The Impact of the Economic Crisis on Christie's Amsterdam

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Short Prefatory Note

This thesis has been written to complete my Master's degree in Cultural Economics and Cultural Entrepreneurship at the Erasmus University in Rotterdam. As a Bachelor student of Cultural Economics (ACW) and Business Economics, both at the Erasmus University, this Master's degree offers me the opportunity to combine economics with the art. Studying the arts from an economic perspective allowed me to write a thesis that is related to both the subjects: the Arts and Economics. The result is presented in the thesis in front of you.

In September 2008, I wanted to study a Master's degree in Finance at the New York University in the United States. Unfortunately, I was not qualified for the scholarship. After all the effort I had put to get accepted, all the motivation letters (with many thanks to Dr. Vermeylen) and all the expensive qualification tests, I was really disappointed that my New York dream faded away. I went back to the Netherlands but somehow I could not motivate myself to finish my thesis. In a hurry I moved to Amsterdam, where I met some ambitious entrepreneurs who started a business in recruitment. Before I know I started my own business in this field: Alsters Recruitment. That time, almost one year ago, it was booming business. But nobody could foresee the economic collapse of 2008/2009. From the day in September that Lemon Brothers filed for bankruptcy, everything has changed. Daily economic news report us anxious forecasts of rising unemployment, the struggling housing market, and numerous bankruptcies. A colleague who's husband runs a department of the renowned auction house Christie's reported me every day about all the job cuts as a result of the many cost-reduction efforts. Begin 2009, in the heat of the economic recession, I realized the importance of a university title, and I decided to finish my Master's thesis. But when I read my thesis from almost a year ago, everything has changed. The promising art market where I wrote about is changed in a dangerous speculative market with rising unemployment and falling art prices. I found this unexpected change very interesting. So I changed my title "The Chances of Investing in the Art Market" to "The Impact of the Economic Crisis on the Art Market".

Due to the current economic situation, this thesis is about the influence of economic movements on the art market in the Netherlands, focussing on the auction house Christie's in Amsterdam. I would like to thank numerous people, but I will note the two most important. Fist of all, I would like to give special thanks to Filip Vermeylen for his professional guidance, stimulating support, his time and in particular his patience. Second, I would like to thank my farther who has been very supportive and stimulated me to finish university and told me everything about "de focussering".

1. Introduction

If I had a great amount of money would I spend it on art? And would I spend it on art in times of economic uncertainty? That is the question that kept me busy for the last 6 months. On the one hand, I would like to own a painting of the Dutch School painter Joseph Israels or his son Isaac Israels. Being a great fan of their work, I would simply enjoy an Israels' painting by hang it on the wall and enjoy its aesthetic merits. But on the other hand, I do not want to spend a great sum of money on a painting, knowing the value will decline over time. So, is art a good investment? And, is it still a wise investment in times of economic recession?

While writing this thesis, the leaders of the G8 in L'Aquila, Italy, are together to discuss the fragile state of global economy. Keeping in mind that artworks are luxury goods, and therefore goods of second necessity, we can ask ourselves what the influence of the economic crisis on the art market actually is. On the same day in September 2008, when the British artist Damien Hirst smashed art auction records by selling works for 168 million dollar, the bank Lehman Brothers filed for bankruptcy protection. It seemed that the art market slightly escaped the economic crisis. The last few years, many investors in the art market remain optimistic about the financial stability of art due to the crisis in the financial markets. Unfortunately, disappointing sales at the major auction houses Christie's and Sotheby's have proven that the art market has no such thing as immunity for the economic recession. Is the art market just experiencing a temporary correction or is it facing another art market crash? Will there be a new bubble in the art market, and - not unimportant - is this bubble set to burst this year? In this thesis I will try to examine the answer to these questions.

In the literature, there are numerous studies about the returns on art as an investment, but there are just a few articles that relate to the influence of economic circumstances on the art market. It is well known that income and other economic factors have a great impact on art (see Goetzmann (1993), Buelens and Ginsburgh (1993), and Chanel (1995)], and it could be interesting to examine the links between economic growth and auction market performances. Taking a closer look at art as investment, we look particularly at how auction markets do perform during bear markets. The main focus of the thesis is the theoretical and empirical relationship between the economy and the art market, more specific, art market activities like art auctions. The strategy used in this thesis is to gather information from the established literature to find some claims on art investment and with the help of quantitative data we test them empirically on the auction market of Christie's. We use art auction results to evaluate the development of the auction market and to look for similarities between auction performances and economic movements during the period 1988–2008. However, we first need to reconsider some problems that should be taken into account before making an economic analysis of the art market. It is important to realize that this thesis is not intended to serve as a handout for personal investment decisions; however, it presents a review of the main literature on art investment and describes its current status.

2. Content

2.1 Outline

The outline of the paper is separated in a theoretical part and an empirical part and is organized as follows: First, the theoretical part of the thesis begins with chapter 3 where a brief review of the major literature and previous empirical studies on the topic are presented. In chapter 4 the focus is on the art market and its specific characteristics. Chapter 5 describes the auction market in general, and presents how bidding in art auctions actually works. In chapter 6 we provide a deeper analyses on art investment and explore the underlying theory. We look at benefit and risk characteristics of investing in art, and compare these with other traditional and financial asset classes. Chapter 7 presents the main art market trends and illustrates different analyses into how art performs during times of more extreme market movements. The empirical part of the thesis starts in chapter 8 where we present the hypotheses and describe the methodology how empirical research is done together with a brief description of existing price indices, the variables used and the final dataset. Finally, chapter 9 discusses the research results, following by chapter 10 where the conclusions are drawn.

2.2 Table of Contents

3. Review of Studies

To analyze the impact of economic movements on the auction market of Christie's a theoretical foundation is needed to derive appropriate hypotheses for empirical testing. This chapter provides a review of the general findings of the major studies on the art market. To get a good impression of the established literature a helpful summary is offered in the article "On the Return of Art Investment Return Analyses" from Bruno S. Frey and Reiner Eichenberger (1995). In this article the authors try to find an answer to the fundamental question: 'what are the returns on art investment?' They review more than twenty studies estimating the rates of return of art objects and evaluate the numerous approaches to art price movements taken so far. The various studies differ with respect to the investigated period, as well as the used methodology. Another article by Frey (1997) on "Art Market and Economics: Introduction" describes the development of the main art market literature over the years. In their contribution to this article, Leslie Singer and Gary Lynch (1997) distinguish three phases of the development of the art market literature by economists. Following Singer and Lynch (1997) we have classified the collected literature into their three phases: (1) The first phase consists of the "founders" and is dominated by the path-breaking study by Baumol (1986) who is generally recognized to be the founder of art market research in economics. (2) The second phase consists of the "followers of significant achievement" and holds a number of studies which are influenced by Baumol but which go beyond. (3) In the third phase research is done "essentially following the main stream movements" and contains studies of specific characteristics of the art market. The majority of the studies from the third phase are based on testing claims from the previous two phases.

3.1 Baumol: Founder of Art Market Research

The American economist William Jack Baumol (1922) from Princeton University is generally recognized as the founder of art market research in economics. He was the first economist who seriously investigated the returns on art. Despite some important forerunners, like Wagenfuhr (1965)[1], Anderson (1974) and Stein (1977)[2], Baumol's contribution to the art market (1986) is better known because he published his work during the art market boom of the late eighties, when, not surprisingly, a sudden interest in art market research had emerged. The commonly held view of the eighties, and nourished by the media, is that art yields huge profit in comparison to financial markets. Yet, the majority of the collected studies by Frey and Eichenberger (1995) found lower returns for investment in art than for investments in traditional financial assets like stocks and government bonds.

Also the study of Baumol (1986), presents that art is not such a lucrative investment as the media claimed. In his article "Unnatural Value: Or Art Investment as Floating Crap Game" he translated recorded price data into 640 multiple sales, consisting of "all re-sales," "sales separated by more than 20 years," and "non-speculative re-sales." Baumol estimated that on average, the resale of a painting brought an annual compound rate of return of 0.55 percent compared to 2 percent on government bonds over the period 1650-1960[3]. The most important conclusion from Baumol's findings is that the risk-free yields of financial assets were higher than returns on paintings over the long-term. Baumol ascribes the difference of 1.5 percent to the utility derived from aesthetic consumption.

[1] The first professional economic study on the development of rates of return on art is Wagenfuhr (1965) who's study has been disregarded in the academic literature because it was written in German.

[2] Wagenfuhr (1965), Anderson (1974) and Stein (1977) also contributed articles on financial returns of auctioned paintings, but the topic was not broadly accepted.

[3] Note that the result from Baumol is coherent with the 1.6 percent estimated by Stein (1977).

Like the title indicates, Baumol (1986) also seems to believe that investing in art is similar to a “floating crap game”. In other words, art prices float aimlessy behave randomly. Due to a priori considerations Baumol claimed that in the art market, in particular artworks of the late well-known artists, an equilibrium price level does not exist. Further, Baumol argued that experiencing extraordinary gains (but also extraordinary losses) is possible by holding works of art but only for a short period (less than 50 years). In the long run, the average returns approximate zero.

