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The Art Market at Times of Economic Turbulence and High Inequality.

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1. Introduction

Art is a product of human creativity and a mean to express inner feelings and beauty. At the same time, art is influenced by both societal progress and social dramas as well as technological revolutions, financial trends and political and cultural upheavals. In addition, there is also a permanent tensions between the dimension of art as aesthetic appreciation open to the citizenship at large (the "masses") through public exhibitions presented in museums and public spaces and art as an investment asset and an object of private collection. In the latter case, the personal availability of wealth and income restricts the access to art objects to smaller groups with enough purchasing power to acquire them.

A high volume of liquid capital is circulating around the globe looking for profitable investment opportunities. The art market attracts big money turning artwork a competing asset to stocks, bonds, real estate and precious metals. In 2018 it registered annual sales of 67 billion dollars and rising (McAndrew, 2019), boosting a related

[1] Comments provided to an earlier version of this paper presented at the Investment Migration Council Academic Day 2019, (Geneva, June 3, 2019) and the Inequality and xxx? Seminar Series at the European Investment Bank Institute, Luxembourg (June 6, 2019) are appreciated. Effective research assistance by Javier Galaz and Damian Gildemeister is acknowledged.

industry of auction houses, galleries, art advisors, financial institutions and the mass media.

In operational terms, artwork comprehends pieces of fine arts, decorative arts, antiques, and collectibles. In regards to fine art, a dichotomy has traditionally existed between Modern art (including a variety of movements such as Impressionism, post-Impressionism, Fauvism, Expressionism, and Cubism) and Contemporary art, which refers to works created after World War II, and throughout the present. This latter segment of the art sector accounts for the bulk of the volume and revenues turnover in the market.

Art prices can reach really extravagant levels. In 2017 a Leonardo Da Vinci painting titled *Salvatore Mundi* sold in New York's Christie's for U$ 450 million, the highest recorded price ever paid for a work of art. In May 2019 the *Haystaks* painted in 1890 by Claude Monet was sold at an auction in Sotheby's at U$ 110 million (the pre-sale valuation was at U$ 50 million).[2]In the same month at Christie's Jeff Koons sold a stainless steel rabbit in U$ 91 million, setting a record price for work by a living artist. In other occasions, pieces of Modern art (Van Gogh, Klimt, Kandinsky, Monet, Leger, and Chagall) have sold in the price range of U$ 11 to U$ 80 million, and those by top Postwar and Contemporary artists, such as Andy Warhol, Jean-Michel Basquiat, Roy Lichtenstein, Mark Rothko, Gerhard Richter, and Cy Twombly sold in the range of U$ 20 million-U$ 110 million (McAndrew, 2018). It is apparent that these extravagant prices make fashionable artwork only affordable to a minuscule portion of the global population with very large wealth, stressing the elitist nature of the upper-end of the art

[2] The sale price of this painting in 1986 was U$ 2.5 million, increasing by 44 times in a period of 33 years.

market. Public museums also face hard times to expand their collections due to the rising price of valuable artwork.

There are multiple motivations for acquiring art. On the one hand it can be considered as a "consumption good" driven by aesthetic enjoyment and the quest for objects that capture beauty. In addition, art is also a "symbolic asset" with features of conspicuous consumption (Thorsten Veblen's famous term) in which owners of highly valuable artwork use it to signal their command of high wealth.[3] On the other hand, the demand for artwork is also motivated by the expectation of a monetary return associated with an increase (appreciation) in its price. In this case art becomes an investment asset in which return-risk combinations become very relevant considerations in the decision to acquire art More prosaic motivations for investing in art may also include practices of money laundering and tax-avoidance, taking advantage of the unregulated character of this market. The loss of tax revenues associated with unrecorded art transactions deprives government from revenues that could be used to finance and support public museums and public exhibitions contributing to social welfare though the enjoyment of art.

21st global capitalism is constantly reproducing and expanding the wealth held by rich elites that need to find new outlets for investing new wealth.[4] The affluence of the elites exerts direct influence over the art industry by purchasing paintings, sculptures, and other forms of art, pushing -up the prices of artworks, making many pieces completely unaffordable to potential buyers from the middle (and working) class. In an era of declining public support for the arts and rising private contributions, we observe a growing trend towards the *privatization and financialization* of the art market.

[3] Mandel (2009) discusses the investment and consumption features of artwork.
[4] See Solimano (2014, 2017) for analysis of elites, wealth distribution and global capitalism.

The rising importance of private money is leading to increased *segmentation and centralization* of sales in big auction houses and large galleries. Collusive practices regarding minimum prices, commissions, links between sellers, buyers and intermediaries are not uncommon. Episodes of forgery are not rare either, a feature reinforced by the lack of regulation of the market. This pushes-up the transaction costs of buying and selling art work.

Another relevant issue is the impact of macroeconomic cycles and financial crises (such as the global crisis of 2008-09 and others) on the art market making the demand and supply for artwork sensitive to macro-financial shocks. A related question is to what extent, artwork is a "safe-haven" asset, protecting investors in a world of financial volatility and frequent crises. The paper presents evidence on the behavior of art prices during the various cycles and crises of the 1998-2018 period and identifies channels through which economic inequality and wealth concentration among countries and within countries affect the art market.

This chapter is organized in five sections besides this introduction. Section 2 examines the main determinants of art prices along with transaction costs and liquidity issues, the sensitivity of the art market's sales to overall macroeconomic cycles, market segmentation and concentration with large galleries and auction houses accounting for the bulk of sales of high-priced artwork, the importance of wealth inequality in shaping the upper-end of the art market and the growing internationalization of the art market and its geographical concentration in the US, UK and Chinese markets that, combined, account for near 80 percent of global sales, displacing France, Germany, and Japan in their previous importance as main trading places for artwork. Section 3 studies the behavior of art prices in 1998-2018, a period that includes cycles of boom, crash (2008-09) and recovery. The evolution of art prices during cycles is compared with the path of

stock market prices and gold prices over the same period. Section 4 turns to the question of artwork either as a pro-cyclical asset or a counter-cyclical, "safe-haven asset", that preserves value in recessions . Two pieces of evidence are explored in this regard: (i) the behavior of gold prices during three main slumps of the last 90 years: the great depression of the 1930s, the stagflation of the 1970s and the global financial crisis of the late 2000s and (ii) correlation analysis between art prices and stock, oil, gold and bitcoin prices. Section 5 concludes.

2. Main Features of the Art Market.[5]

The art market displays at least seven special features that make it different from other markets and that are important to grasp.[6]

(i) Transaction costs, liquidity and art prices.

Paintings, sculptures, drawings, prints, artifacts are unique and heterogenous objects. They are affected by indivisibility and lumpiness, their monetary valuation is not obvious as depend on complex taste structures (demand factor) and the availability of artwork (supply factor); in turn, masterpieces tend to register infrequent sales. Finding buyers and the possibility of forgery imply that *transactions costs* are non-trivial, often requiring the intermediation of auction houses and art galleries that often charge significant fees for their services, including the verification of authenticity and provenance of the artwork.

