) highlight how such costs severely erode net returns and stand in sharp contrast with the minimal spreads and commissions typical of financial markets.

Finally, the market is marked by segmentation and concentration. Geographically, the United States, the United Kingdom, and China dominate global sales, accounting together for the majority of market turnover. In terms of categories, a small number of "blue-chip" artists absorb a disproportionate share of global demand. This superstar effect creates a winner-take-all dynamic, whereby record-breaking sales by a handful of names can heavily sway aggregate indices (Pesando, 1993, *Art as an Investment: The Market for Modern Prints*). More recent analyses confirm that the top 0.1% of artists by market value capture an overwhelming share of turnover, while the vast majority remain marginal in financial terms (Renneboog & Spaenjers, 2013).

Fundamentally, these structural features - illiquidity, opacity, lack of regulation, high transaction costs, and concentration - highlight why art resists classification as a conventional financial asset class. At the same time, these very inefficiencies create opportunities for insiders who possess superior knowledge, networks, and experience. The asymmetry of information means that collectors and investors with privileged access, potentially through long-term relationships with galleries, advisory firms, or auction specialists - are better positioned to identify undervalued works, secure access to sought-after pieces, and avoid costly mistakes. In this sense, the art market rewards expertise and reputation, reinforcing its nature as a domain where cultural capital and social ties translate directly into financial advantage.

3.2 Historical Behavior and Characteristics

The history of the art market since the 1980s has been characterized by strong cyclical dynamics, alternating phases of euphoria with abrupt contractions, often correlated with cases of macro-economic shocks, though typically responding after some time. The late 1980s boom was fueled by speculative demand and the entry of Japanese investors into the Impressionist and Modern segment. Prices reached unprecedented peaks by 1989, but the market collapsed in 1990-91, when overall sales contracted by 25-50% depending on the sub-class. The downturn was largely triggered by the bursting of the Japanese asset bubble: during the late 1980s, Japanese collectors had aggressively bid up prices for Impressionist and Modern masters, treating art as both a luxury good and a speculative investment. When Japan's financial markets crashed in early 1990, demand evaporated almost overnight. Auction houses were left with an unprecedented number of unsold works, and Contemporary art suffered a dramatic correction, forcing many galleries to close. The contraction was further reinforced by the global recession of the early 1990s, and according to historical accounts, prices did not recover their pre-crash levels until the late 1990s. During the 1990s, the market stabilized at lower levels, supported by renewed interest in Modern art. Yet the dot-com crisis of 2000-2003 led to another sharp decline, with global auction revenues falling by around 36% (Etro & Stepanova, 2019, *The Economics of Art Auctions*).

From 2003 to 2007, the market entered a new expansionary phase, driven by global economic growth and new wealth from emerging economies. Auction records were repeatedly broken, with Post-War and Contemporary art becoming the leading segment. However, the 2008-09 global financial crisis abruptly ended this boom: art market indices dropped by about 40%, and certain speculative artists, such as Damien Hirst, saw their valuations decline by over 90% in a single year. Nevertheless, this downturn was short-lived, and by 2010 the market had already begun to recover.

The 2010s marked a new period of consolidation. In 2011, global auction revenues reached an all-time high, and high-profile private transactions, such as the 2015 sale of Gauguin's "*Nafea Faa Ipoipo*" for approximately USD 300 million, confirmed the resilience of the high-end market. During this decade, China emerged as the second largest art market worldwide, occasionally surpassing the United Kingdom in turnover (McAndrew, 2021, *UBS Art Market Report*).

The COVID-19 pandemic in 2020 produced another severe shock. Global sales declined by 22% to USD 50.1 billion, the steepest contraction since the Great Recession (McAndrew, 2021). Yet the crisis also accelerated digitalization: online sales doubled relative to 2019 and played a crucial role in sustaining liquidity. In 2021, turnover rebounded strongly to USD 65.1 billion (+31% year-on-year), and in 2022 the market reached a new record of USD 67.8 billion. More recently, 2023-24 saw a mild slowdown, with global sales estimated at around USD 65 billion, reflecting a correction in the ultra-high-end segment (Art Basel & UBS, 2023). These cyclical patterns are clearly visible in auction revenue data presented in Part I. As shown in Graph 17, sharp downturns in 2008-09, and 2020 were followed by rapid recoveries, highlighting the market's strong dependence on global liquidity and the wealth of high-net-worth individuals.

Another distinctive feature of the art market's historical trajectory is the superstar effect. A very small group of artists account for a disproportionate share of turnover. In 2014, for instance, the top ten artists generated USD 3.1 billion in sales, equivalent to nearly 20% of global auction value (Li, Ma & Renneboog, 2022, *The Value of Provenance in the Art Market*). This winner-take-all dynamic amplifies aggregate volatility, as blockbuster sales can significantly distort market indices.

Overall, the evidence confirms that the art market is cyclical, volatile, highly concentrated, and dependent on wealth effects. While diversification benefits may exist, the historical record shows that art prices are vulnerable during systemic crises and rebound only when broader financial conditions improve.

3.3 Classification of Sub-Asset Classes

The art market is not a single, uniform entity but rather a constellation of heterogeneous sub-segments, each characterized by specific risk-return profiles, liquidity conditions, and collector bases. Understanding these differences is essential for any attempt to evaluate art as a financial asset class. Academic research confirms that returns and volatility differ significantly across categories, reflecting structural, cultural, and behavioral factors (Stepanova & Etro, 2021; Renneboog & Spaenjers, 2013).

Old Masters

This category comprises works created from the Renaissance through the eighteenth century.

Examples include Raphael, Rembrandt, and Canaletto. These works are scarce, with most masterpieces already held by museums or private foundations, which drastically limits supply. As a result, liquidity is low, with only a small number of transactions occurring annually at major auctions. Historically, Old Masters have produced the lowest financial returns among all major categories, though volatility is relatively low (Stepanova & Etro, 2021, *Art Market Returns*). Demand tends to be stable but is primarily driven by conservative collectors, often in Europe, and has declined among younger generations of high-net-worth buyers who gravitate toward Contemporary art. The limited growth prospects of this segment are also linked to its reduced cultural visibility: Old Masters are rarely featured in the evening sales of New York and London, and are less present in art fairs, which reduces their potential for speculative momentum.

Impressionist & Modern Art

This segment spans the mid-nineteenth to mid-twentieth century and includes Monet, Van Gogh, Picasso, Modigliani, and others. It has long been considered the “blue-chip” of the art market. Works in this category are consistently present in international evening sales and often serve as a *global currency* in the art world. Financially, the segment delivers intermediate returns: it experienced dramatic appreciation during the late 1980s and the mid-2000s, but price increases have generally been more moderate than in the Contemporary sector. The risk profile is also more balanced: while prices can fluctuate in response to global liquidity cycles, they tend to preserve value better in downturns compared to speculative segments. Liquidity is robust at the top end of the market - Picasso, Monet, or Modigliani are regularly traded at Christie’s or Sotheby’s - but weaker for secondary names. The segment remains attractive to collectors seeking cultural prestige combined with relatively predictable value retention.

Post-War & Contemporary Art

This is by far the largest and most dynamic segment of the global art market, spanning artists from Rothko and Warhol to living creators like Yayoi Kusama, Damien Hirst, or Mark Bradford. Over the last twenty years, it has produced the highest average returns of any category (Stepanova & Etro, 2021), but also the highest volatility. Its trajectory is marked by spectacular booms and equally dramatic corrections: Damien Hirst’s market collapsed by -93% in 2009, while Basquiat’s works skyrocketed in value in the 2010s, culminating in a record \$110.5 million sale in 2017. Liquidity is paradoxical: “blue-chip” names trade frequently and at high volumes,

while mid-tier artists may struggle to resell. The segment is also dominated by the superstar effect, with a handful of artists driving disproportionate shares of turnover. According to Artnet (2014), the top ten artists accounted for nearly 20% of global auction value. Speculative behavior is frequent, particularly around emerging artists under 40, who can experience exponential price growth fueled by art fairs and galleries, only to suffer rapid corrections when trends shift.