The underlying price data in Baumol’s work were extracted from Gerald Reitlinger (1961), who collected 6,000 prices of artworks sold at Sotheby's and Christie's in Londen over that period. Reitlinger categorizes the prices into three different types of transaction prices; collector-to-collector, collector to museum, and not just auction prices. Reitlinger recognized that the data were a personal selection of a larger data set, based on the quality of the transaction data, on the authors’ fame at the time and on his personal taste. Many recognized indices from the following literature are based on data from Reitlinger.

3.2 In the Footsteps of Baumol

Since the work of Baumol (1986), a great number of economic studies on the market have emerged. The various studies differ with respect to the investigated period, as well as the used methodology. Baumol's work on measuring the expected returns on art investment inspires a large number of subsequent studies of many economists[4]. Baumol's findings are in line with the results of Bruno S. Frey and Werner W. Pommerehne (1988, 1989) who revisited Baumol's historical returns on paintings by extending his analysis to additional data and to a longer research period (1935-1987). They found that paintings return 1.5 percent annually, compared to slightly more than 3.0 percent for stocks and government bonds. In addition, the authors estimated that for a more recent period (1950-1987) the return on paintings was 1.6 percent, while securities returned 2.5 percent. This corroborates William N. Goetzman's (1993) findings of a real annual rate of return of a 2.0 percent on paintings compared to a 3.3 percent real interest rate of the Bank of England. The important point here is that all these studies conclude that, from an economic perspective, the rate of return on traditional investment assets, like stocks, bonds, gold and real estate, exceeds the rate of return on art in the long run. However, unless their general statement, the authors cannot achieve consensus on the exact size of the difference (Frey and Eichenberger, 1995).

The results from the studies discussed above, are in sharp contrast with the results in the art market literature of the late eighties. Also the boom of studies on art investment is corresponding the increasing arts prices of the late eighties. Thanks to greater transparency, technology and widening prosperity, the art market has been flourished. Time has changed and a new era for art investment had established. Still, authors wrote that art investment in general yields low financial returns, but this time they claimed that art of high quality is a good investment indeed. Singer and Lynch's (1997) paper "Are Multiple Art Markets Rational?" deals with this popular view of the eighties. They investigated the issue of whether it pays to buy 20th century art from a monetary perspective. Their findings show that buyers of art of lesser quality risk

[4] See, for example Frey and Eichenberger (1995) and Klemperer (2004) for a comprehensive review of the literature.

opportunity costs in monetary terms. But, they also claimed that wealthy collectors of the highest quality art do not suffer such a loss. Buyers of the highest quality have lower purchase cost and further advantages due to informational imperfections in the art market. The rate of return for high quality art is over twice as large compared to art created by followers of the mainstream. So returns to high quality art correspond with other stores of value like financial assets. The authors conclude with ''High quality art is a quasi substitute for financial instruments, whereas average-priced art is a consumer good'' (1997, p. 215).

Another claim from the new art market research is the believe that art is able to yield high gains on the short term. The fact that art investment in the long run - Baumol used 300 years - are quit modest does not mean that shorter time intervals are able to reap very high returns. Buelens and Ginsburgh (1993) show that investing in art during particular time periods could result in extraordinary returns. They used the data set from Baumol but this time they categorized the 300 years into five sub periods and distinguish different sub markets (art movements, artistic schools, etc.). Their results proved that the rates of return vary significantly across time periods, and different submarkets.

3.3 Art Market Characteristics

It may seem inappropriate, to use econometrics in studying the art market. However, in the third phase this consideration seems to have disappeared due to the rising interest in the financial return on art. The terms return and risk were rather unfamiliar topics to traditional collectors, but now they are important subjects of study. Although the majority of the literature contains theoretical research, the econometric evidence is catching up rapidly (Campos and Barbosa, 2008). The last twenty years, studying the art market is encouraged by new developments in economic profession; highly developed techniques and new econometric methods are used to analyse the particular features of the art market. The art market offers a new area to explore through modern techniques of finance as it provides a ready source of data to which the economist can use his standard toolbox of theory and statistics (Ginsburgh and menger, 1998). In this sense, the investigated area is irrelevant, what matters are the research methods and the way research is done (Singer and Lynch, 1997). As previously noted, the literature of the third phase is often devoted to test hypotheses from the previous two phases. Moreover, this "late" phase provides a foundation for art market innovation, and is therefore an indispensable part for research development (Singer and Lynch, 1997). The third phase is distinguished in three dimensions:

3.3.1 Art as investment

Previous studies on art investment have compared the rates of return of investment in art to the rate of return to traditional financial assets. But can art be compared to other stores of value such as stocks, government bonds, gold or real estate? For example, the article by Guido Candela and Antonello Scorcu (1997) on "A Price Index for Art Market Auctions" is devoted to this question. They find out that the return on the auctioned representative painting in Italy over the period 1983– 1994 turned out to be obviously lower than the corresponding average return on Italian stocks and government bonds.

Also, the art world's famous academic experts on art prices, finance professors Michael Moses and Jiangping Mei (2002), have been collecting data concerning long-term performances of artworks. Their work resulted in the Mei Moses Art Index, a fine-art price index concentrated on mature artists. The Art Index is constructed as follows: they took the original price and then subtract it from the latest price at the auction houses Christies and Sotheby's in New York. At this way they were able to calculate an annual return for a painting. The Mei Moses Index is widely known for presenting that the returns on art sold at auction over the past 50 years are comparable with the returns of stocks and bonds. They find that art has a lower volatility and lower correlation with other financial assets. This makes art investment more attractive for portfolio diversification than discovered in earlier research. The article on art investment from the Dutch economists Rachel Campbell and C. G. Koedijk (2005) is in line with the Mei and Moses findings. Their findings show an extremely low and almost negative correlation with other financial assets and that makes art a highly beneficial alternative asset class (Campbell & Koedijk, 2005).

3.3.2 More detailed studies on auctioned artworks

The studies from the third phase go beyond by investigating the many possibilities of analysing special kinds of artworks. Most authors focus on a specific genre, an artistic school or individual artists and their portfolios of artworks are characterised by a low degree of diversification. In this review of the established literature, we have seen studies of particular *genres* of art like the article by James E. Pesando (1993) on "the Market for Modem Prints" or the study by Jiangping Mei and Michael Moses (2002) on "the Underperformance of Masterpieces". But also studies on *individual artists* like the paper by James Pesando and Paula Shum (1999) on "The Returns to Picasso's Prints and to Traditional Financial Assets" and the article by Elisabetta Lazarro (2006) on "The Hedonic Value of Originality in Rembrandt's Prints". It is also interesting to look at *particular actors* of the art market proved by Leslie P. Singer and Gary A. Lynch (1994) in their article on "Public Choice in the Tertiary Art Market" or David Trosby's "The Production and Consumption of the Arts: a View of Cultural Economies" (1994). As well as art market in specific *countries* like the paper by Candela and Scorcu (1997) on the

Italian Art Market, the article by Calin Valsan (2002) who compared Canadian art versus American art, and our own Dutch researchers Merijn Rengers and Olaf Velthuis (2002) who investigated "Determinants of Prices for Contemporary Art in Dutch Galleries."

Frey and Eichenberger (1995) also find a new variable that is an important determinant of the prices of artworks, namely; the aesthetic judgment of experts. They also find that the artist's nationality, the size of the work, style, medium of the work, and advertising activities are also important determinants of a painting's price. This method where the characteristics of an artwork are considered to be important factors in explaining its valuation, is called a Lancastrian interpretation and is a common point of departure in many studies. A Lancastrian interpretation is generally used, when economists want to construct an utility function to estimate the rates of return, risk and other financial variables that influence demand for art as an investment. In his article on "The Beauty and the Bulls"; the of Paintings." Michael Bryan (1985) investigated the particular investment characteristics. Or more specific, Susanne Schonfeld and Andreas Reinstaller (2007) devoted their study to the particular character "reputation" in their article "The Effects of Gallery and Artist reputation on Prices in the Primary Market for Art" and the study to the "Death-Effect" in art prices from Ekelund, Ressler, and Watson (2000).

3.3.3 Studies on other forms of collectibles

Thirdly, Singer and Lynch (1997) pointed out that there are new studies on multiples and other forms of collectibles, which means that investigating the art market has gone far beyond paintings, such as photographs photos (Pompe, 1996), prints (Pesando, 1993), antique furniture (Graeser, 1993), sculpture (Locatelli-Biey and Zanola, 2002) and even wine (Ashenfelter, 1989) and violins (Ross and Zondervan, 1989).