In addition, and related to the above, the ability of a collector or buyer to convert a painting or sculpture into readily available cash at a low cost can be limited, particularly

[5] This section draws, in part, on Solimano and Solimano (2019).
[6] Economic-oriented journal articles of the art market include Baumol (1986), Mei and Moses (2002), Korteweg, Kraussl, and Werjijmeren, (2016). Books of broader dissemination comprise Adam (2014 and 2017) and Robertson and Chong (2018).

at times of economic downturns.[7] This is a market with potential lack of *liquidity,* at least for buyers and sellers that do not have access to art-related credits and guarantees (on these features see table 3 below).[8] In contrast, financial assets such as stocks and bonds, can be bought and sold easily as standardized products, supported by a well established financial infrastructure that reduces transaction costs.

The price of art work reflect the interplay of supply and demand of art works. Prices Cary according to characteristics such as medium (oil, watercolor, acrylic) in the case of paintings; clay, marble, iron in the case of sculptures, the size of the art work, the date of its production and other characteristics. In turn, the supply of artwork by dead artist is fixed and for living artists may not be that elastic. Thus, we may expect that *changes in demand* will largely drive prices in the art market.[9]

As already mentioned, the demand for art in turn depends on the motivation for holding artwork, say consumption/intrinsic enjoyment or investment. The demand for art for both motives is bound to be a function of the income and wealth *levels* of the art buyer and also on the *distribution* of wealth and income. In addition, it will depend on the expected, risk-adjusted, return of holding art. In addition, considerations of portfolio

[7] Until recently, in the US and other countries, the law did not allow a person to be owner of a portion of an artwork. Nevertheless, this is starting to change. In some countries art investment funds are starting to offer people to own a "piece" of an artwork in similar fashion that a person can own a fraction of an enterprise by buying equities.

[8] Economic-oriented journal articles of the art market include Baumol (1986), Mei and Moses (2002), Korteweg, Kraussl, and Werjijmeren, (2016) among many others. Books, with an economic bent, comprise Adam (2014 and 2017) and Robertson and Chong (2018).

[9] Understanding the behavior of art prices, including predicting their value determination at auctions, is a complex subject. Traditional quantitative methods are based on hedonic regressions (Renneboog and Spaenjers, 2003 that use specific characteristics of the art work such as date and nationality of the artist, date of painting, size, technique (e.g oil, watercolor, acrylic, drawings, etc) to predict prices. Newer methods are based on big-data and artificial intelligence techniques particularly the machine -learning method that use large amounts of information (including descriptive parameters of each artwork) to detect patterns and human emotions at the time of valuing artwork (see Aubry et.al, 2019).

diversification, at times of economic volatility and low interest rates, through art is a growing motivation for holding artwork these days.

(ii) Privatization and Financialization

The growing ownership of artwork of high-value by private collectors and wealthy families has several implications for the relative position of the art market in society. Nowadays private collectors have an active participation on boards of museums and other non-profit organizations to which they lend and/or donate pieces from their collections, and contribute with funding. Their presence in arts institutions at a moment when public funding in art is shrinking, affects the balance between the private and public domains in the art sector.

The art market is increasingly financialized (see Deloitte, 2017)*:* hedge funds, family offices, commercial banks and art investment funds are now actively investing in art, mostly on behalf of their wealthy clients. A basic task of financial analysis is comparing the rates of return, adjusted by risk, across different assets to detect the absence or presence of unexploited arbitrage opportunities. Art can provide an asset that helps to diversify portfolios to the extent that its prices and returns are either uncorrelated or negatively correlated with the return of more traditional assets such as stocks, bonds, precious metals and real estate. Empirical studies using historical data of prices of works of art (often based on auctions) and changes of valuation of entire collections, such as the Keynes collection [10] show that the *average* rate of return (capital gains over acquisition values) from trading in artworks *does not* differ, substantially, from the

[10] The famous British economist John Maynard Keynes had an innate love for the arts, was an active art collector and a member of the Bloomsbury Group, formed by free-minded artists and intellectuals in the first three decades of the 20th century. Keynes's art collection, currently valued in around GBP 70 million (he spent near GBP 13,000 in his art portfolio valued at purchasing prices) is located in Kings College and the Fitzwilliam Museum in Cambridge, UK.

return of holding stocks or bonds once adjusted by risk premiums, in the medium to long run.[11] Campbell (2008) and Mandel (2009) study the correlation between the average return and their variances for artwork and other financial assets using various price indices for certain time periods and specific national markets. Longer historical series of art prices are available mostly for the British art market. Further, Krauss, Lehnert and Martelin (2014) explore the possibility of bubbles in art prices in the period 1970-2013.

(iii) Concentration and Polarization.

The global art market shows features of a *polarized market* in which the bulk of the number of transactions (volume) is concentrated at the *lower-end* of the market, (trading art work below USD 50,000) while the bulk of *sales value* (prices times quantities sold) is concentrated at the *higher-end* of the market (trading at prices above USD 1 million, see Table 1). The *middle-range* of the market is squeezed (in value) by the upper tail and the bottom tail (in volume). Polarization is reflected, among other ways, in the presence of powerful dealers at international art fairs (an increasingly important way to sell art) that take place in cities like New York City, Miami, Basel, London, that outcompete with middle and small size galleries.

It is important to note that the modalities for meeting buyers and sellers of artworks have changed over time, with visits to galleries having declined in recent years. The *auction segment* of the market (part of the secondary market) —an important traditional tool of selling art that dates back to the seventeenth century in London—accounted for almost half of the total fine art sales in 2017—$28.5 billion of $63.7 billion (McAndrew, 2018, 16). This segment is also dominated by very few actors,

[11] Chambers, Dimson and Spaenjers , (2017); Worthington and Higgs, (2004).

namely by the houses Christie's, Sotheby's, Poly Auction, China Guardian, and Phillips.[12]

In a market dominated by big players, with a growing presence of the financial sector, the influence of the individual artist is diminished. Despite having created the value of the artworks in the first place, artists exert limited control on the destiny of their creation, resembling, to a extent, the popular notion of the worker affected by alienation in the capitalist factory system. Another trend is the growing importance of on-line sales, main vehicles of selling artwork nowadays, reflecting the growing use of the internet in this market.

Table 1. Share of Lots Sold and Total Value at Global Fine Art Auctions in 2017 by Price Bracket.

	Value	Volume
Lower-end (Below $50k)	8.6%	89.8%
Middle Market ($50k - $1m)	27.9%	9.4%
High-end (Above $1m)	63.5%	0.9%
Total	100.0%	100.0%

Source: McAndrew, C. (2018).

[12] The fine art revenue generated by Christie's and Sotheby's represented over 75 percent of the fine art revenue of the five mentioned houses in 2017 (McAndrew, 2018, 106).