Prints and Editions

This segment includes works in multiple copies such as lithographs, screenprints, and photographs, as well as newer formats like digital editions. Prints provide a more accessible entry point into the art market, enabling investors to acquire works by major names at relatively low prices. Financially, returns are modest and appreciation tends to be slow, but volatility is limited. The liquidity of prints is relatively high, given their standardized nature and broader buyer base. Studies on Picasso and Warhol prints confirm that they typically appreciate by only a few percentage points annually (Charlin, 2017), but their stability and accessibility make them attractive for new collectors or investors.

Emerging and Ultra-Contemporary Artists

This category is defined by artists under 40 or with recently established reputations. It has become the most speculative segment of the art market, offering extremely high short-term return potential alongside significant risk. The NFT boom of 2021 is an extreme example: works by digital artist Beeple sold for \$69 million at Christie's, only to experience sharp value corrections soon after. More traditional emerging artists, such as Amoako Bofofo or Christina Quarles, have also seen prices surge rapidly thanks to aggressive gallery promotion and art fair exposure. However, these markets are prone to reversals if institutional support (museums, curators, collectors) does not materialize. Wealth managers typically caution against overexposure to this segment, emphasizing its speculative nature (UBS & Art Basel, 2023).

Sculpture

Sculpture represents a distinctive yet more complex sub-segment of the art market. Works by established masters such as Alberto Giacometti, Arnaldo Pomodoro, or Igor Mitoraj have demonstrated strong value retention, with landmark results such as Giacometti's *L'Homme qui marche I* selling for USD 104 million at Sotheby's in 2010. However, compared to paintings,

sculpture faces significant structural constraints: transportation, storage, and conservation are more demanding, while display requires appropriate space. These factors reduce liquidity and restrict the potential buyer base. As a result, the market for sculpture is polarized: blue-chip names enjoy stable demand and achieve record-breaking sales, while mid-tier and contemporary sculptors are characterized by lower liquidity and higher volatility, often depending heavily on institutional support and temporary trends.

Photography

Since the 1990s, photography has emerged as a recognized and increasingly international category within the art market, whose prominence has been further reinforced by the growing influence of fashion in recent decades. Iconic figures such as Helmut Newton, Cindy Sherman, and Andreas Gursky have contributed to its cultural legitimacy, and auction records have gradually elevated the medium to the top tier of collecting. The current record price for a photograph is held by Man Ray's *Le Violon d'Ingres* (1924), which sold for USD 12.4 million at Christie's New York in May 2022. One of photography's main advantages is accessibility: prices are generally lower than for paintings, and the possibility of multiple prints broadens the collector base. At the same time, reproducibility raises questions about uniqueness and long-term value, which partly explains why this segment, despite its growth, remains less established than painting. Financially, photography offers moderate returns and relatively stable liquidity, sustained by its strong presence in auctions, galleries, and art fairs. Its dual nature - as both a reproducible medium and a high-value collectible - makes it an important but still hybrid segment in the hierarchy of sub-asset classes

Comparative analysis

Taken together, the segmentation of the art market reveals a nuanced hierarchy of risk, return, and liquidity. Old Masters continue to provide stability and cultural prestige, but their financial performance remains modest, with slow appreciation and limited demand. Impressionist & Modern art offers intermediate returns and strong liquidity, functioning historically as the "blue-chip" core of the market. Post-War & Contemporary art dominates in both turnover and volatility, combining the highest return potential with exposure to speculative cycles. Prints and Editions serve as an accessible entry point for new buyers, offering lower financial risk and relatively higher liquidity. Emerging and ultra-contemporary art embodies the most extreme risk-reward profile,

where prices can skyrocket but are equally vulnerable to sharp corrections. Sculpture illustrates a polarized market: established masters achieve record-breaking results, while mid-tier sculptors struggle with liquidity constraints. Photography, by contrast, combines accessibility with growing cultural legitimacy, yet faces persistent questions about uniqueness and long-term value. Overall, the segmentation mirrors financial markets by offering differentiated profiles of risk and return, while structural illiquidity, information asymmetries, and high transaction costs continue to constrain its efficiency as an asset class.

Market-status classification: Blue-chip, Mid-market, Emerging

Beyond stylistic and historical categories, artists are also classified by their market status. Wealth managers and advisors frequently distinguish between blue-chip, mid-market, and emerging artists, using language borrowed from financial markets. Blue-chip artists are recognized globally, traded frequently, and tend to hold value even in downturns. Mid-market artists may be respected but less liquid, while emerging artists concentrate the highest volatility and speculative potential.

Crossing these two dimensions - temporal classification and market status - produces a two-dimensional framework that captures both historical positioning and current market relevance.

| <i>Category</i> | Blue-chip | Mid-market | Emerging |
|---------------------|----------------------------|---|-----------------------------|
| <i>Old Masters</i> | Rembrandt, Caravaggio | Lesser-known Renaissance painters | N/A |
| <i>Modern</i> | Picasso, Monet, Modigliani | Secondary Impressionists | N/A |
| <i>Post-War</i> | Warhol, Basquiat, Koons | Post-War artists with limited recognition | Overlooked Post-War artists |
| <i>Contemporary</i> | Hirst, Richter, Kusama | Anselm Kiefer | Amoako Boafo, Beppe |
| <i>Sculpture</i> | Giacometti, Moore | Igor Mitoraj | Jago |

| | | | |
|--------------------|----------------------------------|---------------|----------------------------------|
| <i>Photography</i> | Andreas Gursky, Cindy Sherman | Helmut Newton | Tyler Mitchell, Petra Collins |
|--------------------|----------------------------------|---------------|----------------------------------|

This classification highlights how blue-chip artists across categories function as relatively secure stores of value, while mid-market artists represent a broader but less liquid segment, and emerging artists embody both opportunity and significant risk. The framework also illustrates how the language of the art world has progressively converged with that of finance, reflecting ongoing attempts to frame art as an investable asset class while recognizing the deep heterogeneity that persists within its sub-markets (UBS & Art Basel, 2023, Art Market Report).

3.4 Consumer Behavior

Investment in art is deeply influenced by the emotional and behavioral dimensions of decision-making. Unlike traditional asset classes, art provides non-pecuniary benefits - such as aesthetic pleasure and social prestige - that strongly shape the motivations of collectors and investors. This dual nature, simultaneously cultural and financial, explains why art is often described as a “passion investment”.

A first element is the coexistence of mixed motivations. While financial considerations play a role, surveys consistently show that passion and personal enjoyment dominate. A Barclays study on high-net-worth individuals found that 98% of collectors acknowledged emotional motivations in holding art and collectibles. Specifically, 82% stated they owned these assets for the enjoyment they bring, 76% for heritage and legacy reasons, and 59% for social motivations such as prestige or philanthropy. Only 34% declared financial return as their primary motivation - highlighting the potential difficulties that could arise for platforms like Masterworks (more deeply analyzed in the following chapters) in finding investors (Barclays, 2012, *Wealth Insights*). This evidence supports the idea that collectors often “buy because they love the artwork,” with investment considerations emerging only after acquisition. Behavioral finance scholar Meir Statman has famously noted that “if someone buys a painting for \$80 million, the utilitarian value is no greater than a \$20 poster - the rest of the benefits are expressive and emotional” (Statman, 2019, *Finance for Normal People*).

