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Performance and correlation of art as an alternative asset class during the current financial crisis

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Background

In this short research paper, Deloitte in collaboration with Dr. Rachel. A. J. Campbell from Maastricht University take a look at art as an alternative asset, and look specifically at how the performance and the very low correlation between art and equity presented in previous academic papers is affected by the current financial crisis.

We look at the return and correlation characteristics of art using art market indices covering a variety of art market sectors, including the Old Master, European Impressionist, Modern and Contemporary art markets.

We have elected to use art market indices produced by Art Market Research since they provide a wider and more frequent source of information and they are one of the most widely quoted indicators of art market performance.

A certain number of caveats need however to be kept in mind. The performance reported by art market indices should generally be regarded as "an upper bound" on the average return investors have received. Five issues are usually encountered with art market indices; first they are based on auction prices and those do not represent fully the art market, secondly the presence of a survivorship bias as the works that are bought-in at auction are generally not included, thirdly despite there is a fairly high liquidity in the Art Market Research data; nearly 122 000 sales and 24 000 sales in the Art 100 index; we do not know the changes over time, fourthly is the timeliness due to the time lag between the events and the index publication data and fifthly transaction costs are not included.

Additionally, the art market indices published today are not investable, meaning that an index portfolio cannot be created by allocating funds into the index constituents according to prices and weights used in the index calculation process. Hence, they have to be considered as an indicative market measurement tool.

Art markets performance is affected by the current financial crisis however at a lesser extent than equity markets.

Using the data covering the period from January 1976 to March 2009, we have 33 years' worth of monthly index return data for a variety of sectors. In exhibit 1, we can see that the general art index has given an average annual return of 9.6%. More specifically, Old Masters have generated 9.1%; European Impressionists, 10.6%; and Modern art averaging around 10.6%. Contemporary art (data starts in 1985 and covers only 24 year period) showed the highest returns at an average of 14.3% on an annual basis. When compared to previous analysis, we observe a substantial increase of the average return per year of at least 3% across all art market sectors. However, a cautious interpretation is necessary when looking at those numbers as this increase in performance is mainly driven by a very strong positive performance of art markets in 2007 i.e.: 166% for the Contemporary art sector.

Looking more specifically at the impact of the financial crisis, we observe that all art market sectors peaked around October & November 2008 as shown in the exhibit 2. From their peaks to the end of March 2009, the art market sectors experienced negative performances ranging between -6% for the Old Masters 100 Index to -30% for the Modern Art 100 Index. It is also interesting to note that it is the Modern Art 100 Index that lost the most, -30%, and not the Contemporary Art 100 Index, -22%, as generally anticipated.

For the first three months of the year 2009, we observe a mixed pattern between art market sectors with positive performances of 17% for the Old Masters 100 Index and 2% for the European Impressionists Index while negative performances of -13% for the Modern Art 100 Index and -10% for the Contemporary Art 100 Index.

Overall, the Art 100 Index lost 17% from its peak however still had a positive performance of 8% for the year 2008 compared to -42% for the MSCI World during the same period. For the period spanning the first three months of 2009, the Art 100 Index shows a flat performance while the MSCI world index contracted by -12 %.

Correlation between art and equity increased substantially during the current financial crisis

To look at the evolution of the correlation between the art markets and the equity market, the methodology applied consisted of constructing 12 month moving averages of the equity data to make them comparable with the Art Market Research data. In exhibit 3, the results are plotted for the MSCI World, MSCI US and MSCI UK equity data and the Art 100 index.

From the results, we observe a substantial increase in the correlation between art and equity during the current financial crisis. Correlation coefficients are around 10% for the full period of data and extremely highly correlated at over 45% for the Art 100 Index for the last two years as shown in exhibit four. Similar patterns can be observed for global, US and UK equity markets with the various art markets. Likewise, USD denominated or Euro is also insignificant. The fall in the art market, although less significant than for the equity markets, is sufficient enough to have increased substantially the correlation between the art and equity markets.

Looking at the different sectors, we observe that the correlation with the equity market is even higher for the Contemporary market, Modern art market and Impressionist art markets: between 52% to 59%. However, far less for the old master market with almost zero correlation, even in the short term. It appears that the old masters sector has been ridding the credit crunch very well. Either the downturn is somewhat delayed into this high-end market, or the type of investor is different in the old master painting market.