The upper-end of the art market is characterized by highly personal relations and rather obscure practices regarding price and fees (the buyers and sellers premiums) charged by the house in auctions; revealing examples of this can be found in Adam (2017; 2014). Information regarding the price at which the pieces are expected to sell, can be subject to manipulation and may fail to reach all prospective buyers. Many times, the prices are set unrealistically low, which attracts potential buyers although in other cases, the prices are inflated, detracting buyers from building interest in particular pieces—which are likely to be sold to preferential bidders. Prices of certain artists promoted by galleries can be also inflated. Moreover, the art market is increasingly converging towards a "winners-take- all-market," in which the high prices, profits, and commissions are captured by a small minority of intermediaries and "superstar" artists—either living or dead/heirs—dominating the upper- end of the market.[13]

(iv) Sensitivity to macroeconomic cycles

The experience of the art market in the first two decades of the 21st century (explored in more detail in the next section) shows a considerable sensitivity to macroeconomic cycles of expansion and contraction. The *aggregate* evidence suggests the art market tends to behave in a *pro-cyclical way*, with *total* sales/volumes rising in the upswings, and declining in the downturns of the business cycle. As shown in Table 2 and Figure 1, both sales and volumes fell sharply in 2009 at the bottom of the global financial crisis, yet recovered rather forcefully in the first few years after the crisis (this recovery failed to be sustained after 2012). Aggregate sales in the global market of art were U$ 62

[13] Rosen (1981) presents the economics of superstars in arts, sports, and entertainment, noting that very big differences in earnings coexist with rather small differences in talent among market participants (winners-take-all syndrome). Solimano (2008, 2010) expanded Rosen's and other frameworks to examine the global markets for talent in different fields.

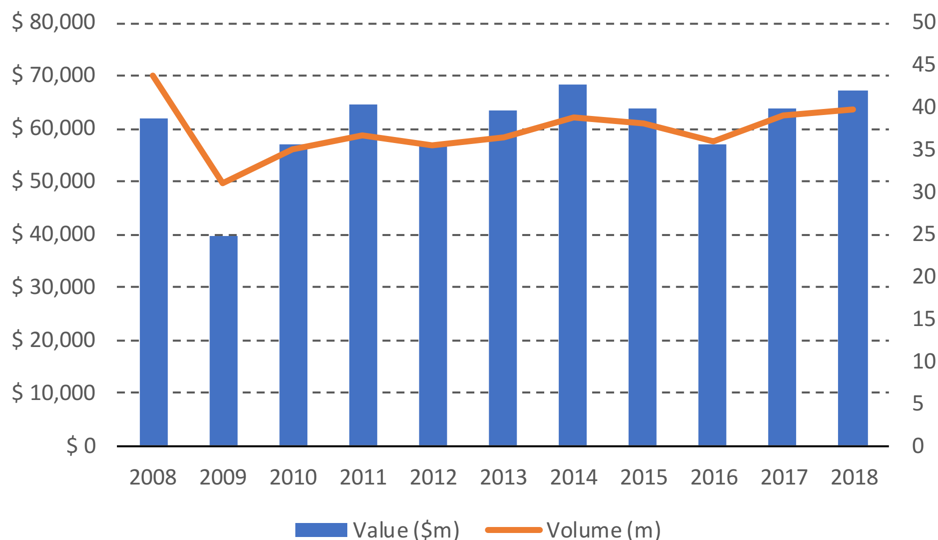
billion in 2008, declining to U$ 39 billion in 2009 , reaching near a decade later U$ 67 billion dollars in 2018.

Table 2 The Global Art Market: Value and Volume of Transactions, 2008-18.

Year	Value ($m)	Volume (m)
2008	$ 62,020	43.7
2009	$ 39,511	31
2010	$ 57,025	35.1
2011	$ 64,550	36.8
2012	$ 56,698	35.5
2013	$ 63,287	36.5
2014	$ 68,237	38.8
2015	$ 63,751	38.1
2016	$ 56,948	36.1
2017	$ 63,683	39
2018	$ 67,380	39.8
Growth 2017-2018	6%	2%
Growth 2008-2018	9%	–9%

Source: Art Market 2019

Figure 1 The Global Art Market: Value and Volume of Transactions,2008-2018



Source: Table 1, Mac Andrew (2019)

Upward and downward cycles can affect differently the various segments of the market. While downturns and crashes may probably hit all segments of the market the post-crisis recovery favored, mostly, large auction houses and big galleries, with those in the middle-lower end lagging behind. In fact, galleries with turnover in excess of U$ 50 million had yearly increases of over 10 percent in the post-2009 period, compared with declines in sales for dealers with sales less than U$ 1 million (MacAndrew, 2018). Galleries with annual sales below U$ 250,000 did the worse in the market, confirming that the recent recovery in the art market has benefitted the high-end in detriment to the rest[14].

(v) Lack of Regulation, Tax Avoidance and Tax Elusion

Unlike the securities and bond markets, the art market is largely unregulated with buyers of artwork being little protected from manipulative practices exercised by certain

[14] The high end of the market concentrates a very thin segment of artists, while the remaining majority of them supply the middle-range and lower-end of the market through the segment of galleries, dealers, and auction houses.

intermediaries. In addition, top collectors are increasingly using artwork as investments to reduce their tax burden. More worrisome is the presumption that some participants use the art market to launder money obtained from illicit activities such as drug dealing and informal arms-trade (Adam, 2014).

A mechanism to keep valuable artwork outside the public domain and protected from taxation is *freeports.* These are sophisticated physical facilities storing valuable paintings, sculptures, printings and so on besides other luxury items such as expensive cars, wine, gold and diamonds. Historically, freeports arose as tax-free facilities in ports used for storing goods while the merchandise was in transit to other destinations, the reason for which "custom authorities [allowed] duties and taxes to be suspended until goods [reached] their final destination."[15] Now the merchandise "in transit" is artwork that may be stored a long time (several years) waiting for its price to increase. Such storage facilities for art and other luxuries can be found in Geneva, Zurich, Luxembourg, Monaco, Singapore and Beijing. It is worth noting that freeports are located in roughly the same places of tax havens for receiving bank deposits suggesting the existence of a global industry of wealth protection and tax avoidance that employs various vehicles for that end.

[15] Solimano and Solimano (2019).

Table 3 summarizes various complex features of art markets regarding indivisibilities, transaction costs, liquidity issues, lack of transparency and market polarization. This is compared with stock markets and real estate markets.

Table 3. The Art Market, the Stock Market and Property Markets.

	Type of Market		
	Artwork	Stocks	Property
Feature			
Liquidity	low	high	low
Divisibility	low	high	low
Polarization	high	moderate	moderate
Regulation	low	high	moderate
Transparency	low	high	moderate
Transaction costs	high	low	intermediate
Source: Solimano and Solimano (2019).			

(vi) The art market is increasingly globalized

Another important trend is the *internationalization* of the art market, coinciding with overall economic globalization, the development of the internet and the increasing importance of international air fairs (e.g. Art-Basel, Venice Biennale and others) trading for artwork. From the mid nineteen century to the early decades of the 20th century the British and French markets were dominant in the art world but since World War II, the United States started to increase its global importance in the art market with New York

City a main center of attraction of artists and commercialization of art.[16] In 2018 the US market accounted for 44 percent of global artwork sales (figure 3). The American hegemony in the art world is associated with its large infrastructure of galleries and auction houses, favorable tax and regulatory frameworks and the fact the USA hosts the largest concentration of personal wealth in the world enabling an ample purchasing power of art work (see table 4).