The notion of an aesthetic dividend further clarifies this logic. Ownership of art generates a form of non-monetary return, consisting of both the pleasure of contemplation and the prestige of

possession. In economic terms, art offers a “utility dividend” that increases with the perceived value of the object: the higher the value, the greater the sense of distinction and satisfaction it provides. This mechanism echoes Thorstein Veblen’s concept of conspicuous consumption, whereby luxury goods serve as markers of social status. Empirical models confirm this intuition: Mandel (2009, *Art as an Investment and the Illiquidity Premium*) shows that, once ownership utility is incorporated, the risk premium of art turns out to be low or even negative. In practice, investors are willing to accept lower financial returns because the ownership of art “pays” in psychological gratification.

The status dimension is equally important. Collecting art is not only a financial act but also a cultural and social one. Works of art act as status symbols, signalling wealth, cultural sophistication, and belonging to an elite. Surveys consistently report that collectors derive utility not only from private enjoyment but also from the visibility and recognition that art ownership confers. This explains the high prices paid for iconic, instantly recognizable works - such as Warhol’s Marilyns or Basquiat’s skull paintings - where the social desirability of the object feeds into its economic value. As Dubner (2021, *The Art Newspaper*) observed, the art market functions like a pyramid-shaped tournament in which prestige and visibility amplify the rewards at the top - often explaining why blue chip artists are quite often the most remunerative as far as financial returns are concerned. In this setting, auction dynamics become highly performative: bidding wars are not merely about intrinsic value but about winning a trophy and asserting one’s status as a top collector.

The prevalence of behavioral biases further differentiates art investment from other asset classes. Collectors are particularly prone to affect bias: when emotionally attached to a work, they perceive it as less risky and are willing to pay above its fair value. The endowment effect also plays a role: collectors are reluctant to sell below the purchase price, and emotional attachment increases over time, raising their internal reservation price. A Barclays survey reported that American collectors require, on average, a 62% price increase in the first year after purchase before considering a resale. Similarly, loss aversion explains why supply contracts during downturns: few owners are willing to part with works at depressed prices, preferring to enjoy them privately rather than realize a financial loss. Auction theory also illustrates the winner’s curse: in competitive settings, the

winning bidder is often the one who overestimated the work's value. When emotional rivalry is added to the mix, the risk of overpaying is magnified.

These behavioral patterns blur the line between collectors and investors. While pure investors attempt to exploit market trends for financial gain, traditional collectors purchase with long horizons, often intending to pass works down as inheritance. In practice, most actors are hybrids, the so-called "investor-collectors." Yet differences emerge in downturns: collectors tend to hold onto works despite falling prices, whereas investors may liquidate. This duality contributes to the peculiar rigidity of supply during recessions, as many owners prefer to retain their assets and the non-monetary benefits they confer.

Finally, the art market is characterized by networks and insider dynamics. Access to important works in galleries and fairs is often mediated by trust and long-standing relationships. Experienced collectors secure privileged opportunities through ties with dealers and advisors, while newcomers without such connections face higher risks of mispricing, dubious attributions, or inferior works. This reinforces the asymmetry between insiders and outsiders that already defines the broader market.

In conclusion, investor behavior in art is guided more by emotional and social drivers than by financial rationality alone. This does not mean that returns are irrelevant - on the contrary, performance has gained importance in recent years - but art is unique in offering consumable utility during ownership. As highlighted in the UBS & Art Basel Art Market Report (2021), during the Covid-19 crisis 59% of global collectors reported an increased willingness to buy art, motivated not only by financial expectations but also by passion and the desire to support artists. This passion-driven resilience makes the art market less predictable through traditional financial models alone, requiring an integrated approach that accounts for psychology, status, and the cultural meaning of ownership.

3.5 Investment Platforms

The financialization of the art market has accelerated over the past two decades, leading to the rise of structured vehicles and technological platforms that aim to transform art into an investable asset class. While traditional collecting remains driven by passion and connoisseurship, new instruments

such as art funds, fractional ownership platforms, art-secured lending, and blockchain-based solutions seek to provide liquidity, diversification, and broader accessibility. Each of these channels reflects attempts to align art with financial market logics, yet each is constrained by the structural illiquidity, opacity, and heterogeneity that distinguish art from conventional securities.

Art investment funds were among the first formalized vehicles. Their model resembles that of private equity: investors commit capital for a fixed term, a professional team acquires artworks, and proceeds are distributed after resale. The most notable early experiment was the Fine Art Fund Group, launched in London in 2004, which raised multiple closed-end funds under the leadership of Philip Hoffman, a former Christie's executive. Other key players include Artemundi, founded in 1989, which has managed dozens of funds totaling over USD 100 million, and Anthea Art Investments in Luxembourg. Performance has been mixed: Artemundi reported an 85% net return in one five-year vehicle, while other funds underperformed or closed prematurely. According to UBS & Art Basel (2023), the limited scalability, high transaction costs, and long holding periods have reduced investor appetite for art funds. By 2016 the Fine Art Fund rebranded into The Fine Art Group, shifting from fund management to advisory services, reflecting broader skepticism in the model. Academic critiques highlight fundamental limitations: high fees (typically 1.5% annual plus 20% carry), difficulties in valuation, and the risk that unsold or illiquid works distort performance (Spiegler, 2025). In short, while art funds institutionalized art investing, they remained largely accessible only to ultra-high-net-worth individuals and have not achieved widespread traction.

More recently, fractional ownership platforms have become the most visible innovation in art investment. The US-based Masterworks, founded in 2017, purchases blue-chip works by artists such as Warhol, Monet, or Basquiat, registering them as securities with the SEC, and sells shares to investors starting from as little as \$20. By late 2023, Masterworks reported over 880,000 users and nearly USD 941 million in assets under management⁴, positioning itself as the largest art investment platform globally. Reported realized returns vary widely: some sales generated modest annualized returns of 4-5%, while others, such as a Cecily Brown resale, yielded over 70% net gains. In Europe, Mintus became the first FCA-authorized fractional platform in the UK, targeting qualified investors, while Artemundi launched "Splits" in the EU. Deloitte's 2023 Art & Finance

⁴ Source: Masterworks (company disclosures, 2023)

Report estimated that global assets under management in fractional art surpassed USD 1 billion and highlighted that younger collectors are particularly attracted: 50% of next-generation high-net-worth individuals expressed strong interest in fractional art ownership, compared to just 14% of older peers. Nevertheless, challenges remain. Liquidity is limited, as shares can only be traded on internal bulletin boards, often with imbalances between sellers and buyers. Fees (around 1.5% annual plus 20% carry) are significant, and investors do not enjoy the aesthetic dividend of physical possession. Still, fractionalization has dramatically lowered barriers to entry and is arguably the first channel to democratize access to blue-chip art.

A more established but less publicized channel is art-secured lending, whereby artworks are pledged as collateral for credit lines. This practice has grown steadily since the 2000s, with major private banks (UBS, Citi, JPMorgan) and boutique lenders (Athena Art Finance, later acquired by Yieldstreet) building art finance teams. Loans typically cover 40-50% of appraised value, with maturities of 6-24 months and interest rates ranging from mid-single digits to over 10%, depending on risk. The global art lending market was estimated at USD 29-34 billion in 2023⁵, up 11% from 2022, with revenues for lenders reaching USD 2.2 billion (Deloitte, 2023). According to UBS & Art Basel (2023), 43% of surveyed collectors had used credit to acquire art, with wealthier clients leveraging up to 39% of their collection's value. In the US and UK, art lending is considered a mature segment, while in continental Europe and Asia it is expanding rapidly. In Italy, the practice remains nascent, governed by general pledge and loan rules rather than dedicated legislation. Some institutions - such as Intesa Sanpaolo Private Banking - have begun exploring art-backed credit, and legal experts note growing potential in a country with vast concentrations of private art (DWF Italy, 2022).