This may not be a surprise as correlations are not stable. While stocks are exposed to some different economic and political risks than are art, they are also exposed to some of the same risks that can impact the global economy. And when those risks materialize especially during times of financial crises, correlations among all asset classes tend to increase. In a period of global crisis the benefits of diversification tend to disappear. Also, we can observe an increase in correlation when extreme market movements occur.

Conclusion

The average annual performance for each art market sector is higher than the one reported in previous studies; however this is mainly driven by the extraordinary results of the art market in 2007. Since October 2008, we observed that all art market sectors have been negatively impacted by the financial crisis in different ways. The more speculative sectors such as modern art and contemporary art sectors have lost up to -30% from their peaks and showing no signs of bottoming out at the end of March 2009 while the old masters painting market lost only 6%. The current performance contraction of the art markets although less severe than the one experienced by equity markets and art markets in mid-1990s also impact the correlation between the art and equity markets. For the last two years, the correlation increased substantially to more than 50% for contemporary, modern and impressionist art sectors while remaining close to 0% for the Old Masters sector. Should this trend be confirmed and not only be the result of the current financial crisis, the opportunities that art could play in portfolio diversification would reduce in particular for certain art market sectors. Using the rules of Elton, Gruber, and Padberg¹ to derive the condition for a “security” to enter an optimal portfolio and assuming a high correlation between art and equity markets; it would imply that the minimum return after transaction costs art has to deliver to be considered as a good candidate to be included in an investment portfolio would have to increase substantially.

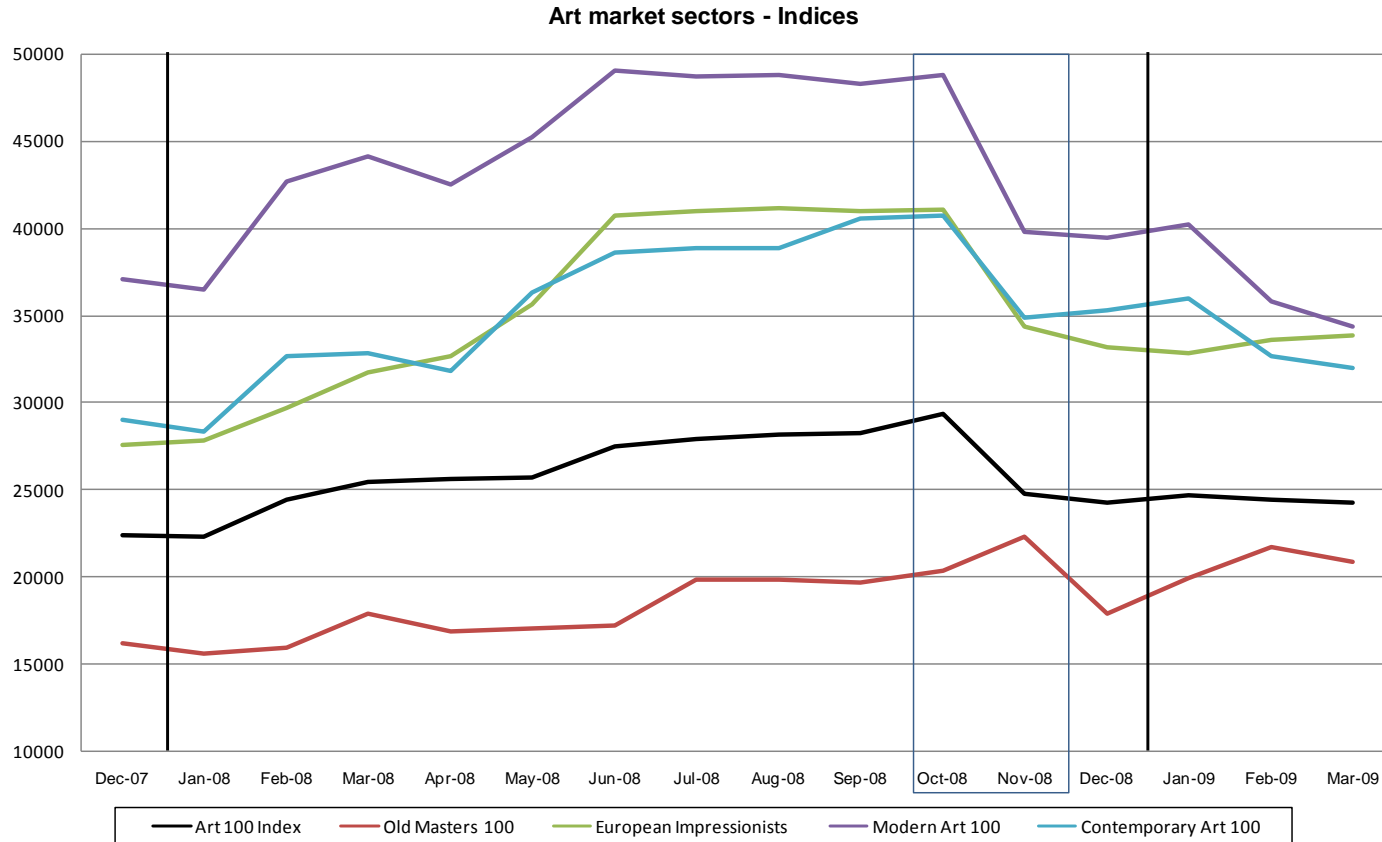
¹ Elton, Gruber, and Padberg (1976). “Professionally Managed, Publicly traded commodity funds”. The Journal of Business. Appendix A . Vol. 60 N° 2. April 1987. & Elton, E.J., Gruber, M.J., Brown, S. J., Goetzmann, W. N. “Modern Portfolio Theory and Investment Analysis”. Wiley. USA. 6th Ed. 2003. p.275