3.4 Shortcomings and Limitations in the Literature

While the collected studies above give a good impression of art as an investment, the existence of so many studies has revealed substantial limitations and shortcomings. A main shortcoming in the literature, especially in the third phase, is that most authors within their search to financial returns are too much focused on mechanic calculations and therefore neglect specific features concerned to art investment. Primarily, they just state the hypotheses to be tested with econometric methods aiming to measure data. Second, they treat the art market as any other 'normal' market, and neglect the specific art market characteristics. The article of Frey and Eichenberger (1995), referred in the introduction of this chapter, also presents a summary of the major shortcomings and limitations in the literature on the subject[5]. They argue that it is very important to take the specific characteristics of the art market seriously, and to integrate the institutional and behavioral differences to other markets into the study. According to Frey and Eichenberger (1995) more attention should be devoted to the following problems:

- *Data*

First of all, a major shortcoming in the literature is that almost all art market research is based on auction sales data from the secondary market[6]. This is because auction sales are the most transparent form of art market transactions and are widely publicized and therefore more easily to obtain. Many firms and organisations observe art auctions and commercialize the information about the sales. In addition, the emerge of the internet has made art price information widely available (Mei & Moses, 2002)[7]. Indeed, since almost all auctions are the same, auction data are relatively homogeneous and offer consistent information about the functioning of the art market (Candela and Scorcu, 1997). But, these electronic data sets contain only a small part of the auction

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[5] For an overview, see Frey and Eichenberger (1995)

[6] An exception is made in the study of Rengers and Velthuis (2002). They research determinants of gallery prices in the primary art market or the study of Hutter and Knebel (2007) who compare auction prices with dealer prices.

[7] Some of the main international auction data providers are Art Price Index (http://web.artprice.com/), Art Sales Index (www.art-sales-index.com).

information and the focus on auction data made available by the auction houses disregards other sales that may be quantitatively more important and may show other price development results. The electronic databases enclose less information, for example, than auction catalogues. In addition, because the majority of studies is based on auction data, there is a greater emphasis on the auction market than on other determinants of the art market, creating a false image of the art market in general (Frey and Eichenberger, 1995). Further, auction houses are very careful in providing information to potential buyers. The available information to the public is very important for their sales because the prices are interpreted as indicators of demand. Since they are the provider of the data it is difficult to justify that the data are not biased. Another reason that an analysis based solely on auction data may result in bias is the fact that not necessarily every publicized sale has actually took place. A 'hammer price' does not always lead to a sale price because the artwork might be 'bought in'. (Ashenfelter and Graddy, 2003). An item is said to be 'bought in' if the bidding does not reach the sellers 'reserve price' and the artwork will go unsold. This implies that even if the art object remains unsold, the transaction is recorded as a sale.

- *Transaction costs*

Second, another important aspect that most studies disregard is the existence of the high transactions costs paid in the art market[8]. Transactions costs are much larger in the art market than in other investment markets, in particular in markets for financial assets. Transaction costs in the art market consist of auction fees, which range from about 10 to 30 percent when buying and selling art. The authors also pointed out the importance of other transaction costs like taxes and insurance costs. The estimation of the size of these transactions cost is very difficult because they depend heavily on country, period, and auction houses and vary significantly between types of art objects. The existence of these significant transaction costs influences the calculations of the rates of return.

[8] An exception is the study of Frey and Pommerehne (1989)

- Aesthetic return

The majority of the studies are mainly focussed on the financial rates of return and compare these rates to the rate of return to other (traditional) financial portfolios. However, art is also consumption good. The benefits from owning an artwork do not only consist in financial returns but also in the psychic return. Frey and Eichenberger (1995) research beyond to find possibilities to capture and empirically estimate the determinants of the psychic returns from owning art, an aspect which has been completely disregarded in the literature. They investigated these determinants and find that psychic return is at least as large as the financial return on art investment. According to Frey and Eichenberger these psychic returns are measurable by analysing rental fees and willingness to pay studies.

- Focus on too narrow fields

Because of the narrow concentration of the research field: focus on a particular genre, artist or technique, the rates of return of art investment might differ considerably from the average art market return (Candela, Figini and Scorcu, 2004). Also the great differences in time period and measurement methodologies make comparison of the outcomes very difficult. Especially, the studies in the third phase are too much concentrated on studying particular aspects of the art market. They devote themselves to increasingly narrow and complicated segments of the art market (Frey, 1997). In their article, Candela, Figini and Scorcu (2004) argue that the specific segments of art market are characterised by different risk and average rates of return and need more efficient measurement techniques to make comparison achievable. Moreover, the existing indices for particular segments of the art market use methods and techniques that cannot be easily generalised. In this sense, the most indices are often just useful for a typical investor, who is only interested in particular aspects[9]. Also the required data used for calculating the indices are mostly only appropriate for the particular segment.

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[9] In their paper, Candela, Figini and Scorcu (2004) developed an "artistic quality adjusted price index." Their goal is to construct an index suitable at different levels of aggregation (artist indices, school indices and a market index).

The fact that none of the literature deals with the question of who is going read it and who is going to use the outcomes, and for what purpose, is in my opinion a major shortcoming in the established literature. There is a growing body of interest from the public in art investment. Newspapers daily report about the record prices and major art deals, but all these simple headlines are not based on academic research. In this context, the accessibility of the research to non-economists becomes a major issue. There is a serious gap between economic research on art investment and the potential public who are really interested in art investment. Moreover, most of the studies are concentrating purely on difficult economic and complex econometric analyses. In this thesis, I have put much effort to make it easily to read by avoiding technical formulas and complex definitions.

4 The Art Market

4.1 Introduction

To analyze the relationship between economic movements and the art market a theoretical base is needed to derive hypotheses for empirical testing in Chapter 8. In Chapter 3 a brief review of the main ideologies, theories and facts from previous studies are already presented. In addition to the review, there is need to present the basic theories of the art market in order to understand the statements presented in the empirical part. The following chapters (Chapter 4, 5, and 6) form an extensive framework of the main aspects concerning the art market, the auction market and art investment to create a solid foundation for the empirical part of the thesis. In this chapter I put effort to create a comprehensible summary of the main strengths and weaknesses of the art market.

How does the art market work? To answer this question we first have to understand the mechanisms at work in the art market and to realize the differences compared to other markets. First, the structure of art markets and the related actors are described. Further, the chapter discuss the main characteristics of the art market together with the specific characteristics of art objects. Finally, the art prices will be discussed, as they are exceptional and differ from prices of other goods. The aim of this chapter is to find an appropriate answer the important question; what distinguishes the art market from other markets?

4.2 Structure of the Art Market

The structure of the art market of today is more or less the same as it was during the seventeenth century. In general, there are two main economic agents in the art market. On the one hand you have the sellers of the art market, mainly the auction houses and art galleries, and on the other hand there are art buyers (Schonfeld, 2007). These two agents interact constantly and this interaction determines the nature of competition and the laws of exchange in the art market. In this chapter we describe the structure and mechanisms that fuel the art market. First of all, we discuss the difference between the primary art market and the secondary art market. Later on, we go into the main participants and the barriers of the art market.

4.2.1 Primary art market

The art market is highly hierarchical and can be seen as a group of strongly related individual markets. The structure of the art market looks like a pyramid with the major auction houses like Christie's and Sotheby's on top and the small local art galleries on the bottom. The lowest level, sometimes called the "primary market" is an unorganized individual market and includes all artworks without provenance. The primary art market concentrates on contemporary art created by living artist who are selling artworks mainly for the first time. Artists with regional reputations supply works to galleries, local art fairs, collective exhibitions, small dealers, and private buyers (Campos and Barbosa, 2008). In the primary art market it is usual to buy directly from artists, the internet or art galleries. In contrast to the commonly held view, some artworks from well-known artist are also available in the primary market. Though, the lack of important information and transparency makes it very difficult for potential buyers to value the quality of the artwork. The primary art market is ruled by high degree of uncertainty and leads to a small number of buyers, a reduced amount of liquidity and thus higher market volatility (Gerard-Varet, 1995, p. 511).

Because of limited accessibility and the lack of transparency in the primary art market, it is very difficult to obtain liable data to investigate primary prices. Therefore, the primary art market has been largely ignored in the literature (Rengers and Velthuis, 2002). In other words, the majority of the studies are focussed on the secondary rather than the primary market[10].

4.2.2 Secondary art market

The next level, the "secondary art market" is the market where art is sold after re-entering the market. In other words, the art market for re-sale. This secondary level is concentrated mainly on ancient and modern art created by nationally recognized artists (or artists who are dead) who face national demand for their works. The secondary art market is generally located in metropolis like New York, London, Paris, and Tokyo. Established artists, significant dealers, and public and private collectors pass around works by the major artists who have reached to make the shift from the primary market. The reputation and the curriculum of the artist in the secondary market are well known, this in contrary with the primary market where almost nothing is known about the artwork and the artist. Therefore, the range of artworks in the secondary art market is wider and trends changes slower than in the primary market.

Finally, internationally recognized artists whose works face international demand form the peak of the pyramid. The major auction houses, in particular Christie's and Sotheby's, are the main players and the exchange of their artworks forms the international art market. On this level, the works of artists of the highest reputation are traded at prices that make headline news. Investors try to select artists that are most likely to make a step to a higher stage, in expectation that the prices of their work may increase consequently. On this level, the art market can be described like an oligopoly, with a small number of established names trading most of the output like the major international auction houses Christie's, Sotheby's, Phillips, and Bonhams (Bates, 1983). The United Kingdom together with the United States account for over half of the world's trade in art, when we estimate in terms of world markets as a potential of sales.

[10] Except for the article of Rengers and Velthuis (2002) where the authors investigate determinants of gallery prices in the primary art market.