In the 1970s and 1980s, the Asian regional art market started to rise, dominated by Japan, a country experiencing, at that time, high rates of economic growth, large savings capacity and a booming stock and real estate markets. In addition, the yen had appreciated against main Western currencies, making it cheaper for Japanese art collectors to buy Western art, boosting Japan's participation in the global art collecting scene. The Japanese art sector, however, crumbled in the early 1990s, as Japan's stock market collapsed, and the economy entered a long period of stagnation with depressed asset prices that destroyed large amounts of financial wealth. This led to plummeting sales by Japanese art galleries and auction houses.[17]

Since the early 2000s, however, China has turned into the main Asian art market following super-rapid Chinese growth a process accompanied by the concentration of wealth at the top of the distribution, in small economic elites of millionaires and

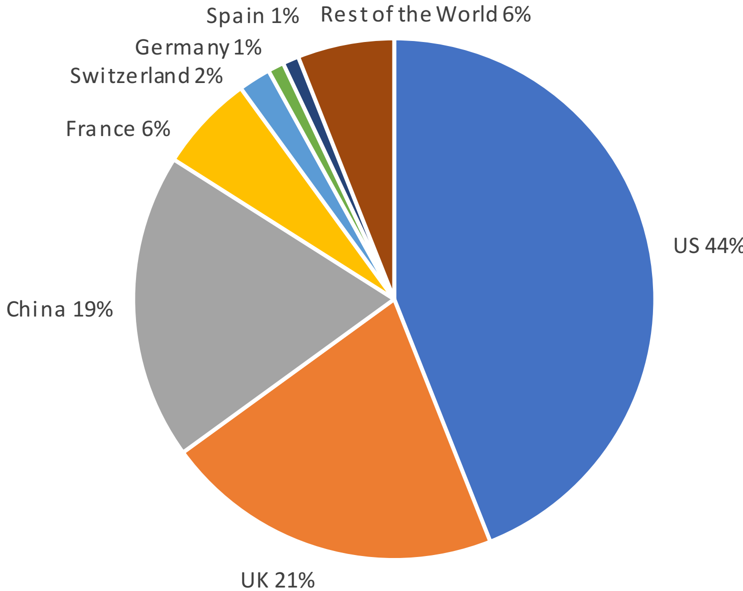
[16] Galenson (2019) traces the development of the modern art market in the early parts of the 20th century as following the end of the monopoly of who and which type of art style could exhibit their work in Paris's Grand salons exerted by the government -sponsored Society of Fine Arts. Claude Monet and a group of impressionists challenged in the 1870s this monopoly and set-up the Salon des Independents, allowing for more pluralism and the emergence of an array of independent art dealers in the late 19th century and early 20th century.

[17] Hiraki, et.al. (2009) examine how changes in wealth and overall macroeconomic conditions in Japan since the 1980s affected the national and international art market.

billionaires. The Hong Kong market has been particularly active along with the sprawl of galleries and the coming of western auction houses in mainland China.[18]

The share of China in worldwide art sales was second in importance in 2017 (21 percent) but fell to 19 percent in 2018 being surpassed, by two percentage points, by the UK (see figure 2). The combined art market of the USA, UK and China concentrated 84 percent of total sales in art in 2018 followed by France, Germany and Switzerland.[19] An economic analysis of emerging art markets in Russia, China and India is Kraeussel and Logher, (2008) with Edwards (2004) providing an examination of the Latin American art market up to the early 2000s.

Figure 2 Global Art Market Share by Value in 2018



Source: Art Market 2019

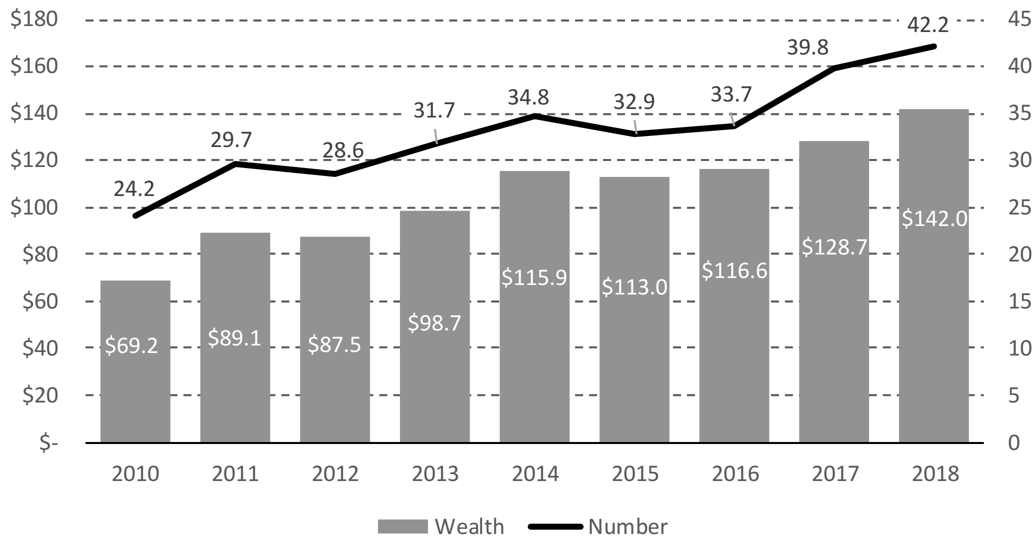
[18] China's State Administration of Cultural Heritage issued new Management for the Auction of Cultural Relics in late 2016, in which some regulations concerning selling cultural relics were relaxed and procedures for applying for auction licenses in the art market were simplified. As a result of this, the country saw a sharp increase in the number of auction houses, with thirteen new houses registering with the Chinese Auctioneers Association in only a year (McAndrew, 2018, 112).

[19] McAndrew, 2019, and Bossier et. al, 2014.

(vii) The Art Market is Influenced by Wealth Inequality

The evidence shows the growth of the art market and the predominance of its upper-end segment has coincided with the rapid increase in the number and assets of wealthy people (from millionaires to billionaires) in the world economy. As shown in figure 3, from 2010 to 2018, the number of millionaires (individuals with net worth above USD 1 million) has increased from $24.2 million to $42.2 million and their assets have grown from $69.2 trillion to $142 trillion, respectively, almost doubling over a period of nine years.