Exhibit 1
Summary Statistics
12 Month Moving Averages

January 1976- March 2009	MSCI WORLD - TOT RETURN IND	MSCI USA U\$ - TOT RETURN IND	MSCI UK - TOT RETURN IND	Art 100 Index	Old Masters 100 Index	European Impressionists	Modern Art 100 Index	Contemporary Art 100 Index
Annual Av Return	9.37%	10.48%	12.40%	9.59%	9.14%	10.59%	10.63%	14.29%
Annual St Dev	4.60%	4.68%	4.62%	25.04%	34.80%	37.77%	20.02%	37.67%
Average	0.008	0.009	0.010	0.008	0.008	0.009	0.009	0.012
St Dev	0.013	0.014	0.013	0.072	0.100	0.109	0.058	0.109
Skewness	-1.064	-0.962	-0.714	-0.213	-0.152	0.228	0.184	3.620
Kurtosis	1.484	1.463	0.995	11.858	18.928	11.855	9.868	25.728
Return per Unit of Risk				0.38	0.26	0.28	0.53	0.38

Exhibit 2

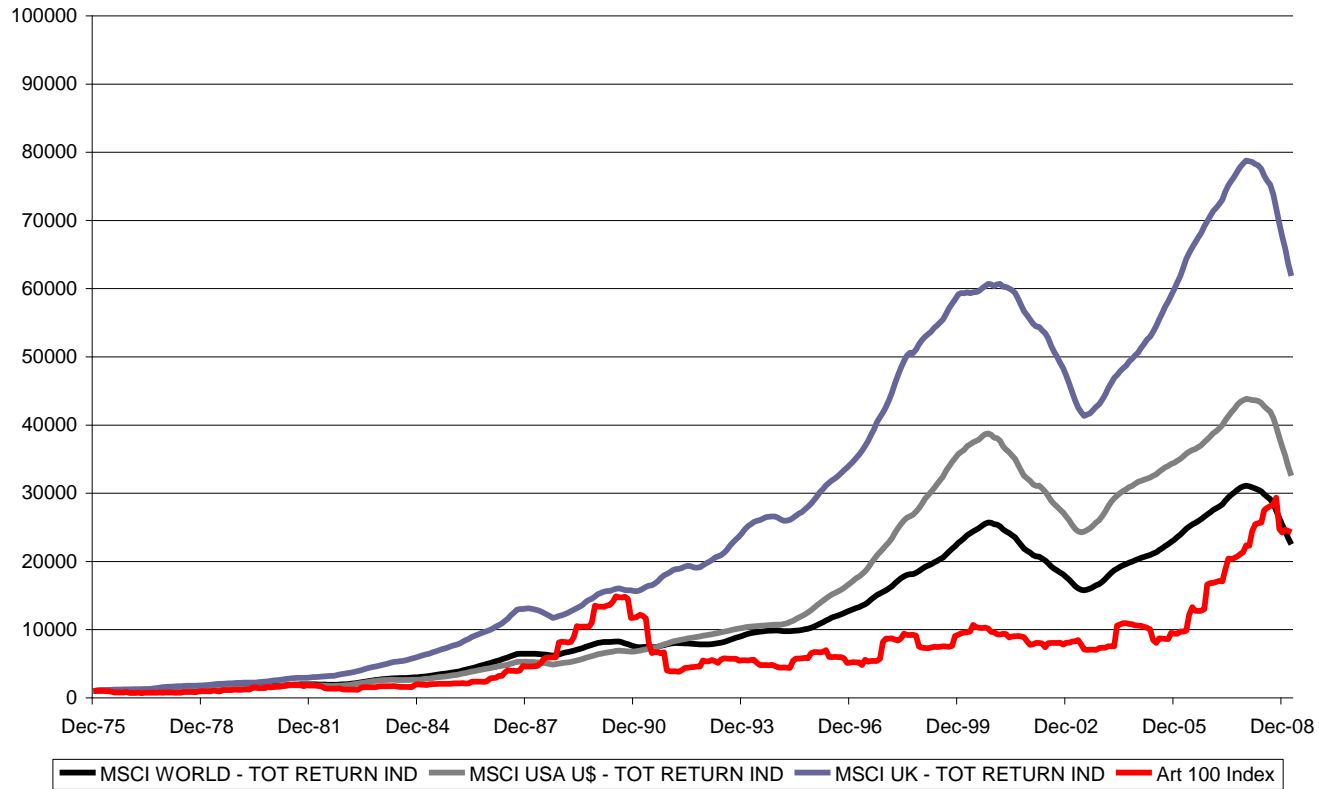
Art market sectors – January 2008- March 2009



Source: © Art Market Research 2009, Deloitte Analysis

Exhibit 3
Art & Equity Indices – 1976- 2008

Art & Equity
12 Month Moving Averages



Source: © Art Market Research 2009, Dr. R. A. J. Campbell

Exhibit 4
Correlation Indices

Art100 with:	World Equity	US Equity	UK Equity
Full period	0.1383	0.1041	0.0800
20 year	0.1305	0.1123	0.1040
10 year	0.2275	0.2102	0.2028
5 year	0.2128	0.2239	0.1602
2 year	0.4574	0.4647	0.4580
1 year	0.4703	0.4709	0.4362

Contemporary Art 100 with:	World Equity	US Equity	UK Equity
Full period	-	-	-