The most recent frontier is blockchain-based investment, spanning both non-fungible tokens (NFTs) and the tokenization of physical works. The NFT boom of 2021, epitomized by Beeple's *Everydays: The First 5000 Days* selling for \$69 million at Christie's, demonstrated the potential for digital-native art markets. Monthly NFT volumes surged fiftyfold within a year, before collapsing by over 90% by 2023. Despite the volatility, NFTs introduced new mechanisms such as automatic resale royalties and direct artist - collector engagement, attracting younger demographics. Beyond digital art, tokenization applies blockchain to fractionalize ownership of

⁵ Source: Deloitte Art & Finance Report (2023)

physical works. Early experiments include Maecenas' Warhol token sale (2018) and Particle's fractionalization of a Banksy painting (2021). Artemundi has integrated tokenization into its "Guernica V" fund, while platforms such as 10101.art and the Italian startup Art Rights offer tokenized co-ownership and blockchain-based authenticity certificates. According to Deloitte (2023), over 80% of young collectors believe blockchain will improve transparency and traceability in the art market. However, significant obstacles remain: regulatory uncertainty (though progress is visible under the EU's MiCA framework), the need for custodial structures to link tokens with legal ownership, and the persistence of illiquidity-trading tokens does not solve the underlying difficulty of finding buyers for high-value art.

In comparative perspective, these channels reveal differentiated risk-return and accessibility profiles. Art funds target double-digit returns but are illiquid and exclusive. Fractional platforms offer unprecedented accessibility, with entry points under USD 1,000, but inherit art's volatility and high fees. Art lending is conservative, collateralized, and increasingly institutionalized, serving mainly existing collectors. Blockchain solutions are highly speculative but technologically innovative, with potential to reshape ownership models over the next decade. Across all channels, structural frictions remain: information asymmetries, high transaction costs, and limited secondary liquidity constrain efficiency. Nonetheless, the expansion of financial instruments demonstrates the art market's increasing convergence with the language and infrastructure of finance, even as its dual nature, simultaneously cultural and financial, continues to set it apart from conventional asset classes (UBS & Art Basel, 2023; Deloitte, 2023).

Empirical Analysis

Balancing Pleasure and Portfolio - An Interview with Alice Cavagna, Art Advisor

The empirical analysis presented in this chapter builds on the theoretical framework developed in Part II and aims to investigate how art is perceived and used as an investment in practice. To achieve this, a dual methodology was adopted. On the one hand, quantitative evidence was collected from auction data, industry reports (UBS & Art Basel, Deloitte, Artprice), and academic contributions analyzing historical returns, volatility, and correlations. On the other hand, qualitative evidence was integrated through the testimony of Alice Cavagna, an independent art advisor, providing first-hand insights into the motivations of collectors, acquisition strategies, and the growing role of financialization platforms.

This mixed-methods approach is intended to capture both the measurable dynamics of the market and the subjective, behavioral dimensions that shape investment decisions in art. While quantitative data allow us to compare art with other asset classes in terms of performance and risk, qualitative perspectives highlight the cultural, emotional, and social factors that cannot be fully explained through econometric models. By combining these two sources of evidence, the analysis aims to provide a comprehensive picture of investor behavior, the channels through which art is financialized, and its positioning relative to traditional investments - ultimately trying to understand whether art can be considered as a proper financial asset or is yet to reach that status.

Understanding the motivations behind art investment is essential to assessing whether art can truly be considered an asset class. Unlike equities or bonds, the decision to acquire artworks is rarely based on financial considerations alone. Instead, art combines a dual logic: on the one hand, it can function as a store of value, a diversification tool, or a speculative opportunity; on the other, it provides emotional gratification, cultural prestige, and symbolic capital. This hybrid nature produces a wide variety of investor types, ranging from passionate collectors to professionalized institutions, and increasingly a middle category of so-called “investor-collectors” who combine financial awareness with aesthetic sensibility.

The empirical evidence suggests that motivations are heterogeneous but consistently hybrid. Survey data confirm that passion and enjoyment remain dominant drivers, with financial return ranking lower in priority. At the same time, the expansion of art funds, fractional ownership platforms, and lending mechanisms demonstrates a growing attempt to financialize the market and

to frame art in terms familiar to wealth managers. Finally, the prevalence of behavioral biases, information asymmetries, and even deliberate market manipulation reveals how motivations interact with inefficiencies that are structurally embedded in the art ecosystem.

Ideally, the goal of this section is to integrate multiple levels of analysis. First, it examines private collectors, for whom art represents both passion and patrimony. Second, it explores the hybrid figure of the investor-collector, whose strategies oscillate between high-risk emerging artists and the relative security of established names. The discussion then turns to behavioral dynamics and structural inefficiencies - potential arbitrage in the market, asymmetry, and manipulation - that complicate the picture and reinforce the need for expertise.

4.1 Private Collectors: Passion vs. Portfolio

Theoretical Background

Throughout this thesis, it has been already heavily specified the dual role of art both as aesthetic pleasure and as financial asset. Academic literature and market reports have thoroughly analyzed this topic, with Statman (2019, Finance for Normal People) framing art as a part of the broader category of consumption utility., with investors potentially accepting lower returns because of the “joy” of ownership itself. As already mentioned in Paragraph 3.4 “Consumer Behavior”, 98% of high-net-worth individuals acknowledge emotional motivations in holding art and collectibles.

Empirical and Qualitative Analysis

The testimony of Alice Cavagna adds nuance to these dynamics. She notes that collectors rarely approach acquisitions with purely financial motives: “Very often they tell me: I want to buy a painting, but I would also like it to be an investment.” According to Cavagna, the aesthetic appeal of a work is almost always the starting point, but financial awareness quickly follows. Her role as advisor is to ensure that enthusiasm does not translate into imprudent acquisitions, by assessing provenance, market positioning, and timing. Transparency, she stresses, is essential: when a client chooses to buy purely for love - even at a premium - this must be clearly framed as a passion-driven acquisition, not as an investment. As she remarks, “it is better to say no nine times and yes once, rather than make a mistake,” underlining the importance of protecting clients from hype and impulsive decisions.

Conclusions

Private collectors exemplify the hybrid logic of art investment. On the one hand, passion, enjoyment, and prestige dominate their motivations, distinguishing art from conventional asset classes. On the other, financial considerations act as a filter that guides choices and ensures long-term coherence in building collections. The combination of quantitative surveys and qualitative testimony confirms that private demand is resilient, but also exposed to risks of overvaluation and speculative traps. Ultimately, private collectors sustain the art market precisely because their motivations cannot be reduced to financial rationality alone: they treat art simultaneously as cultural heritage, personal expression, and - apparently only secondarily - an alternative investment.

4.2 Classification of Works and Acquisition Strategies

Theoretical Background

One of the most widely discussed aspects of art investment concerns the classification of works by their expected risk-return profiles. Academic research shows that the market is highly segmented: blue-chip works by historically established artists are perceived as relatively secure, mid-market names occupy an intermediate position, and emerging artists offer the highest potential but also the greatest volatility (Renneboog & Spaenjers, 2013; Stepanova & Etro, 2021). In this context, Mei and Moses (2002) introduced the notion of “underperformance of masterpieces,” arguing that iconic works by leading artists often generate lower long-term returns compared to less celebrated pieces. Their explanation rests on the existence of a *status premium*: collectors are willing to pay disproportionately for cultural prestige, which compresses financial performance.