Figure 3. Number and Wealth of Dollar Millionaires 2010–2018



Source: Art Market 2019

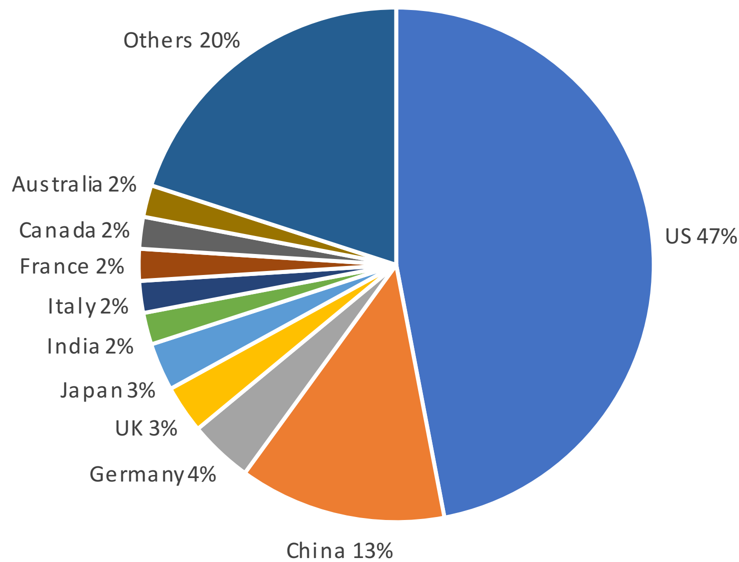
As said the top importance of the US art market is related, among other things, with the fact that the United States concentrates the largest number of millionaires (43 percent of the world's HNWIs), ultra-millionaires (49 percent of global ultra-HNWI), and billionaires, (32 percent of them), see table 4 for 2017. In turn, China comes third in terms of millionaires (6 percent), and second in terms of ultra-HNWIs (13 percent) and billionaires (26 percent), showing the formation of a powerful wealthy elite in China with very high high-purchasing power that is increasingly devoted to the acquisition of artwork.

Table 4 Global Share of Millionaires (HNWIs), Ultra-Millionaires (Ultra-HNWIs) and Billionaires in Total Personal Wealth (percent, 2017)

HNWIs (Wealth above U$1m)		Ultra-HNWIs (Wealth above U$50m)		Global Share of Dollar Billionaires in 2017	
	Share		Share		Share
US	43%	US	49%	US	32%
Japan	8%	China	13%	China	26%
China	6%	Germany	5%	Germany	4%
Italy	4%	UK	3%	Russia	3%
France	5%	France	2%	Sweden	2%
UK	6%	Australia	2%	UK	2%
Germany	5%	Canada	2%	Switzerland	2%
Canada	3%	Switzerland	2%	India	2%
Australia	3%	Italy	2%	Turkey	2%
Korea	2%	Japan	1%	Canada	1%
Others	16%	Others	19%	Others	24%
Total	100%	Total	100%	Total	100%

Source: McAndrew, C. (2018) and Credit Suisse (2017a and b).

Figure 4. Global Share of Millionaires with Wealth in Excess of $50 Million in 2018

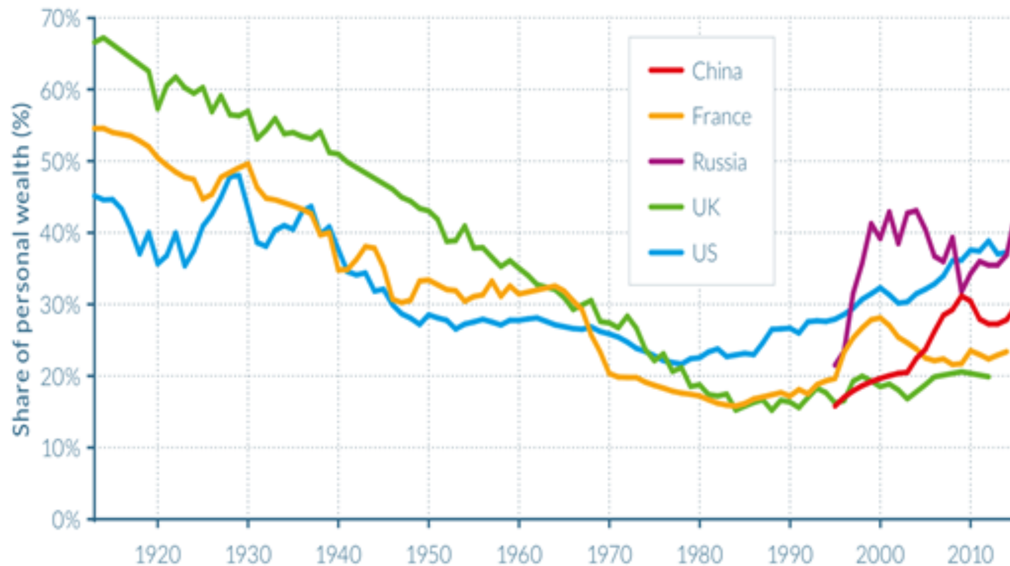


Source: Art Market 2019

Regarding indicators of within-country concentration of wealth, the data shows since the 1980s, a significant increase in the wealth share of the top 1 percent in the USA, China, Russia a trend that was more moderate in France and the UK. Historically, the evolution of wealth inequality in the 20th century in main economies follows a U-shape: there was first a decline in the concentration of wealth at the top between the 1910s and the 1960s in these countries, followed, since the 1980s, with the onset of free market policies and globalization by higher wealth concentration at the top in these economies.[20]

Figure 5. Top 1% wealth shares in main economies, 1913-2015: the fall and rise of personal wealth inequality (selected countries)

[20] Around 1913 in the US, UK, France the wealth's share of the top 1 percent was in the range 45-65 percent, declining, over time, to reach to 20-30 percent in the 1970s to increase afterwards coinciding with the onset of globalization and neoliberalism. Since then, the top wealth's share in the USA roughly doubled from close to 20 percent in the late 1970s to near 40 percent in 2013. In the United Kingdom, since the Thatcher conservative government, the wealth's share of the top 1 percent also increased (stabilizing at around 20 percent in the period 1980-2015), reversing its previous downward trend registered since World War I until the 1970s. In France, the top wealth share experienced a rapid surge in the mid 1990s to decline afterwards, stabilizing at a higher level than its historical record of the 1970s and 1980s. See Solimano, (2018a and b).



Source: www.WID.world (2018).

Although more research is needed on the specific channels through which wealth concentration at the top (among the to 1 % or top 0.1 %) affect the working of the art market and their prices we can identify some of the more relevant effects of macro-economic, sector and micro-economic nature:

(a) A recession or depression caused by a variety of factors (see Solimano, 2020) typically reduces asset prices and the value of aggregate wealth, thereby affecting the demand for art. We may call this a a recession-induced, negative "wealth effect".

(b) Conversely, a boom in the stock market following periods of overall economic prosperity leads to an increases in aggregate wealth benefitting more those at the top that hold proportionally more financial assets in their portfolios (Solimano, 2017) thereby increasing the demand for luxury goods and artwork in particular.

(c) In the case of masterpieces (e.g Da Vinci, Monet, Koons, Picasso and others) the sensitivity of prices to economic downturns and recessions may fail to occur, becoming, eventually, "safe-haven" assets.

(d) A high degree of wealth concentration at the top (unequal wealth distribution) is often accompanied by a growing segmentation in the art market, featuring the creation of a niche market of large galleries and big-internationalized auction houses that specialize in the trading of artwork of high value acquired by rich collectors. Empirically, the demand for expensive artwork seems to be highly correlated with the number and stock of wealth of millionaires and billionaires.