20 year	0.0780	0.0410	0.0358
10 year	0.0737	0.0906	0.0804
5 year	0.1966	0.2498	0.1403
2 year	0.5422	0.5275	0.5504
1 year	0.5248	0.5277	0.4948

** Full period is from January 1976 until end of March 2009, 20 year data from March 1989, 10 year data from March 1999, 5 year data from March 2004, 2 year data from March 2007, and 1 year data is from March 2008.

Modern Art with:	World Equity	US Equity	UK Equity
Full period	0.1392	0.0704	0.1075
20 year	0.1433	0.0884	0.0897
10 year	0.2247	0.2094	0.2230
5 year	0.3494	0.3796	0.3173
2 year	0.5902	0.5838	0.6050
1 year	0.5697	0.5790	0.5416

Impressionist with:	World Equity	US Equity	UK Equity
Full period	0.1048	0.0970	0.0359
20 year	0.1068	0.1125	0.0765
10 year	0.2022	0.2186	0.1555
5 year	0.1930	0.2326	0.1268
2 year	0.5212	0.5150	0.5228
1 year	0.5992	0.5838	0.5609

Old Masters with:	World Equity	US Equity	UK Equity
Full period	0.0141	-0.0093	0.0232
20 year	0.0231	-0.0038	0.0384
10 year	-0.0221	-0.0460	-0.0159
5 year	0.0274	0.0313	0.0474
2 year	-0.0459	-0.0469	-0.0624
1 year	0.0979	0.0835	0.0607

** Full period is from January 1976 until end of March 2009, 20 year data from March 1989, 10 year data from March 1999, 5 year data from March 2004, 2 year data from March 2007, and 1 year data is from March 2008.

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