Empirical and Qualitative Analysis

Auction data partially confirm this segmentation. During expansionary periods, the strongest price growth has been recorded in post-war and contemporary segments, particularly among emerging artists promoted by fairs and galleries. However, downturns reveal the fragility of this trend: in 2008 - 09, the valuations of speculative contemporary names collapsed by up to 90%, while blue-chip works such as those by Picasso or Warhol retained more stable value and recovered more quickly (UBS & Art Basel, 2021). Mid-market artists, although less volatile, often suffer from weak liquidity, making resale difficult outside of top-tier auction houses. Editions and lithographs

occupy a peculiar position: their appreciation is modest but they provide accessibility and symbolic prestige, especially for collectors with limited budgets.

Alice Cavagna partly contrasts with the academic view. She disagrees with the notion that masterpieces underperform, emphasizing instead their function as anchors of stability: “Artists like Basquiat, Warhol, or Ruscha are certainties: they may go through downturns, but in the long run their value consolidates.” According to Cavagna, the real challenge is identifying which artists are destined to remain historically relevant, since this determines whether their works will preserve and grow in value. For her clients, strategies often oscillate between two poles: acquiring works by emerging artists - risky but potentially rewarding - or purchasing editions and lithographs by established names, which ensure prestige and lower downside risk. This duality illustrates how investor-collectors navigate between speculative growth opportunities and defensive acquisitions.

Conclusion

The classification of artworks by market status offers a practical framework for understanding acquisition strategies. While academic literature suggests that masterpieces may underperform due to overpricing, market evidence and practitioner insights highlight their stabilizing role in collections, providing long-term security. Mid-market artists occupy a less liquid but balanced space, and emerging names embody speculative dynamics with extreme outcomes. Editions and lithographs, finally, function as accessible entry points that combine symbolic value with limited appreciation. Investor-collectors move across these categories depending on their budget, taste, and risk tolerance, confirming the hybrid logic of art as both passion and portfolio component.

4.3 Market Distortions: from Behavioral Biases to Structural Inefficiencies

Theoretical Background

A central question in assessing the financial relevance of art is whether the market allows for arbitrage opportunities. In financial economics, arbitrage implies the ability to generate excess returns without additional risk, typically by exploiting mispricing or inefficiencies. In highly regulated and transparent markets, such opportunities are rare and rapidly corrected. By contrast, the art market is defined by structural opacity and behavioral distortions that suggest the existence of zones where privileged actors may gain advantage.

On the behavioral side, collectors are prone to a series of well-documented biases. The endowment effect leads them to overvalue works they already own, making them reluctant to sell below purchase price. Loss aversion further reinforces this tendency: during downturns, collectors often prefer to hold artworks privately rather than realize losses, causing supply to contract even when demand weakens. The affect bias explains why emotionally appealing works are often purchased above their “fair” value, while auction dynamics are frequently subject to the winner’s curse, where the most enthusiastic bidder ends up paying more than the consensus valuation. Together, these biases create rigidities in supply and demand, reducing liquidity and increasing the likelihood of mispricing.

On the structural side, information asymmetry is perhaps the most distinctive feature of the art market. Unlike equities or bonds, where prices are public and regulated, nearly half of art transactions take place in the opaque channels of galleries, fairs, and private sales (Li, Ma & Renneboog, 2022). In these settings, prices are not disclosed, and access is mediated by networks of trust. Moreover, the lack of centralized regulation permits practices such as selective disclosure, preferential access, and artificial scarcity, all of which generate distortions that insiders can exploit. Academic literature acknowledges this divergence from efficient market models: Goetzmann, Renneboog, and Spaenjers (2009) argue that the absence of oversight remains one of the principal obstacles to institutionalizing art as a genuine asset class.

Empirical and Qualitative Analysis

Quantitative surveys illustrate how these biases and inefficiencies play out in practice. The Barclays Wealth Insights Report (2012) found that American collectors require, on average, a 62% increase in value in the first year after purchase before considering resale. Such reluctance to sell reflects loss aversion and creates illiquidity, which in turn enables informed buyers to exploit occasional distress sales. Historical downturns provide further evidence: during the 2008-09 crisis, global art indices fell by around 40%, but supply contracted even more sharply as owners withheld works rather than accept lower prices. Insiders with privileged access were able to acquire high-quality pieces below their long-term potential value, reselling them at substantial profits once markets recovered. Similar dynamics occurred during the COVID-19 crisis of 2020, when sales dropped by 22% but well-connected collectors used private channels to secure important works at discounted levels (UBS & Art Basel, 2021).

The interview with Alice Cavagna provides first-hand confirmation of these mechanisms. She acknowledges the presence of speculation, especially around emerging artists, where hype is deliberately manufactured: “Some galleries, collectors, and market operators push certain names, artificially creating hype.” According to her, the art market functions as a self-fulfilling ecosystem: once influential actors - galleries, curators, or powerful collectors - converge on an artist, demand rises, prices increase, and the perception of value is reinforced regardless of underlying fundamentals. For those with early access to this information, opportunities for arbitrage emerge; for outsiders, however, the risk is to enter the market at inflated levels just before a correction.

Cavagna also emphasizes the importance of restraint and expertise in navigating these inefficiencies. “It is better to say no nine times and yes once, rather than make a mistake,” she explains, underscoring that the greatest value of an advisor lies not in facilitating more transactions, but in filtering speculative noise and protecting clients from hype-driven acquisitions. She portrays arbitrage not as a systematic strategy but as a selective opportunity available only to those with deep networks and contextual knowledge: access to the right artist, through the right gallery, at the right moment. In this sense, arbitrage in the art market is less about exploiting temporary mispricings and more about leveraging privileged access to information and supply.

Conclusions

The evidence indicates that the art market does contain arbitrage opportunities, but these are fundamentally different from those in financial markets. They are not systematic, scalable, or available to all participants. Instead, they exist in the opaque zones of the market, where information asymmetry, supply rigidity, and behavioral biases converge. For most collectors, these inefficiencies represent risks - overpaying at auction, holding works too long, or missing liquidity when needed. For insiders with superior expertise and relationships, however, they can translate into significant financial advantages.

Cavagna’s testimony confirms this duality. On the one hand, she warns against the dangers of speculation and emphasizes prudence as the cornerstone of responsible collecting. On the other, she acknowledges that well-connected actors - galleries, advisors, institutional collectors - can and do exploit opacity to their advantage. Ultimately, the art market rewards knowledge, networks, and reputation more than capital alone. Arbitrage is possible, but it is reserved for those who operate within its inner circles.

4.4 Fractional Ownership Platforms

Introduction

Fractional ownership platforms are among the clearest signs of the ongoing financialization of the art market. Their goal is to transform unique, illiquid artworks into tradable securities, lowering entry barriers and framing art as an alternative investment product. As discussed in the previous section on investment platforms, this model responds to the demand for accessibility and diversification, particularly from younger generations of investors. However, fractionalization inevitably inherits the structural frictions of the art market - limited liquidity, opacity, and high transaction costs - making its effectiveness as a mainstream channel uncertain.

Empirical and Qualitative Analysis

Masterworks has emerged as the most prominent fractional ownership platform, reporting hundreds of thousands of users and nearly USD 1 billion in assets under management. Similarly, blockchain technology has enabled new formats, from NFTs - whose market peaked in 2021 with the USD 69 million sale of Beeple's *Everydays* - to the tokenization of physical works, such as the fractionalized sale of a Banksy painting. These innovations illustrate the appetite for alternative art investment products, but their volatility and uncertain regulation highlight the fragility of the model.