Research investigating the impact of wealth inequality, stock prices and the art market includes Goetzmann, Renneboog and Spaenjers (2009). These authors, using a long term art price index from 1905 to 2007 for the British art market found a positive correlation between wealth (and income) inequality and art prices, a relation that becomes stronger after the 1970s when wealth inequality increases in Anglo-Saxon countries and elsewhere. A mechanism accounting for the positive correlation between wealth inequality and art prices is precisely the appreciation (rise) in stock prices during economic expansions that benefits mostly those at the top segments of the wealth distribution. The authors conclude that in periods of increased wealth inequality we should expect a boom in the art market as liquid wealth holders invest more strongly in artwork. A boom of such characteristics was observed in the years preceding the onset of the global financial crisis of 2008-2009 as we shall show in the next section of the paper.

3. Art Prices in the Cycle 1998-2018 in Comparative Perspective

Returning to the issue of how macroeconomic fluctuations and cycles of boom and bust in economic activity affect the art market in this section we investigate the behavior of *art prices* (taken from Artprice.com) during macro/financial cycles. The art price indices used are weighted averages of the price of paintings, sculptures, prints, photos and artifacts. The indices are global and also for main national art markets. They are obtained, mostly, from reported transactions by auction houses (deducted their premiums), therefore may not necessarily reflect the reality of the *whole* art market that includes also transactions carried-out by galleries in which privates sales are not often reported and collected in a systematic way. Art prices are expressed in real US dollars and real euros on a quarterly basis covering the period 1998-2018.

These two decades are rich in economic events with lasting global impacts. They register cycles of boom and bust taking place in main economies such as the prickling of the dot.com bubble in the United States market in the late 1990s and early 2000s, then the boom in the real estate market in various advanced economies (USA, UK, Spain and others) a boom that suddenly crashed in 2007-08 giving rise to the global financial crisis of 2008-09. Then, the crash was followed by a generally erratic recovery of output, employment, investment. The recovery in stock prices and to some extent in housing prices in the following decade was stronger than the recovery of the real sector of the economy due to the injections of liquidity through various rounds of "quantitative easing" by main central banks.

These shocks and cycles had important effects on the art market and financial markets in general that need to be studied in greater detail. Here we compare the evolution of art prices during this period with the ups and downs of stock prices and gold prices. In general, stock prices are highly *pro-cyclical*, rising in upturns and falling

in downturns while gold prices tend to be *counter-cyclical* exhibiting safe-haven features that makes the comparison with art prices interesting and relevant.

We can distinguish four phases in this period for the global art price index expressed in USD:

(i) a long boom — speculative spree?— between 1998 (Q1) to 2008(Q1) in the decade before the onset of the global financial crisis,

(ii) a sharp price correction at the time of the crisis in 2008-09,

(ii) a strong but relatively short rebound in 2009-2011 and

(iii) a new correction, followed by ups and downs in art prices through 2018 (see table 5 and figure 4).

Table 5. Global Real Art Price Index, 1998-2018 (in USD, 2015Q4=100)

Pre crisis increase (T/P)	**Change, %**
(1998Q1-2008Q1)	64.6
Crisis correction (P/T)	
(2008Q1- 2009Q4)	-39.6
Recovery/Boom (T/P)	
(2009Q4- 2011Q3)	77.0
New correction (P/T)	
(2011Q3-2018Q4)	-53.0

Note: T= Trough, P=Peak. Elaboration from series from Artprice.com in real dollars of 2015 Q4, deflated by US CPI.

In general, art prices followed the general cycles of economic activity and financial cycles in the sense of appreciating in the booming years before 2008-09 , falling sharply during the crisis and recovering afterwards, although that recovery was erratic and volatile.

The cycle in stock market prices (Standard&Poor 500) differed in *intensity* from the cycle of art prices (table 6). The increase in S&P500 *before* the crisis was relatively modest when compared with the appreciation in art prices. In fact, between 1998 and 2007 the S&P 500 index increased by 14 percent (trough to peak) compared with the 65 percent increase in the USD art price index over a similar period. In turn, at the time of the crash, the S&P500 correction experienced a decline of 47 percent between 2007 Q3- and 2009 Q1, in real terms. Then *after* the crisis there was a very strong and protracted rebound in stock prices: an increase of near 200 percent in the real S&P 500 from the bottom of the crisis in 2009 (Q1) and the last quarter of 2018 (see table 6). The relatively steady upward trajectory of the S&P 500 in the post-crisis decade contrasts with the more volatile behavior in global art prices over the same period (see figure 6 below).

Table 6. Real Stock Market Prices (S&P 500), 1998-2018 (2015Q4=100).

Pre-crisis increase (T/P)	**Change, %**
1998(Q1)- -2007(Q3)	14.2
Crisis correction (P/T)	
2007(Q3)- 2009(Q1)	-47.0
Post-crisis recovery/boom (T/P)	
2009(Q1) – 2018(Q3)	197.0

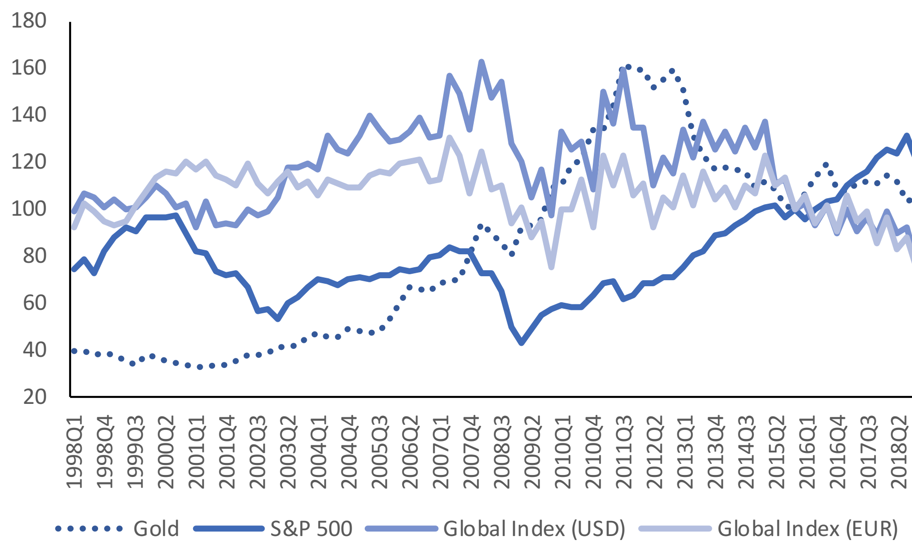
In turn, if we compare the evolution of real art prices with real gold prices we detect some important differences in their evolution in the last two decades. Gold prices experienced a long upward cycle of 11 years—between 2001 and 2011– entailing a 400 percent increase in real terms in that period. Interestingly, and in line with the hypothesis that gold is a truly counter-cyclical/safe-haven asset, there was *no decline* in gold prices *during* the crisis of 2008-09. A correction in gold prices, however, took place *after four years* of the irruption of the global financial crisis and was sharp: a

decline of 61 percent —between 2011 and 2015 — in the real price of gold followed later by a slight increase of 3.5 percent between 2015 and 2018 (table 7).