4.2.3 Art market actors

The various participants of the art market have different positions and each play an important role in the functionality of the art market. The first group among the participants are the artists, who create and sell art. The second group consist of collectors who buy and sell the art for aesthetic enjoyment along with the incentive that art has a certain degree of value as investment. Further, art dealers and gallery owners buy and sell art in order to run a profitably business. They operate by controlling art supply by contracting artists and increasing demand through advanced marketing or boost tactics to attract long-term collectors. Auction houses differ from art dealers and gallery owners in that they offer services instead of selling artworks. They offer verification services such as tax, legal, insurance and transport advice, to reduce the risk for the buyer (Bates, 1983). Auction houses derive earnings primarily from commission charged to both buyers and sellers on their sales. Art dealers, galleries and auction houses have their own art experts and historians, who research and establish artworks for its aesthetic and historic achievement. Finally, there are art investors, who buy art purely for monetary reasons and search constantly for the ability to turn price rises into profit. Portfolio managers search for bargains; they look for underpriced artworks, which will generate above market returns.

4.2.4 Art market centre

"The buying and selling of high quality oil paintings is truly an international activity. The marketplace itself is centred in New York and London, with New York slowly becoming the premier city of the art world."

Constance S. Bates, 1983

With these words Constance S. Bates started his article "The Art Market" in the journal of the *Academy of Marketing Science* in the summer of 1983, my year of birth. When I red this sentence I realised that this article is not useful for the thesis anymore because in the past 26 year, the art market has changed completely. The traditional competition between art markets in London and New York is replaced by a worldwide competition. The traditional art centres, like London and New York City, were Bates wrote about are loosing their monopoly positions. Currently, the competition is getting more and more a worldwide competition. Art today is world business; the market extends to all continents. As the world economy globalizes, many art lovers search worldwide looking for new talent in developing countries. Currently, collectors are not just buying from galleries around the corner. Instead, many hunt the globe looking for talented artists in developing nations. Because of this new demand prices of work by contemporary Chinese, Indian and Russian artists has rice to millions of dollars at auctions. According to many authors, art prices are increasing because the art market, in particular the contemporary art market, is attracting attention from a new kind of wealthy collector. It is possible, of course, that collectors from the emerging economies place greater importance on artworks and artists from their own country. In 2008 the auction house Christie's reported record sales of Asian art from buyers from China and India. Also its rival Sotheby's claimed 2007 was its best-ever year for Russian art sales. According to Artinfo.com[11], Christie's is hopeful that the major sales in emerging markets can work as a hedge against more disappointing sales in the traditional art markets like New York, London, and Paris (2008). Despite the fear of overheating markets collectors continue looking for artists and niches where prices still have room to run.

[11] Artinfo.com provides art news from around the world, as well as events, museums and gallery information, jobs, and auction reviews.

Although it may not have seemed possible a few years ago, the art market has become a more global market with new buyers from emerging economies. Nowadays, these new economies are proving to be major players in the worldwide art market. Increasing demand from emerging economies compensates the art market losses of the traditional art centres in the United States and Western Europe. The appearance of new collectors is making the art market less vulnerable for worldwide economic recession by compensating the more or less disappointing results in traditional art centres as New York, London, and Paris. In times of economic recession auction houses are trying to make up for decreased revenue in regions like Asia, Russia and the Middle East.

4.3 Characteristics of the Art Market

In order to understand the nature of art investment we first have to understand the nature of the art market. Previous studies in the literature present some significant differences between the art market and standard financial markets. First of all, art markets are characterized by a stronger dominance of typical inefficient characteristics. The aim of this chapter is to discuss these specific characteristics to get a better understanding of how the art market works. It seems being necessary to sum up the main inefficiencies of the art market in which it distinguish itself from efficient markets:

4.3.1 Heterogeneity

First and foremost, the art market is set apart from other 'normal markets' by the fact that each unit of output is a unique piece of work; no two works of art are identical[12]. In financial markets stocks are interchangeable: your share of Microsoft has exactly the same value as mine, and they are both very easy to sell. On the contrary, art objects are not interchangeable: your Van Gogh is most likely more expensive than my Van Gogh, and neither of them are easy to sell (Salmon, 2007). Artworks are heterogeneous goods, bought and owned for their specific characteristics, rather than for the commodity itself. Therefore such goods are called "hedonic goods" (Lancaster, 1966). Every painting is different and therefore it cannot be reproduced. This principal is called the heterogeneity of the art market. This also means that in the secondary art market the supply is fixed, so the price is exclusively set by demand. Prices are linked to the different characteristics of the artwork. This means that each work adds its own qualities, resulting in price differences within a given range (Grampp, 1989). Moreover, the problem of heterogeneity makes it is very difficult to construct a liable price index, because the only way to compare prices is among prices of the same art object at different times (Candela and Scorcu, 1997). Although, most economists agree that art is a heterogeneous good, some authors (Knebel, 2007) pointed out that each artwork has a

[12] Except for prints (see Pesando (1993) for an empirical study of the market for prints), and photographs (see Pompe (1996) for an empirical study of the market for photographs).

limited "degree of substitutability". Each piece of art bears a certain amount of similarity because it belongs to a particular style, art school, artist or technique.

4.3.2 High segmentation

The art market is highly segmented. The composition of an art collection can vary considerably in terms of object types such as paintings, sculpture, ceramics, crystal and antique furniture. Within each object type, there are different styles and trends such as Impressionists, Cubists, and Surrealists. Within each style, there are numerous artists, and each artist has a variety of different works. Most galleries deal with just one medium (oil paintings, prints, antique furniture, etc.) and one style (old masters, contemporary art, Impressionists, etc.). Moreover, most gallery owners or collectors deal with one or only a few artists, all in the same medium and style. Because of that the art market is highly segmented and there is a high degree of product differentiation (Bates, 1983).

4.3.3 High transaction costs

Another aspect that art the art market can be misleading is the crucial importance of the high fees paid in the art market. Each transaction between the buyer and seller goes along with high commission costs. Auction houses and galleries derive earnings from a commission being paid by both, the buyer and the seller of the artwork. These auction commissions range from about 10 to 30 percent and dealer fees are often higher. Transactions costs due when buying or selling an artwork at an auction are by far larger than in other investment markets, especially in markets for financial assets (Frey, 1997). The size and type of a transaction fee depend on the particular institution, country and period, and may also differ to a large extent between type of art, period and style.

4.3.4 Asymmetric information

Art markets are characterized by a strong dominance of asymmetric information between buyers and sellers (Frey, 1997). Information asymmetry occurs when the seller knows more about a product than the buyer. The market is rather inefficient because of a serious lack of information. Information is costly and often private. Art buyers may not invest in the time or money necessary to obtain information, or sometimes, the information is not readily available to anyone. The opportunity costs of acquiring the appropriate information can be measured in the time and effort or the commission paid to the dealer or auction house at the moment of sale (Robertson, 2005).

George Akerlof (1970), a Nobel Prize winner in economics in 2001, wrote a paper in which he discussed the phenomenon asymmetric information. He analyzed a case of imperfect information in the lemon market where sellers of lemons knew more about the asset than buyers did. Akerlof compared the art market with his lemon market and described the art market as “a rather open market but at the same time a bad capitalist market”. Capitalism is a great system to produce what people want. But, within the art market, buyers do not know what they want and what they are willing to pay because of a lack of reliable information. Capitalism provides institutions that take advantage of the unaware buyers, because buyers are willing to pay more than a painting is worth.

Because of the asymmetric information the art market knows many barriers. Both, from a seller’s perspective as well as a buyer’s perspective, it is hard to entry the market. For sellers, artists, galleries and art dealers, it takes many years to establish a serious reputation (Bates, 1983). Similarly, for buyers there are real cost barriers for a serious entrance. Art is an experience good (see chapter 4.3) and therefore it needs to be experienced and to be enjoyed before its true quality can be revealed. This means that prior knowledge of its value is often difficult to obtain and in some cases it is even unavailable. This asymmetric information puts the ignorant buyer to a great disadvantage compared to the seller.

New buyers will not be successful, because they cannot beat the experienced buyers who are able to recognize bargains and understand the tricks of buying in the art market. Aspirant art buyers will have to invest much time and energy in developing both these skills (Coffman, 1991). Much of the value of art is determined by judgements of the commercial art establishment, which consists of a small elite of art experts who enjoy a "monopoly of taste". Robertson: "The monopolists have access to privileged information that is not made universally available and so the market is drastically distorted in favour of the few" (2005, p. 3).

4.3.5 Illiquid market

In the art market there is no continuously flow of sales like in other markets. In other words, the art market is not very liquid (Mei and Moses, 2002). This is because collectors' tastes change slowly and the number of collectors also increases slowly (secondary markets have limited participation, see Chapter 4.3.4). The most paintings stay at the same owner for a long time and the majority of the paintings are just sold once (mostly after the death of the owner). In addition, there is also a monetary reason; resale of the same artwork within a short period of time is very unlikely, because of the almost certain capital loss (Candela and Scorcu, 1997). Art only sells occasionally and therefore the product turnover has historically been quite low, Moreover, art is not divisible and there are unavoidable delays between the decision to sell and the sale (Chanel, 1995). Art is far less volatile than stocks. When we consider transactions of a particular stock or share, it takes place in time continuously. When we look at transactions concerning a particular artwork, it may be take several decades apart (Robertson, 1997 p. 7). This insinuates that the art market has been dominated by the art lover and not by the investor (Brian, 1985).