Alice Cavagna offers a critical practitioner's perspective that applies equally to both fractional and tokenized ownership. She acknowledges that such platforms may attract investors motivated exclusively by financial diversification, but she firmly rejects them as substitutes for genuine collecting: "Personally, I would rather own a lithograph of Basquiat than a fraction of a major painting I cannot enjoy." Her stance underlines the absence of the aesthetic dividend, the emotional and cultural value attached to ownership, which remains central for most collectors. Cavagna also points to the risks of opacity and illiquidity: secondary markets for both fractional shares and tokens remain thin, and resale opportunities are highly uncertain. In her words, these models "can make sense only for those who look at art purely as an investment," but they do not reflect the motivations of traditional collectors.

Conclusions

Fractional platforms demonstrate the ambition to align art with financial market logics, but they clash with the motivations and practices of traditional collectors. As Cavagna's testimony shows, without the possibility of direct enjoyment, the model appeals only to investors seeking exposure to art purely for diversification. In continuity with the broader discussion of investment platforms, fractional ownership emerges as an innovation with niche potential - useful for financial investors, but marginal for the core art market, where ownership and cultural engagement remain central.

4.5 Risk and Liquidity Considerations

Theoretical Background

A key limitation of art as an investment lies in its illiquidity. Unlike equities or bonds, which can be sold almost instantly in transparent markets, artworks are unique, heterogeneous, and costly to transact. Auction houses typically charge buyer's premiums between 15-25% and seller's commissions up to 20%, while storage, insurance, and conservation costs add further burdens (Renneboog & Spaenjers, 2013). Moreover, liquidity depends heavily on timing and context: the same work may achieve very different results depending on the auction house, the city, or even the season in which it is sold.

Empirical and Qualitative Analysis

Empirical evidence shows that liquidity evaporates during downturns. In 2008-09, global auction sales dropped by about 40%, and in 2020, sales contracted by 22% due to COVID-19 (UBS & Art Basel, 2021). In both cases, supply fell as collectors withheld works rather than accept lower prices, further reinforcing market illiquidity.

Alice Cavagna confirms this reality from her practice as an advisor. She explains that her role is not only to recommend acquisitions but also to determine the optimal moment and place for a sale: "If a client owns a Magritte and decides to sell, it is not about doing it tomorrow at random. I study the market to determine the best moment and context - perhaps a specific auction in New York in March, or in London at Christie's, depending on where the work can achieve the best result." This testimony illustrates how liquidity in art is not a static property but a strategic variable that requires expertise.

Cavagna also contrasts the role of an independent advisor with that of a gallerist. Whereas a gallerist is incentivized to sell inventory, often prioritizing their own interests, the advisor works exclusively for the client, aligning decisions with their long-term financial and cultural goals. This independence, she argues, is essential in managing risk and ensuring that acquisitions and sales are coherent with portfolio strategy.

Conclusions

Liquidity in the art market is conditional, costly, and highly dependent on expertise. Unlike financial assets, where liquidity is structural, in art it must be actively managed. Cavagna's testimony reinforces this point: timing, context, and independence are decisive in mitigating risk and optimizing outcomes. For investors without access to such guidance, illiquidity remains one of the greatest barriers to treating art as a financial asset.

Conclusion - Can Art be Considered an Alternative Asset Class?

Alice Cavagna, as an independent art advisor, directly addresses this issue from her daily practice. When asked whether art can be considered an asset class, she is unambiguous: "Yes, I believe it can. Art belongs to the broader category of alternative investments, along with collectibles such as fine wine or vintage cars."

For her, the advantages of considering art as part of an investment portfolio are threefold. First, diversification: art follows its own market dynamics, partially independent from equity and bond markets. This makes it particularly attractive for wealthy clients seeking to reduce exposure to financial volatility. Second, potential for appreciation: while short-term cycles can be brutal, high-quality works, especially by blue-chip artists, consolidate value over the long run. Third, cultural and emotional returns: ownership provides intangible benefits that no other asset class can replicate. Cavagna highlights that many of her clients see their collections not only as financial holdings but as part of their family heritage, to be passed down through generations.

At the same time, she is clear about the limitations. The illiquidity of the market means that sales must be carefully timed and strategically positioned. The costs of conservation, insurance, and transaction fees are substantial and often underestimated by newcomers. Finally, the opacity of pricing and the prevalence of insider networks make art riskier for those without professional

guidance. As she stresses, “Just as one would rely on a financial advisor for equities or bonds, in art it is essential to rely on someone with deep knowledge of the market.” Her independence, compared to a gallerist, ensures that decisions are made in the client’s best interest, rather than driven by inventory.

Cavagna’s balanced view reflects the hybrid nature of art investment. She acknowledges that fractional ownership and tokenization are innovations that may appeal to purely financial investors, but she insists they cannot replace direct collecting because they eliminate the aesthetic dividend. For her, the very essence of art as an asset class lies in the coexistence of two dimensions: financial potential and cultural enrichment. Clients buy with both their wallets and their hearts, and it is precisely this duality that defines art’s unique position.

Ultimately, Cavagna’s perspective underscores that the financialization of art has limits: investors may treat it as an asset class, but collectors experience it as more than an asset. The convergence of these two logics explains why art is best described as a hybrid asset class, one that stands at the intersection of culture and finance, attracting both investors seeking diversification and collectors seeking meaning.

Conclusion

The Future of Art as an Asset Class: Between Diversification, Exclusivity, and Accessibility

The empirical evidence presented in this thesis has revealed a central paradox: while art as an asset class shows limited aggregate performance and high volatility, its upside potential remains significant for those who possess the expertise, access, and networks required to navigate its inefficiencies. Unlike traditional financial markets, where transparency and regulation level the playing field, the art ecosystem rewards insiders who are able to identify undervalued works, secure access to blue-chip pieces, and time transactions strategically. In this sense, the art market remains a segmented arena: one in which financial returns are limited for the average participant, yet potentially extraordinary for those operating at the highest levels.

At the same time, the empirical analysis in Part I has underscored that art's appeal is not confined to extraordinary outliers. Its consistently low correlations with equities, bonds, and real estate highlight a structural independence from broader financial markets. This decorrelation explains why art can be justified in a portfolio even when expected returns are modest: it offers diversification benefits and, equally importantly, a unique form of aesthetic and cultural return. As Alice Cavagna aptly remarked, "If art ends up in a vault, it does not interest me." Her words capture the dual nature of art investment: it is not only about financial hedging, but also about ownership, enjoyment, and the expressive utility of displaying a work. This reinforces the idea that any serious engagement with art requires professional guidance - an art advisor does not merely filter speculative noise but also ensures that acquisitions preserve both financial potential and cultural meaning.

Looking ahead, the challenge for the art market will be to reconcile two parallel dynamics. On the one hand, the broad base of collectors and fractional investors seeks accessibility and inclusivity; on the other, the elite segment continues to concentrate value creation in blue-chip names and insider networks. Mechanisms that lower barriers to entry while ensuring exposure to high-quality works - fractional platforms, securitization models, or innovative lending practices - may represent the next stage of financialization. If successful, they could democratize access to art investment while preserving the concentration of value at the top.

Beyond these innovations, confidential insights gathered during this research point to another frontier: the emergence of membership-based art clubs. These initiatives aim to combine exclusivity with transparency, offering a curated environment where vetted members can transact in a safer and more professionalized context. By fostering trust, facilitating exchanges of high quality, and creating community-based governance structures, such clubs could gradually function as a form of “self-regulation” for a market historically resistant to oversight.