Table 7. Real Gold Prices, 2001-2018.(2015Q4=100)

Upward cycle (T/P).	Change, %
2001(Q3)-2011(Q3).	401.0
Correction (P/T).	
2011(Q3)-2015(Q4).	-61.0
Recovery (T/P)	
2015(Q4)-2018(Q3).	3.5

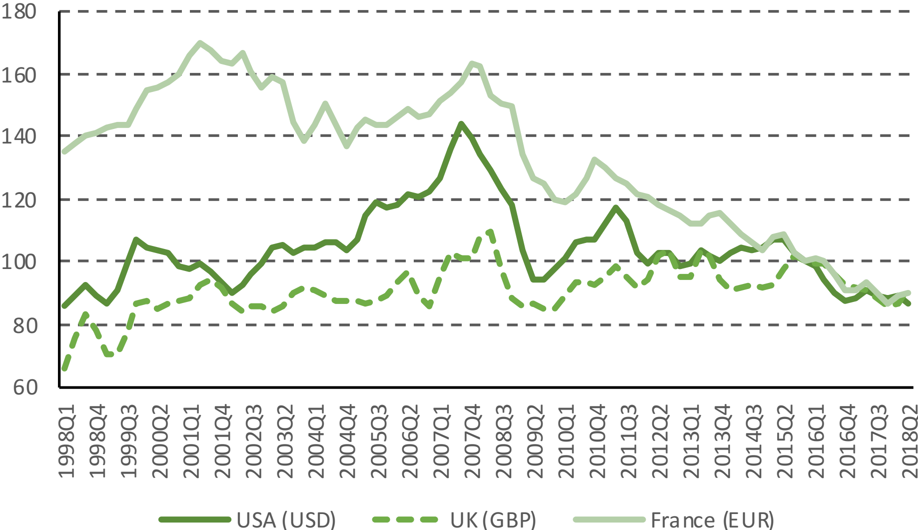
Figure 6. Quarterly Real Global Prices of Assets and Commodities: S&P 500, Gold and Art Price (real prices, 2015Q4=100, 1998 Q1 to 2018 Q4)



Source: Own Elaboration ArtPrice.com, Pink sheet (World Bank) and Yahoo Finance

The evolution of art prices in the markets of the USA, UK and France is shown in figure 7. The chart depicts differences in intensity and duration of the pre-crisis boom among the three national art markets with sharper increases in prices between 2002 and 2007 in the USA than in France and the UK. In addition, in the post-crisis period art prices in France have remained more depressed than in the USA and UK after 2011-12.

Figure 7. Quarterly Real Art Market Price by country: US, UK and France (1998Q1-2018Q2, Base 2015Q4=100)



Source: ArtPrice.com

Box 1. <u>Volatility in Art Prices, Financial Assets and Commodities</u>

Box 1 presents for the period 2004-2015 the mean, standard deviation and coefficient of variation of: (i) various indicators of art prices: in USD, Euro, by type of artwork and artistic current, (ii) stock market price indices such as Standard and Poor, NASDAQ and FTSE China A50, MSC index, (iii) gold, (iv) oil and (v) Bitcoin.

Table B1 Volatility in Real Prices of Art Assets and Commodities: (fourth quarter of 2004 to second quarter of 2018, Real prices, 2015Q4=100)

	Mean	Standard Deviation	Coef. Of Variation
Art Price Global Index (USD)	125.36	19.48	0.16

Art Price Global Index (EUR)	108.43	12.24	0.11
Paintings	132.88	28.93	0.22
Prints	119.90	18.77	0.16
Sculptures	126.42	24.48	0.19
Photographs	114.39	20.29	0.18
Drawings	107.15	22.56	0.21
Old Masters	150.08	39.14	0.26
19th Century	135.99	41.82	0.31
Modern	143.10	34.34	0.24
Post-War	117.91	18.43	0.16
Contemporary	133.17	23.54	0.18
USA (USD)	107.27	13.83	0.13
UK (GBP)	94.13	6.10	0.06
France (EUR)	122.93	21.58	0.18
NASDAQ Composite	71.87	27.02	0.38
Nikkei 225	80.70	21.37	0.26
S&P 500	80.93	20.07	0.25
Gold	104.31	31.33	0.30
Oil	188.28	59.78	0.32
FTSE China A50	130.50	42.50	0.33
MSCI World Historical Data	91.26	15.14	0.17
Bitcoin*	350.32	744.51	2.13
Average (Without Bitcoin)	117.59	25.58	0.22
Average	127.71	56.84	0.30

Source: Own Elaboration*Data from 2010Q3

Source: Federal Reserve Economic Data, Yahoo Finance, Investing.com, CoinDesk.com, Pink Sheet from World Bank and ArtPrice.com

In general the results show that volatility indices (standard deviation and coefficient of variation) for global art prices and their various components are lower than the average for the whole group of assets and commodities considered in the table. Within the group of art prices, volatility is higher for the global art index in USD and for the indices of paintings and modern artwork prices. Items with the high price volatility are the NASDAQ composite and FTSE China A 50 and oil prices. Particularly high is the volatility in the price index of a crypto-asset such as Bitcoin (see Solimano, 2018c).

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4. Is Art a Safe-Haven Asset? A Comparison with Gold and other Assets

At times of market turbulence and frequent financial crises an important question is the degree to which certain assets —artwork?— can hedge against market risk, playing the role of a "safe-haven" protecting, at least to some extent, the value of an overall portfolio when there is a market correction in the prices of stocks, real estate and commodities, often associated with a downturns and recessions (Solimano, 2020).

A statistical definition of a *safe haven asset/investment* is one in which its price (or rate of return) is either *uncorrelated or negatively correlated* with other assets of a portfolio, contributing to *diversify* a portfolio. In contrast, adding an asset with a *positive* correlation to the price/return of assets of an existing portfolio will *not* reduce the average risk of the portfolio. We are interested in knowing to what extent art can perform that diversifying role. The aggregate evidence examined in this study, tends to show that art prices behaved in a *pro-cyclical* way during the cycle preceding and following the global financial crisis of 2008-09. This evidence may suggest the art market, *as a whole*, has *failed* to serve as a safe haven/counter-cyclical asset to diversify portfolios. Of course, as discussed before some individual items of famous artists —the so-called masterpieces— may not be affected by downturns and recessions and their price can even increase in bad times. Our evidence is based on aggregate price indices and we would need to know also the behavior of individuals prices during the last twenty year cycle to discard art as a diversifying asset.

To explore further the issue of safe-haven assets during main downturns we look at the behavior of gold prices during three historical episodes of recession/slumps of the last

90 years and then we will present correlations between art prices and the price of other assets.

Evidence I: the behavior of real gold prices in three main slumps

As shown in table 7, real gold prices *increased* in the Great Depression of the 1930s, the stagflation of the 1970s and the global financial crisis of 2008-09.

Examining the first episode, it is clear that while gold prices increased modestly in the decade before the Great Depression (1920-29, in table 7) at the time of the Great Depression (the exact dates of the slump vary according to various economies, Solimano, 2020) gold prices *surged* from 282 dollars per ounce in 1929 (12) to 618 dollars per ounce in 1934 (3) representing an increase of 118 percent, not a bad investment for a depression period.