4.4 Characteristics of Artworks

There is something special about art, but defining what it is can be difficult. But why is art so special? In his book *Pricing the Priceless* (1989) economist William Grampp wrote:

> Works of art are economic goods, their value can be measured by the market, and the sellers and buyers of art - the people who create and benefit from it - are people who try to get as much as they can from what they have.
>
> (Grampp, 1989 p. 8)

The description above is a typical economist view about art. Many *cultural* economists agree that artworks do *not* operate like 'normal goods' in the market: "Art is defined by individual actors, determined by exogenous developments and subject to changes in value, correlated to changes in taste, over time" (Towse, 2003). Another cultural economist, David Throsby (2001) refers to arts, in a functional definition: "certain activities that are undertaken by people and the products of those activities, which have to do with the intellectual, moral and artistic aspects of human life" (2001, p.4).

Art in general, and in particular paintings, have typical characteristics that separate them from other normal goods. Because all artworks are unique, it can be difficult to control these characteristics (Beggs and Graddy, 2008). Since artworks are unique, heterogeneous and their values are determined by complex social valuations, the price setting of artworks goes beyond the simple law of supply and demand[13]. In the following sub chapters, we compare the characteristics of art objects with normal economic goods, because they are very important for understanding the problems that occur when we study art from an economic perspective. The specific characteristics of art can be found when we consider art as a normal good described in economic theory (Knebel, 2007).

[13] Except at auction, where supply and demand interact directly to determine prices; unless a reserve price is set which is not reached in the bidding process, the secondary market is cleared (Ashenfelter, 1989).

4.4.1 Unique good

Artworks are unique goods. An artwork can be copied but cannot be reproduced, thus each artwork is original. Because artworks are unique goods, heterogeneity is a fact in the art market (Seçkin and Atukeren, 2000). Therefore, each seller of a unique artwork is a monopolist that controls the market because he or she is the one individual that provides that unique good. From the artists' point of view the market is also a monophony; a market were only one buyer faces many sellers (Seçkin and Atukeren, 2000).

4.4.2 Consumption good

Although, this thesis is about art investment, art in the first place, is still a consumption good. According to the cultural economists art offers two types of value: art as investment, and art as consumption good (Robertson, 2005). Depending on the reason why an artwork is bought, it can be either a consumer good bought for its aesthetic merits, or an investment good, bought for a claim on future consumption. Because art is a good of consumption, it should relatively increase with economic growth. The difference between art as an investment and art as a consumption good is explained in Chapter 6.3.2)

4.4.3 Experience good

Art is, according to the literature, an experience good that has to be tested or consumed before its true quality can be revealed. In other words: the more you experience it, the more you appreciate it. Art is also seen as a positive addiction; the more that it is consumed, the more it is desired (Robertson, 1997 p. 3). Like economist David Throsby puts it: "The arts are addictive in the sense that an increase in an individual's present consumption of the arts will increase future consumption" (1994 p.3). Also the authors Lévy-Garboua and Montmarquette (2002) agree with their statement: "The learned people, who are generally lovers of the classical arts, think that very many others would eventually feel like themselves if they were better exposed to them. This remark, which needs to be taken seriously, implies that the taste for arts is acquired or discovered and the rate of art consumption increases over time with exposure" (2002, p.4)

4.4.4 Luxury good

Art is a luxury good. Consumption of art increases relatively with economic growth (Garboua and Montmarquette, 2002). Sociologist Thorstein Veblen (1899) claimed that luxury goods are desired due to their price, which generates a certain amount of status (Tilman, 2006). Luxury goods are goods of second necessity, and therefore easier to postpone then 'normal' goods. For example, aesthetic consumption of an art object seems to be easier to postpone than the consumption of bread. The demand of luxury goods depends on the available income. When a commodity is considered as a luxury good, demand should relatively increase with economic growth. The higher the income, the more it will be spent on art (Grampp, 1989).

4.4.5 Private and public good

Art objects belong to private goods when someone owns an artwork and decides to keep it in his private rooms where it is not visible to others. A private good is a good that can exclude others from consumption and there is rivalry over its use. For example, if a collector buys a painting and stores it in his safety locker, it cannot be appreciated by someone else, and thus excludes others from consuming the painting. In this case, the artwork may disappear from the market. If artworks were a purely private good, then government subsidy would be seen as supporting the pleasures of the wealthy minority of society (Snowball, 2007 p. 4). Because of government support, artworks are also public goods. When an artwork is displayed in a museum for free charge it can be seen as a public good. A public good is a good that is non-rivalry and non-excludable. This means, respectively, that consumption of the good by one individual does not reduce availability of the good for consumption by others; and that no one can be effectively excluded from using the good (Throsby, 1994).

4.4.6 Merit good

Many economists consider art as a merit good. This term goes back to Richard Musgrave (1959), who describes the concept of a merit good as; a commodity whose ownership is regarded as desirable for an individual or society on the basis of some concept of need or norm, rather than the ability and willingness to pay. This is often the case for public goods where no functioning market mechanisms of supply and demand would develop without government support. Art is justified by many to be a merit good, because they believe that art, like higher education, provides desirable spin-off effects for society. The consideration of art as a merit good is often used to defend public subsidies for the arts and art museums. (Pommerehne and Frey, 1990).

4.4.7 Durable good

Finally, art is considered as a durable good which means that is not endangered by destruction. Of course, sometimes destruction of art does take place, but art is not supposed to be destructed (Knebel, 2007).

4.5 Art Prices

The traditionally economic view of price determination for almost all goods and services is that price equals cost of production and price is derived by the interaction of supply and demand. In this sense, in a competitive and efficient market, prices for a certain good are a result of the market equilibrium. Art objects, and paintings in particular, are exceptions. Supply is inelastic and deviations from production costs are marked and persistent (Candela and Scorcu, 1997). However, the price of an art object should be related to the evaluation of complete other assets. Since artworks are unique, heterogeneous and illiquid it is clear that the usual economic toolbox will be of little use in the case of determining prices. Instead, artwork's values are determined by a complex and subjective set of beliefs, future prices, individual tastes and trends. However, there is no basic value for an artwork and therefore it is very difficult to determine a price.

Within the literature, a number of different price determination approaches have been developed. In the first place, prices allow us to separate those who value it highly from those who value it lightly (Bellegerati, 2006). Some economists agree with the American economist and sociologist Thorstein Veblen who stated that when the price of an artwork increases, the more it will be demanded. Baumol (1986) argues that art prices fluctuate randomly. Demand price wanders through very high or low levels, no artist, collector or market expert can say whether the market price is high or low, nor what the equilibrium price is. The supply of artworks is fixed, while the demand fluctuates unpredictably as taste changes. Baumol: "The demand fluctuates widely, following collectors' fads and manias and paintings prices are therefore inherently unpredictable" (1986, p. 10).

4.5.1 Art prices in the primary market

When an artwork reaches the primary art market it means nothing else than that it reaches the art market for the first time. For example, it is brought to the market a gallery or an art exhibition. This is the moment when the price for a work is established the first time. The artist, together with the dealer or the owner of the gallery, considers a price for the artwork. This primary price is based on the costs of making and development of the work. The establishment of the primary price is comparable of the establishment of the price of regular design products like a boat or a piece of jewellery. The age-old mechanism of the economic supply and demand theory defines the final price. When the demand of the artwork increases the value and price will increase also. In general, the primary art market applies: the greater the demand, the higher the price of the work.

4.5.2 Art prices in the secondary market

Since art prices increased in the late 1970s and investor's interest intensified, financial analysts challenged art experts to measure underlying price appreciation in the secondary art market. Like most price statistics, this information takes the form of a price index (Bryan, 1985). The market price of an artwork in the secondary market depends rather on social valuations than on a natural cost of production. The supply concerning art objects, and paintings in particular, is inelastic and deviations from production costs are marked and persistent. Paintings are characterized by the lack of any "natural price" in the classic sense (Candela, 1997, p. 176).

Frey and Eichenberger (1995) find an important variable that is an important determinant of the prices of art works, namely; the aesthetic judgment of experts. They also find that the artist's nationality, the size of the work, style, medium of the work, and advertising activities are also important determinants of a painting's price (Frey and Pommerehne, 1989, pp. 98–99). This method where the characteristics of an artwork are considered to be important factors in defining the price is called a Lancastrian interpretation and is a common point of departure in many studies. A Lancastrian interpretation is generally used, when economists want to construct an utility function to estimate the rates of return, risk and other financial variables that influence demand for art as an investment.

4.5.3 Common values

The most important distinction between artworks and 'normal' goods is that the value cannot be objectively determined. There is no such established method that can determine the value of an artwork. Instead, the price of an artwork is socially constructed (Schonfeld, 2007 p. 143). To estimate the price of an art object, a function of social consensus is needed. Within this function the determinant 'common values' should have the greatest weight. Common values, when buyers take into account the opinion of others while valuating an item, are very important in the final price setting. As pointed out by Shubi: ''unlike the evaluation of many consumer goods, the problem in the evaluation of the value of an art object is by far more dependent on cultural norms and social acceptance than the perceived needs of consumers'' (2003, p. 195). Because the demand for art depends on social values, prices depend solely on the whims of society's tastes (Campbell, 2004).