If these evolutions consolidate, the art market may become a hybrid system: open and accessible at the base, but highly curated at the top, where membership networks ensure efficient and exclusive exchanges. For investors, this implies that the true value of art will remain tied to the ability to navigate between passion and strategy, inclusion and exclusivity. For scholars and practitioners, it raises the broader question of whether art can ever fully shed its cultural dimension and be absorbed into finance, or whether its hybrid identity - simultaneously an investment and a source of meaning - will remain its defining trait.

Ultimately, the lesson of this thesis is that art’s greatest strength does not lie in consistent market-wide returns, but in its ability to deliver unique opportunities to those who combine expertise, access, and cultural sensibility. Its future as an asset class will depend on how successfully the sector balances its dual nature - financial and aesthetic, exclusive and inclusive - and how new structures can integrate cultural heritage with financial innovation.

Appendix

Table 1 - Static Correlations (1998 - 2025)

| <i>Static correlations</i> | - | Fixed Income | Real Estate | Private Equity |
|----------------------------|--------------|---------------------|--------------------|-----------------------|
| Artprice Index | 0.16 | 0.02 | 0.13 | 0.14 |
| S&P | - | -0.12 | 0.75 | 0.92 |
| Fixed Income | -0.12 | - | 0.11 | -0.09 |
| Real Estate | 0.75 | 0.11 | - | 0.76 |
| Private Equity | 0.92 | -0.09 | 0.76 | - |

Table 2 - Rolling Correlations (1998 - 2025, 24-month rolling period)

| <i>Date</i> | Art / Equity | Art / Fixed Income | Art / Real Estate | Art / PE |
|-------------|---------------------|---------------------------|--------------------------|-----------------|
| 01/04/98 | 0.76 | n.a. | n.a. | n.a. |
| 01/07/98 | 0.78 | n.a. | n.a. | n.a. |
| 01/10/98 | 0.73 | n.a. | n.a. | n.a. |
| 01/01/99 | 0.78 | n.a. | n.a. | n.a. |
| 01/04/99 | -0.15 | n.a. | n.a. | n.a. |
| 01/07/99 | -0.04 | n.a. | n.a. | n.a. |
| 01/10/99 | -0.07 | n.a. | n.a. | n.a. |
| 01/01/00 | -0.10 | n.a. | n.a. | n.a. |
| 01/04/00 | -0.19 | n.a. | n.a. | n.a. |
| 01/07/00 | -0.24 | n.a. | n.a. | n.a. |
| 01/10/00 | -0.20 | n.a. | n.a. | n.a. |
| 01/01/01 | -0.18 | n.a. | n.a. | n.a. |
| 01/04/01 | 0.03 | n.a. | n.a. | n.a. |
| 01/07/01 | 0.15 | n.a. | n.a. | n.a. |
| 01/10/01 | -0.12 | n.a. | n.a. | n.a. |
| 01/01/02 | 0.07 | n.a. | n.a. | n.a. |
| 01/04/02 | 0.09 | n.a. | n.a. | n.a. |
| 01/07/02 | 0.09 | n.a. | n.a. | n.a. |
| 01/10/02 | -0.11 | n.a. | n.a. | n.a. |
| 01/01/03 | -0.20 | n.a. | 0.18 | n.a. |
| 01/04/03 | -0.23 | n.a. | 0.42 | n.a. |
| 01/07/03 | -0.41 | n.a. | -0.09 | n.a. |
| 01/10/03 | -0.18 | n.a. | 0.11 | n.a. |
| 01/01/04 | 0.11 | n.a. | 0.18 | n.a. |
| 01/04/04 | -0.14 | n.a. | 0.26 | n.a. |
| 01/07/04 | -0.07 | n.a. | 0.37 | n.a. |
| 01/10/04 | -0.38 | n.a. | 0.06 | n.a. |
| 01/01/05 | -0.27 | n.a. | 0.19 | n.a. |

| | | | | |
|----------|-------|-------|-------|-------|
| 01/04/05 | -0.22 | n.a. | -0.09 | 0.41 |
| 01/07/05 | -0.06 | n.a. | -0.07 | 0.16 |
| 01/10/05 | -0.14 | n.a. | -0.13 | -0.08 |
| 01/01/06 | -0.53 | 0.42 | -0.44 | -0.35 |
| 01/04/06 | -0.60 | 0.49 | -0.55 | -0.35 |
| 01/07/06 | -0.56 | 0.45 | -0.55 | -0.34 |
| 01/10/06 | 0.13 | 0.47 | -0.02 | 0.26 |
| 01/01/07 | 0.38 | 0.11 | 0.23 | 0.46 |
| 01/04/07 | 0.10 | 0.26 | -0.05 | 0.19 |
| 01/07/07 | 0.27 | 0.09 | 0.11 | 0.36 |
| 01/10/07 | 0.15 | 0.10 | -0.02 | 0.26 |
| 01/01/08 | 0.32 | -0.08 | 0.20 | 0.37 |
| 01/04/08 | 0.40 | -0.37 | 0.27 | 0.42 |
| 01/07/08 | 0.40 | -0.32 | 0.28 | 0.43 |
| 01/10/08 | 0.39 | -0.32 | 0.28 | 0.37 |
| 01/01/09 | 0.29 | -0.60 | 0.07 | 0.20 |
| 01/04/09 | 0.19 | -0.61 | -0.23 | 0.00 |
| 01/07/09 | -0.02 | -0.47 | -0.40 | -0.23 |
| 01/10/09 | -0.04 | -0.49 | -0.23 | -0.25 |
| 01/01/10 | -0.01 | -0.58 | -0.10 | -0.22 |
| 01/04/10 | -0.15 | -0.23 | -0.15 | -0.31 |
| 01/07/10 | -0.23 | -0.12 | -0.21 | -0.31 |
| 01/10/10 | -0.31 | 0.00 | -0.09 | -0.40 |
| 01/01/11 | -0.16 | -0.06 | 0.06 | -0.17 |
| 01/04/11 | -0.43 | 0.29 | -0.05 | -0.25 |
| 01/07/11 | -0.38 | 0.14 | -0.05 | -0.23 |
| 01/10/11 | -0.23 | 0.01 | 0.02 | -0.03 |
| 01/01/12 | -0.46 | 0.11 | -0.05 | -0.24 |
| 01/04/12 | -0.47 | 0.16 | -0.06 | -0.24 |
| 01/07/12 | -0.39 | 0.19 | 0.11 | -0.28 |
| 01/10/12 | 0.21 | -0.20 | 0.14 | -0.02 |
| 01/01/13 | -0.04 | -0.25 | -0.05 | 0.23 |
| 01/04/13 | -0.33 | 0.23 | 0.34 | -0.74 |
| 01/07/13 | -0.28 | 0.27 | 0.42 | -0.80 |
| 01/10/13 | -0.25 | 0.66 | 0.64 | -0.62 |
| 01/01/14 | -0.33 | 0.68 | 0.52 | -0.63 |
| 01/04/14 | -0.34 | 0.71 | 0.52 | -0.59 |
| 01/07/14 | -0.30 | 0.69 | 0.52 | -0.56 |
| 01/10/14 | -0.32 | 0.79 | 0.58 | -0.64 |
| 01/01/15 | -0.02 | 0.16 | 0.43 | -0.16 |
| 01/04/15 | -0.03 | -0.08 | 0.35 | -0.20 |
| 01/07/15 | 0.17 | -0.38 | 0.12 | 0.13 |
| 01/10/15 | 0.13 | -0.38 | 0.14 | 0.12 |
| 01/01/16 | 0.24 | -0.46 | 0.06 | 0.06 |