Table 7. Real Gold Price in Three Slumps (USD per ounce deflated by US-CPI, ratio peak/trough and percentage change)

	Real Price (USD per ounce)	**Ratio peak/trough and percent change**
Great Depression of the 1930s		
1920 (6)	235.15	1.19 (19%)
1929 (9)	281.23	
1929 (12)	282.87	2.18 (118%)
1934 (2)	617.93	
Stagflation of the 1970s		
1970 (12)	215.7	9.48 (848%)
1980 (1)	2,046.0	
Global Financial Crisis of 2008-09		
2001 (3)	350.5	5.39 (440%)
2005 (8)	523.58	
2008 (3)	1,064.96	
2011 (8)	1,891.60	
2014 (11)	1,176.04	

Source: Own Elaboration based on Solimano (2017) and The London Bullion Market Association.

The stagflation of the 1970s affecting mostly advanced economies is another historical episode to test the demand for gold as a safe asset. Stagflation affected main industrial countries through various channels: an acceleration of inflation, oil price shocks, slower economic growth, monetary and exchange rate instability, being also accompanied by geopolitical shocks (e.g the Vietnam war, terrorism in Europe, the Iran crisis of 1979). As shown in table 7, there was an 850 percent increase in the real price of gold between the trough of 1970 (12) and the peak of 1980 (1), a highly profitable investment for such a turbulent decade.

The third episode was the global financial crisis of 2008-09 inaugurating the first worldwide crisis in the 21st century. The price of gold was at U$ 350 per ounce in 2001(3) increasing to US$ 1064.96 in 2008 (3) and reaching a peak of US$ 1891.6 in 2011(8). The cumulative increase between the low of 2001(3) and the high of 2011(8) was near 450 percent.

This evidence points that gold did, indeed, behave as a *counter-cyclical asset* in the three main slumps (great depression, stagflation and global financial crisis), playing the role of an effective hedge against economic turbulence and crises. It preserved and increased its value when other assets were experience economic losses. From the viewpoint of an individual investor, adding gold to a portfolio holding traditional financial assets delivered a degree of diversification (reducing overall value-variance). Another way to see this is looking at the ratio between gold prices and stock market prices (S&P 500) over a long period of time, the century running from 1914 to 2014. From figure 8 it is clear that the ratio *increased in recessions and periods of economic volatility and uncertainty* (the early 1930s, the 1970s and 2008-09 and other milder recessions) and *fell in periods of economic expansion and relative stability* such as the

post -World War II expansion up to the 1960s (the golden-age of capitalism period) and the long bull stock market that took place between the mid-1980s up to the late 1990s (neoliberal speculative phase).

Figure 8. Ratio of the Price of Gold to Stock Market Prices (S&P 500), 1915– 2014

Source: Solimano (2017)

<u>Evidence II: Price correlations</u>

We can see also the potential for artwork to become a safe-haven asset through a matrix of correlation between global art prices and various stock market price indices, gold, oil

and bitcoin. The evidence is not entirely conclusive for all indices but we can detect a *negative correlation* (significant at 99 percent) between the real global art price index in USD and two stock market indices: the real Nikkei 225 (-0.33) and the real S&P 500 (-0.37). In addition, the correlation with the MCSI index is also negative and significant but the value of the coefficient is small. At the same time the global art market price index (in USD) has a *positive correlation with gold prices*. As gold is clearly a safe-haven asset, art prices may somewhere share this feature. So correlation indices tell a somewhat different story from the aggregate pro-cyclicality between art market sales/ prices in response to macroeconomic cycles of expansion and contraction.[21]

Table 5. Correlation Matrix between Art Prices, Financial Assets and Commodities (real prices, first quarter of 1998 to second quarter of 2018)

	Nikkei 225	**S&P 500**	**Gold**	**Oil**	**Art Price Global Index (USD)**	**Art Price Global Index (EUR)**	**FTSE China A50 [A]**	**MSCI World Historical Data [A]**	**Bitcoin [B]**
Nikkei 225	1								
S&P 500	0.71 ***	1							
Gold	-0.44 ***	0.1	1						
Oil	-0.5 ***	-0.19 *	0.74 ***	1					
Art Price Global Index (USD)	-0.33 ***	-0.37 ***	0.29 ***	0.7 ***	1				
Art Price Global Index (EUR)	-0.01	-0.15	-0.24 **	0.1	0.54 ***	1			
FTSE China A50 [A]	0.14	-0.04	0.04	0.21	0.19	0.19	1		
MSCI World Historical Data [A]	0.88 ***	0.91 ***	-0.14	-0.24 *	-0.24 *	0.09	0.1	1	
Bitcoin [B]	0.59 ***	0.68 ***	-0.3 *	-0.33 *	-0.11	-0.51 ***	-0.54 ***	0.69 ***	1

Significance (99%)*** $p<0.01$, signficance (95%) ** $p<0.05$, * significance 90%(

[21] The art price index in Euros is also negatively correlated with S& P 500 but the correlation with Nikkei 225 is very small (both are statistical insignificant). In turn, the correlation between art prices in Euros and gold is negative.

p<0.1).

[A] : Correlation are calculated from 2004Q4

[B] : Correlations are calculated from 2010Q3

Finally, the correlation between the global art price indices in USD and Euro with oil prices is negative and the correlation with the China stock market index is positive but not large. The correlation with bitcoin prices is negative for the art price index in both USD and Euro and relatively sizable. This could reflect some competition between artwork and bitcoin in investor's portfolio.

5. Concluding Remarks

The art market shows both a considerable sensitive to macroeconomic cycles and financial crises and the degree of wealth concentration at the top. In addition, it is a market affected by transaction costs, liquidity issues although the increasing use of financial techniques to this market may ameliorate these problems but create others. The market is also subject to industry concentration and polarization with sales concentration in the upper-end of the market dominated by a handful of big international galleries and auction houses. Art sales in the upper niche of the market have increased at a time of explosive rises in wealth inequality in the global economy. However, the medium and small size galleries account for near 80 percent of employment creation and number of sales in the art market indicating its dual and segmented nature. Geographically, the bulk of art market sales are concentrated in the USA, UK and China, with the three markets amounting to more than 80 percent of total sales followed by France, Switzerland and Germany.

The paper underscores the pro-cyclical nature of the art market and its sensitivity to macroeconomic cycles and financial volatility. Global art market prices increased substantially in the decade preceding the global financial crisis of 2008-09, experienced

a big correction in 2008-09, recovered fast between 2009 and 2012 followed by a new correction and a volatile recovery afterwards. On the other hand, the recovery in the price of stocks surpassed by far the recovery of art prices in the decade after the global financial crisis of 2008-09. Gold prices, in turn, experienced a steady rise since 2001 and were unaffected by the crisis of 2008-09 reaching a peak in 2011 when a correction took place. Historical evidence of slumps and periods including the Great Depression of the 1930s and the stagflation of the 1970s underscore the counter-cyclical nature of gold. Correlation analysis of art prices for the 1998-2008 period shows a negative correlation with stock prices and positive with gold pointing in the direction of art as a counter-cyclical asset although the aggregate evidence is still pro-cyclical to macro cycles.

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