5. Art Investment

5.1 Introduction

Art and money. Many art lovers state that the two opponents cannot go together. Like the economist Ian Robertson puts in his book: “Art and money might still seem like uncomfortable bedmates (1997 p. 3).” Nevertheless, there is a great amount of money flowing around behind the arts. Newspaper headlines report that millions are paid for paintings at Christie’s and Sotheby’s auctions. When we see that Van Gogh’s Dr. Gachet is sold for 82.5 million dollar, we can conclude that there has to be a relation between art and money. This relation, I want to submit to scientific research. What is the purpose for people to invest in art? And, not unimportant, what is the return on art investment?

Artworks are bought by many purposes. For many people collecting art is a passion, but at the same time it can also be a serious investment. Within art investment, the aesthetic appreciation of an art object is not the only thing that is important. No matter how much an artwork is appreciated by the public about its aesthetics, there is always a financial value kept in mind. The beauty of an art item may be in the eye of the beholder, but it is the art market that sets the price (Campbell, 2004 p. 2). An owner of an artwork may be considered as a consumer of aesthetics and as consumer enjoying a claim on future consumption (Bryan, 1985). In the following we analyze the aspects concerning the choice between buying art as a consumption good or as an investment.

In this chapter we provide a deeper analyses on art investment and explore the underlying theory. We look at benefit and risk characteristics of investing in art, and compare these with other traditional and financial asset classes. The aim is to give a greater insight into the properties and functioning of the art market in relation to other asset classes, and the potential of art funds to become an alternative asset class. Additionally, the chapter uses the literature to gather information about whether art is bought for consumption or investment purposes. After a short introduction to art as an alternative asset class and the comparison of traditional financial assets, the advantages and risks of art investment are discussed. Further, we present the three types of returns on discuss the main anomalies in the art market.

5.2 Alternative Asset Class

In November 2008 the actor Hugh Grant sold a silkscreen print of Elizabeth Taylor by Andy Warhol for 10 million British pounds, just six years after he bought it for about 2 million pounds. It is the kind of return that would make even the most successful hedge fund manager envious. The role of art is changing and it is no longer just appreciated for its aesthetic merits. The fact that the price of an artwork is able to increase over time implies that art objects maintain an investment asset characteristic. Currently, art is seen as a serious investment with financial returns.

Many economists have closely followed developments in the art market. The art market as we know it today is roughly the same as it was during the seventeenth century. In particular, the history of paintings used as security for loans is a long one. In the late eighteenth century, paintings were already considered as a store of value. This early form of art investment was very active, especially in England. For example, between 1800 and 1805, 25000 paintings were held as objects of transactions in London (Chanel, Gerard-Varet and Ginsburgh, 1994). Since the end of World War II, buying and selling art has become a more popular activity. Especially, the last twenty years the environment of the art sector has changed dramatically creating important effects on profit possibilities within art. Since art prices increased in value by 11 percent per year between 1971 and 1984, and by 19 percent per year between 1977 and 1980, the investment character of the art market appears prominent and worth investigation. Currently, investment in art is often considered highly profitable. The last thirty years the art market has shared characteristics with the luxury goods, commodities and property markets. The idea of art as investment is strengthened by some American banks by employing 'art investment counselors (Frey, p.396). Such developments suggest that there is an economic rewarding activity in art, and also suggesting that advanced knowledge helps to improve economic returns in this market. Nevertheless, it is very important to be aware of the risk and return characteristics of this new alternative asset class.

In times of a worsening credit crisis, struggling housing markets, and high cost of gasoline, financial asset classes like stocks, bonds, gold and real estate experience a downswing. Because of the underprivileged performances, investors search for other lucrative alternatives. They constantly hunt for alternative assets that might improve the risk-adjusted returns on their financial portfolios. Some investors consider the opportunity that investing in the art market can compensate their losses in the stock market. But until recently, investment in art has not been considered as a mainstream asset class (Campbell, 2004). The art market is highly illiquid and far from transparent (see chapter 4.4 Characteristics of the Art Market). Because of the heterogeneity, strong prices fluctuations and high transaction costs, art investment could be seen as a highly risky investment strategy. Moreover, art does not pay interest, dividends or rent, therefore returns rely on capital gain only[14]. All these characteristics make art as a new asset class, very unappealing. On the contrary, there are several art funds emerging, with a high gainful investment strategy (Campbell, 2004). So can investment in art be considered as an alternative asset class?

First of all, to answer this question, we have to take the art market as any other market and compare the return on art with returns on financial assets. But can art be compared to other stores of value such as stocks, government bonds, or real estate? How viable is art as a financial instrument? Of course, art markets contain high transaction cost, are very incomplete and in the most cases art markets are very thin (there are few Rembrandts traded per year) but this also holds for some other markets (Frey, 1995). In the literature, the benefits of owning an artwork are often measured by comparing the differences between the financial returns of art investment to the respective returns on financial assets (Frey, 1995).

[14] Though, more galleries and museums are renting their art.

5.3.1 Comparison with financial assets

Michael Bryan (1985) pointed out that paintings and other collectibles belong to the durable goods class of commodities because they offer current consumption and maintain future consumption. In this sense, they differ little from other consumer goods like cars or houses and can be seen as financial assets. In his work Bryan compared the investment return on paintings with the return on traditional assets, including gold, housing, stocks, and bonds for the period of 1971-1984. His correlations reveal a strong positive correlation between the rate of increase in the price of art and in the price of gold.

Moreover, Singer and Lynch (1997) test in their paper the issue of whether it pays to buy 20th century art from a financial point of view. They test the financial value of three categories of art, separated by the artist who created the work of art. They conclude that Category 1 art (by such artists as Picasso, Matisse, and Manet) ''is a quasi substitute for financial instruments, whereas average-priced art is a consumer good'' (1997, p. 215). On the other hand, Goetzman (1995) complains about the rather superficial comparison between the rates of return from art markets and financial markets. "The relevant alternative investments are unclear, and for past periods insufficiently known. Even a comparison to the rates of return in stocks is unsatisfactory as they normally do not consider dividends" (Goetzman, 1993, p. 1374). According to Frey (1995) most studies are concentrated at comparison with interest rates on US and British stocks or government bonds. By doing so, they neglect art investment in other countries and in other assets such as houses or land, whereas real estate investment is more comparable to art investment, because in many countries they also benefit from preferential taxation (Frey, 1995). Art price indexes cannot be constructed like price indexes for bonds or stocks, such as the New York Stock Exchange or the Dow-Jones indexes (Art Market Trends, 2004). However, bonds or stocks are homogeneous goods for which markets open every day, artworks are unique and heterogeneous, and the transactions are occasionally. Even if transactions were more frequently, it is difficult to draw conclusions on returns from comparing different art objects. In their article, Chanel, Gerard-Varet and Ginsburgh (1994) present: "Even if prices were known more frequently, it is difficult to draw inferences on returns from comparing a Velasquez sold in 1870 with a Willem de Kooninck sold in 1985" (p. 9).

5.3 Advantages in Art

Although the art market is often compared with the financial market and the rate of returns are treated the same way, there are some obvious differences between art as an asset class and financial assets. Nevertheless, there are some great advantages in owning art as an asset class over financial assets. Below, the main possible advantages of investing in art are given:

5.3.1 Little correlation

The move towards art investment arises from the low correlation between art and most traditional financial assets like stocks and bonds. The lower the correlation the greater the diversification advantages. Low correlation is therefore highly desirable from a diversification perspective (Campbell, 2004 p. 2). For example, Mei and Moses found that art has a very low correlation with stocks and even a negative correlation with bonds. This extremely low correlation between art and other financial assets make art a highly beneficial asset class.

5.3.2 Better diversified

Because of the lower volatility and the less correlation with other financial assets, Mei and Moses suggest that a diversified portfolio of artworks may play an important role in portfolio diversification (Mei & Moses, 2008 p. 9). Therefore, it can be argued that art can be an essential component of a portfolio.

5.3.3 Less sensitive to political event

Contrary to popular belief, the art market is less sensitive to political events than other assets. Actually, the art market experienced a 256 percent growth in the last great bear market during the Vietnam War (1966-1975) while stocks fell 27 percent (Artprice.com, 2004). When in the wake of the September 11th terrorist attacks when global equity markets were falling, the art market was flourishing and prices were stable. Also the Iraq war did not influence the level of art prices (Campell, 2004 p. 3). More evidence of the stability of the art market was revealed in the article by Mei and Michael (2002) using figures from the 27 recessions dating all back to 1875 which presented that the art market holds up very well in times of uncertainty.