| | | | | |
|-----------------|------|-------|-------|------|
| <i>01/04/16</i> | 0.63 | -0.46 | 0.17 | 0.51 |
| <i>01/07/16</i> | 0.69 | -0.39 | 0.30 | 0.59 |
| <i>01/10/16</i> | 0.74 | -0.46 | 0.46 | 0.63 |
| <i>01/01/17</i> | 0.66 | -0.29 | 0.43 | 0.63 |
| <i>01/04/17</i> | 0.47 | 0.00 | 0.40 | 0.35 |
| <i>01/07/17</i> | 0.55 | 0.22 | 0.45 | 0.55 |
| <i>01/10/17</i> | 0.53 | 0.11 | 0.26 | 0.41 |
| <i>01/01/18</i> | 0.60 | 0.11 | 0.14 | 0.49 |
| <i>01/04/18</i> | 0.51 | 0.21 | 0.39 | 0.43 |
| <i>01/07/18</i> | 0.43 | -0.01 | 0.38 | 0.43 |
| <i>01/10/18</i> | 0.33 | -0.11 | 0.20 | 0.42 |
| <i>01/01/19</i> | 0.31 | -0.41 | 0.22 | 0.39 |
| <i>01/04/19</i> | 0.32 | -0.38 | 0.14 | 0.39 |
| <i>01/07/19</i> | 0.43 | -0.36 | 0.20 | 0.46 |
| <i>01/10/19</i> | 0.45 | -0.28 | 0.19 | 0.49 |
| <i>01/01/20</i> | 0.47 | -0.16 | 0.35 | 0.57 |
| <i>01/04/20</i> | 0.62 | 0.08 | 0.48 | 0.71 |
| <i>01/07/20</i> | 0.50 | 0.40 | 0.30 | 0.59 |
| <i>01/10/20</i> | 0.52 | 0.45 | 0.37 | 0.61 |
| <i>01/01/21</i> | 0.68 | 0.43 | 0.58 | 0.64 |
| <i>01/04/21</i> | 0.49 | 0.52 | 0.29 | 0.39 |
| <i>01/07/21</i> | 0.57 | 0.49 | 0.31 | 0.43 |
| <i>01/10/21</i> | 0.53 | 0.38 | 0.13 | 0.41 |
| <i>01/01/22</i> | 0.75 | 0.54 | 0.43 | 0.63 |
| <i>01/04/22</i> | 0.57 | 0.54 | 0.41 | 0.53 |
| <i>01/07/22</i> | 0.54 | 0.53 | 0.51 | 0.43 |
| <i>01/10/22</i> | 0.44 | 0.54 | 0.34 | 0.34 |
| <i>01/01/23</i> | 0.38 | 0.43 | 0.16 | 0.27 |
| <i>01/04/23</i> | 0.56 | 0.24 | 0.20 | 0.44 |
| <i>01/07/23</i> | 0.68 | 0.14 | 0.25 | 0.50 |
| <i>01/10/23</i> | 0.67 | 0.19 | 0.25 | 0.50 |
| <i>01/01/24</i> | 0.76 | 0.15 | 0.24 | 0.53 |
| <i>01/04/24</i> | 0.80 | 0.06 | 0.17 | 0.73 |
| <i>01/07/24</i> | 0.85 | -0.29 | 0.00 | 0.80 |
| <i>01/10/24</i> | 0.87 | -0.56 | -0.21 | 0.80 |
| <i>01/01/25</i> | 0.99 | -0.95 | 0.48 | 1.00 |

Table 3 - Dot-com Bubble Quarterly Returns

| <i>Dot.com bubble</i> | <i>Artprice Index</i> | <i>Gold</i> | <i>S&P</i> |
|-----------------------|-----------------------|-------------|----------------|
| 01/01/00 | 8% | -5% | 2% |
| 01/04/00 | 6% | -3% | 4% |
| 01/07/00 | -7% | 1% | -1% |
| 01/10/00 | 4% | -4% | 0% |
| 01/01/01 | -12% | 0% | -4% |
| 01/04/01 | 20% | -1% | -9% |
| 01/07/01 | -14% | 1% | -3% |
| 01/10/01 | 3% | 5% | -13% |
| 01/01/02 | -1% | 1% | 7% |
| 01/04/02 | 4% | 9% | -5% |
| 01/07/02 | -1% | -2% | -15% |
| 01/10/02 | 1% | 5% | -3% |
| 01/01/03 | 12% | 16% | -3% |

Table 4 - Dot-com Bubble Rolling Correlations (12 Months Rolling Period)

| <i>Dot.com bubble</i> | <i>Art / Equity</i> | <i>Gold / Equity</i> | <i>Art / Gold</i> |
|-----------------------|---------------------|----------------------|-------------------|
| 01/01/00 | 0.81 | -0.62 | -0.96 |
| 01/04/00 | 0.91 | -0.67 | -0.89 |
| 01/07/00 | -0.57 | -0.34 | -0.36 |
| 01/10/00 | -0.51 | -0.53 | -0.44 |
| 01/01/01 | -0.65 | -0.64 | -0.13 |
| 01/04/01 | -0.39 | -0.42 | -0.29 |
| 01/07/01 | -0.23 | -0.50 | 0.70 |
| 01/10/01 | -0.19 | 0.10 | 0.95 |
| 01/01/02 | -0.01 | 0.22 | 0.97 |
| 01/04/02 | 0.59 | 0.76 | 0.96 |
| 01/07/02 | 0.61 | 0.75 | 0.98 |
| Avg | 0.03 | -0.17 | 0.14 |

Table 5 - Global Financial Crisis Quarterly Returns

| GFC | Artprice Index | Gold | S&P |
|------------|-----------------------|-------------|----------------|
| 01/07/07 | 2% | -2% | -2% |
| 01/10/07 | -14% | 20% | 6% |
| 01/01/08 | 19% | 16% | -11% |
| 01/04/08 | -5% | -6% | 1% |
| 01/07/08 | 7% | 5% | -9% |
| 01/10/08 | -20% | -21% | -24% |
| 01/01/09 | -9% | 28% | -15% |
| 01/04/09 | -16% | -4% | 6% |
| 01/07/09 | 21% | 8% | 13% |

Table 6 - Global Financial Crisis Rolling Correlations (12 Months Rolling Period)

| GFC | Art / Equity | Gold / Equity | Art / Gold |
|------------|---------------------|----------------------|-------------------|
| 01/07/07 | -1.00 | -0.03 | 0.07 |
| 01/10/07 | -0.97 | 0.06 | 0.06 |
| 01/01/08 | 0.44 | 0.44 | 1.00 |
| 01/04/08 | 0.70 | 0.16 | 0.39 |
| 01/07/08 | 0.14 | 0.12 | 0.48 |
| 01/10/08 | 0.70 | 0.19 | 0.40 |
| 01/01/09 | 0.57 | -0.80 | 0.04 |
| Avg | 0.08 | 0.02 | 0.35 |

Table 7 - Covid-19 Quarterly Returns

| Covid-19 | Artprice Index | Gold | S&P |
|-----------------|-----------------------|-------------|----------------|
| 01/01/20 | 15% | 5% | 6% |
| 01/04/20 | -10% | 6% | -10% |
| 01/07/20 | 5% | 18% | 12% |
| 01/10/20 | 10% | -5% | 0% |
| 01/01/21 | 9% | -2% | 14% |

Table 8 - Covid-19 Rolling Correlations (12 Months Rolling Period)

| Covid-19 | Art / Equity | Gold / Equity | Art / Gold |
|-----------------|---------------------|----------------------|-------------------|
| <i>01/01/20</i> | 0.67 | 0.55 | -0.21 |
| <i>01/04/20</i> | 0.73 | 0.21 | -0.34 |
| <i>01/07/20</i> | -0.56 | 0.54 | -1.00 |
| Avg | 0.28 | 0.43 | -0.52 |

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