5.3.4 Taxation

Taxes play a very crucial role concerned to buying and selling decisions with respect to art. According to Frey (1995) the world of art investment is strongly influenced by taxation. Yet, a great shortcoming in the literature is the fact that no study seriously writes about the taxes concerned with buying and holding art. Yet, it is well known that in many countries art investment is one of the major possibilities of escaping or at least lowering the tax burden (Frey, 1995). Taxation is very difficult to deal with because taxes vary greatly between countries and period and it is often unknown in which country the auctioned item will end up. Sometimes investors look for other markets when taxes on the transactions in the art market increase. On the other hand, when the general taxes increase, the art market attract many people for solely financial reasons if it offers better chances to avoid taxes in other assets (Frey, 1995 p. 214).

5.3.5 Aesthetic consumption

Collectors and companies do not buy art just for investment. They will not pay millions for a painting for solely economic reasons; they buy art for prestige, status, or a passion for collecting (Campbell, 2005). An important issue is the "value" that art offers in viewing pleasure. This proves the rental art market, where the art consumer enjoys only the art, and the investment returns only to the owner (Bryan, 1985). The pleasure received from an art object about its aesthetic merits is greater in relation to other assets. In this sense, the underlying appreciation of the artwork is very important (Bryan, 1985). This aspect basically distinguishes the art market from pure financial markets.

5.4 Risks in Art

In financial terminology, the return on paintings involves a certain degree of risk. Art is an investment and thus, like any other type of investment, it involves risks. Risk is inseparable from return. To compare art market return with the return of traditional financial assets, one must focus on both risk and return (Pesando and Schum, 1999). Artworks from new undiscovered contemporary artists, may yield very high rewards, but at the same time, such investment entails very high risks (Mamarbachi, Day and Favato, 2000). Art investment requires not only a great knowledge of the art market and the individual artists it also requires a great knowledge of the related investment risk. In their article Frey and Eichenberger (1995) identify two types of collectors; pure collectors and pure speculators. The last type leaves the market in case of unpredictable financial risk, like price variations and uncertain attribution. When risks of investment are too high, it is better for the pure speculator to move to other markets. In this sense, risks concerned to art tend to drive out pure speculators but should not affect pure collectors because they do not intend to sell their holdings in the first place. The future price fluctuations are not the only risk concerned with art investment. Below, the main risks within art investment are summed up.

5.4.1 Theft and damage

Paintings can be damaged or they might be stolen. Finally, there is significant theft and fire risk and cleaning costs involved in investing in art. Of course, insurance is an option. However, the annual cost of insurance against fire and theft may reach on average 0.2 percent to 1.0 percent of the artwork's value[15]. Collectors should keep in mind that paintings have to be kept clean and dry therefore art has warehousing costs concerned with storage of the art objects.

[15] See Frey and Pommerehne (1989)

5.4.2 Change in tax

Some investors have been attracted to art investment because the art market offers beneficial opportunities for postponing tax payments rather than other traditional investment assets. An important issue collectors have to consider, is whether an increase in the value of their art is taxed or whether it is taxed only when the artwork is sold. The latter allows collectors to reduce the unpredictability of their return on investment (Frey and Eichenberger, 1995). When transactions in art are taxed more heavily, speculators move to other markets.

5.4.3 Change in taste

The price of an art object depends on social cohesion. The taste of the public is largely dependent on soci-economic factors, like family, origin, education, trends, and other non-economic factors that are difficult to predict. Social aspects influence the psychic benefits of owning particular genres of art. Some genres will never go out of style and for other genres demand follows a systematic time sequence (Frey and Eichenberger, 1995). Taste movements influence demand and contribute to short-term price instability (Bryan, 1985). For example, some art objects are offensive to particular societies or religions or are for some reason 'politically incorrect'. Because no collector wants to own a 'wrong' artwork prices will fall.

5.5 Returns to Art

'What are the returns on art investment?' This question has attracted the attention of many economists for a long time. One of the reasons for this increased interest originates from investors who belief that the art market yields huge profits. They believe that buying works of art is not only a fun thing to do but also a good investment from an economic point of view. This belief has been nourished by auction houses like Christies and Sotheby's, which report that record prices are paid in an increasingly rapid way. The enormous prices paid for some artworks create a belief that the rate of return on art investments is on average very high (Frey, 1995, p. 207). Another primary aspect of art investment is the psychic benefits of owning an artwork, which in contrast to financial assets like stocks or government bonds, are largely absent.

Owning an artwork includes other types of return, such as aesthetic or psychic benefits simply by enjoying your piece of art. The returns from owning an artwork can be theoretically separated into three different categories of return or utility. First, there is financial return. Second, there is consumption return. Third, there is return from purchasing undervalued assets, the so-called bargains. Each art asset differs in the mix of these tree types of return they offer investors (Coffman, p. 83).

5.5.1 Financial return

First, consider financial returns. Financial returns are measured by the change in the monetary value.Baumol (1986) was the first economist who investigated this financial return to paintings and Ginsburgh (1993) Frey and Pommerehne (1989) revisited Baumol's results. All these findings are based on the recorded underlying price data from Reitlinger (1961). It is well known from these studies that long-run returns to paintings underperformed in comparison to the risk-free yield on stocks or bonds, despite being riskier investments (Ulibarri, 2009 p.136). Most studies have revealed that the average financial return in the art market is smaller than in the bond market (see section 3). Art ownership differs by the fact that investors get no direct value from ownership of particular stocks and bonds. Except when investors value such things as "social responsibility" (Coffman, 1991).

5.5.2 Consumption return

The second type of return, the one that is almost completely neglected in previous economic research, consists of return in consumption. Collecting art is a passion. The return from owning art does not only consist in financial return but also in the psychic return. In other words, art is also a good of consumption. This aspect basically distinguishes the art market from pure financial markets (Frey and Eichenberger, 1995). Consumption return is measured by the difference between the financial return of the artwork and the returns attainable by alternative investments, for example government securities or stocks (Frey, 1997). Throsby (1994) summarizes that aesthetic return consists of the value of the benefit generated from aesthetic pleasure, status symbol, and the prestige of owning a particular piece, which is the consumption value of art investment.

5.5.3 Bargains

Art investors are constantly looking for bargains in the art market. Many art dealers and collectors earn a serious living by finding underpriced assets in the art market and turning them into profit in the financial market.

5.6 Art Funds

Because of the rising art prices and therefore increasing interest in art investment, a great number of funds specializing in art have been emerged. Dealers, auction houses and even banks have established serious art funds. Essentially joint funds for the art world, where fund managers instead of hunting for undervalued stocks to buy up, search for undervalued artists. When you take a closer look at the assets on the balance sheet of the blue chip companies in the S&P 500, or the FTSE 500, or the companies incorporated in the most pension funds you will be surprised to see that you are indirectly investing in the art market (Campbell, 2005). This is because some art funds appear to show healthier returns than traditional assets because they offer a more diversified portfolio. This diversification strategy is possible because of extremely low and sometimes even negative correlation with aspects of traditional financial asset classes like stock and bonds. The high demand for these art funds originates from the desire of private and institutional investors not wishing to hold works of art themselves. The Mei Moses Art Index enables such investors access to the diversification benefits (Mei and Moses, 2004).

In her article "The Art Portfolio of Diversification", Rachel Campbell (2005) is very enthusiastic about the emerging art funds. She eagerly refers to The Fine Art Fund, which invested over 0.1 billion dollar in paintings and sculptors for a period of up to ten years. Campbell (2005): "Holding such a large chunk of the global art market will inevitably have knock-on consequences for prices in the market in general, and may open the way for more art investment funds" (2004, p.4). According to Campbell, art investment in the form of funds, seems to be a highly beneficial, but is still an underrated asset class. Earlier efforts to establish art funds were not successful because of a lack of investor confidence and knowledge of the art market. The lack of confidence is the result of previous failures. These failures are to describe to fund managers who did not have the required specified knowledge of the art market. Investors made the wrong decision to trust the knowledge of financial institutions, instead of art market specialists.

5.6.1 British Rail Pension Fund

There is evidence that art funds have performed well. In July 1996, the British Rail Pension Fund sold the last major artworks from its portfolio of art and antiques. In the seventies an art portfolio was developed as a hedge against inflation. The general real rate of return on art was 6 percent over the period 1974-1996, breaking the Pension Fund's real estate portfolio and reflects what the Pension Fund would have earned on U.K. bonds (Pesando and Schum, 1999). In more detail, the British Rail Pension Fund received an average real rate of return of 9.9 percent on its Impressionist paintings, sold in 1989, and 3.0 percent on its Chinese works and Old Master prints, sold in 1987 (Frey and Eichenberger, 1995). In their work Buelens and Ginsburgh (1993) present a theory which may explain the success of the British Rail Pension Fund. According to the authors, the success of the fund is, to some extend, to subscribe to the timing of its sales. The British Rail Pension Fund began selling art in the late eighties, taking advantage of the enormous price rises of the art market. The high prices reflect a booming art market, and great returns were achieved by selling impressionist paintings to the emerging economies like Japan (see Chapter 7.2.1). Moreover, the great success of the Pension fund may simply be: knowing when to exit the market. A general assumption from the above theories seems to be that returns are very variable over time and therefore timing is very important. This insinuates that the economic situation is very important which leads to the claim that

5.7 Anomalies

In the same way that calendar anomalies like the January-, Holiday-, or Christmas-effect involve patterns in stock returns from year to year or month to month on the financial markets, there also exist some irrationalities in the art market. Moreover, a unique characteristic of art market is the dominance of behavioural anomalies (Frey and Eichenberger, 1995). Generally, the term 'anomaly' refers to an unusual occurrence. A market anomaly (or inefficiency) is a price or return distortion on a financial market and refers to phenomena contradicting the efficient market hypothesis. This chapter focuses on the three particular anomalies in the art market.

5.7.1 Law of one price

Economic theory assumes that, on a competitive and efficient market, prices for a certain good are the result of market equilibrium. This means that in an efficient market all identical goods must have the same price[16]. In economic perspective, this is called the law of one price. However, empirical evidence suggests that the 'law of one price' does not always hold for the art market. There are several studies that have tested the law for different auction houses and in different geographical markets and found systematically and significantly price differences across auction houses and different countries. Pesando (1993) found remarkable price differences even in the market for prints of the same quality selling within 30 days of one another. This is very striking, because the market for prints is able to escape the problem of heterogeneity because prints are reproducible. Therefore, it should be more efficient than the very thin markets of paintings.

[16] A market is efficient, according to the efficient-market hypothesis (EMH) when it is "informationally efficient", in other words: prices on commodities reflect all known information.

5.7.2 Declining price anomaly

Alan Beggs and Kathryn Graddy (1997) established the existence of the "declining price anomaly" for art which refers to a decline in prices as the auction proceeds. They collected a sample of data on Impressionist and Contemporary art auctions at Christie's and Sotheby's in London and New York between 1980 and 1994. The authors find that the price of art falls from the beginning of an auction to the end. In other words, the price relative to the presale estimate falls as the auction progresses. Beggs and Graddy (1997) called this phenomenon "the Afternoon Effect". Also Pesando and Shum (1999) find evidence for the declining price anomaly in the market for Picasso prints. A number of later studies report rather conflicting results in this respect, although the majority still seems to support this anomaly (Ashenfelter and Graddy, 2003, and Ginsburgh and van Ours, 2003)

5.7.3 The Masterpiece Effect

Are masterpieces good investments? A familiar advice art experts give to their clients is to buy the best art they can effort. In other words, buy the most expensive artwork your wallet can manage. Generally, many economists confess that investment in art yields low financial returns. However, for high quality art they would like to make an exception. It is frequently state that art from the established names, like art from Old Masters is always a good investment from an economic point of view. This means that masterpieces of well-known artists will better perform than other artworks at the market. According to this belief, masterpieces outperform the art market. Many collectors and art dealers claim that art of the highest quality, command higher expected returns than middle level and low-level pieces of work. This claim that high-level artworks reap higher returns is called the "Masterpiece Effect".

However, there is very little support in any of the literature for the so-called Masterpiece Effect. According to Alan Beggs and Kathryn Graddy (2008), there is no evidence for this claim and absolutely no theoretical justification (p. 306). Also Pesando (1993) finds no support for the Masterpiece Effect. He investigated repeated sales of modern prints for the period 1977-1992 and his results prove that masterpieces actually underperform the market: a negative Masterpiece Effect. In fact, he found that masterpieces provide the lowest cumulative return[17]. Similar to the work of Pesando (1993), professors Jiangping Mei and Michael Moses (2002) from New York University's Stern School of Business, confirm the underperformance of masterpieces. Their Mei Moses Art Index found strong evidence of underperformance of masterpieces.

[17] See also Ashenfelter et al. 2002

6. The Auction Market of Christie's

6.1. Introduction

The title of the book *Pricing the Priceless: Art, Artists and Economics* by the economist William D. Grampp (1989) indicates that art has no price. But sculpture, paintings and other art objects have been sold on markets since the time of the Roman Empire. Selling art knows a long history. Ships, loaded with Greek sculpture, discovered over the years reveal that sculptures, and other art objects have been sold since the beginning of the Roman Empire. The Phoenician and Roman dealers buy and sell art in trade-markets but also at auction. Throughout the seventeenth century, artist's guilds provide artworks for wealthy merchants. Later on, serious art dealers buy and sell art in order to run a profitably business and auctioneers started to emerge. According to the literature, the first known public auction of art was organized in Venice in 1506 (Chanel, Gerard-Varet and Ginsburgh, 1994). In London, two major auction houses arose; Sotheby's was founded in 1744, and its rival auction house Christie's started in 1762. Many authors have pointed out that the structure of the art market as we know it today is almost the same as it was during the old days (Chanel, Gerard-Varet and Ginsburgh (1994), and Hutter, M, C. Knebel, G. Pietzner, and M. Schafer (2007)].

The latter auction house will be the subject of this chapter. The chapter presents a review of the main research on auctions to shed some light on how auctions and bidding actually work. We begin the discussion in Chapter 6.2 with a brief description of auctioning in general and discuss the English variant and mechanisms at work in the auction system.

6.2 Auctions

There are many ways to sell works of arts. At all times it concerns a transaction between the dealer and the art consumer. In the primary art market, discussed before, consumers buy directly from artists at art school, via the internet or art galleries. In the secondary art market, consumers usually buy art in art auctions. Auctioneering is one of the oldest, open and efficient sale methods. According to Ashenfelter and Graddy (2003) the value of the most important artworks is realized at auction, direct, by an actual sale, or indirect, by reference to other sales and therefore the auction system is thus a critical determinant of how the public's preferences are translated into the evaluation of artistic work.

6.2.1 English auction

Historically, the major art auctions have been the English auction houses of Sotheby's and Christie's. There are all kind of art auctions; auctions with open outcry, sealed bid auctions, but the most commonly method for selling art is the English auction, with an ascending price set-up. This auction method is called English, but is actually Roman. The word auction is derived from the Latin word "auctio," which means to ascend. Bidding starts low, and the auctioneer calls out higher and higher bids. When the bidding stops, the art object is said to be "knocked down" or "hammered down". The final price, when the bidding stops, is called the "hammer price" (Beggs and Graddy, 2008). Almost all art is auctioned in this ascending price format.

The art experts in auction houses estimate, in consultation with sellers, a price range within which they expect each painting to sell and are in the form of a minimum and a maximum price. This price range is reported in the pre-auction catalogues. Furthermore, these catalogues present important information about the artist and the artwork; date of creation, media, provenance, size, exhibition and critical history, sale location, previous sale date, and estimated price.

6.2.2 The reserve price

What many people do not know is that the items “knocked down” or “hammerd down” have not automatically been sold. This is because the seller of the artwork sets a secret reserve price before the auction starts. Even though the transaction is the result of negotiations between the seller and auction house, the final decision of its sale belongs to the owner of the artwork. If the bidding does not achieve this reserve price, the artwork will go unsold. The unsold artwork is said to be “bought in” (Ashenfelter and Graddy, 2003). Auction houses are very secretive about the seller’s reserve price and are not allowed to give potential buyers any information about this secret price. Note for example, that New York law prevents the reserve price to be above the lower price estimate. When the maximum price of an item that a potential buyer is willing to pay is less than the minimum price that the seller is willing to accept, it will be brought to a later auction, sold elsewhere, or taken off the market (Ashenfelter and Graddy, 2003). An artwork that has not been sold at auction is rarely. A talented auctioneer is able to “get the bidding started”. Sometimes this involves accepting fake bids (“off the chandelier” or “from the order book”) as long as the bidding has not surpass the reserve price (Ashenfelter and Graddy, 2003).

The reserve price is used for many purposes. The seller of the artwork may set a reserve price because of an inherent value of the artwork to himself. Some sellers might believe that sooner or later there will be someone who pays a certain price and therefore they are willing to wait for this price. According to the auction literature, the reserve price is set to the maximize expected revenue in a given period, under the assumption that the seller can commit himself not to put the artwork up for sale again[18]. Reserve prices reveal also other factors, like urgency or non-urgency to sell (Beggs and Graddy, 2008).

Auction of art is a ‘‘private value’’ auction because each potential buyer has his own reservation price for the artwork, which is assumed to be independent of other bidder’s reservation prices (Highfill, 2007). Because of this independence, there should be a positive relation between the number of bids and the final price because when the number of bidders increases, the range of reservation prices has to increase as well (Highfill, 2007 p. 282).

[18] See, for example, Klemperer 2004.

6.2.3 Burning effects

During the most art auctions, not all lots are sold. "Bought-in" lots, discussed in previous chapter, fail to reach a price above the reserve price set by the seller of the artwork. Recent research has revealed the importance of common values in this process. In their article "Failure to meet the Reserve Price", Alan Beggs and Kathryn Graddy (2008) investigate the price path of these unsold artworks that are put up for sale at a later auction. The authors research the claim that when an advertised item goes unsold at an auction, it will sell for less in the future. In auction theory jargon, such items are said to have been 'burned' (Beggs, 2008 p.301). The burning effects are the result of common values. Common values are related to the phenomenon, when buyers take into account the opinion of others while valuing an item (Graddy, 2008 p. 302). With data on art auctions they created a new dataset for empirically testing this claim. They found out that paintings which come to auction and failed return, significantly less when they are finally sold than those paintings that have not been advertised at auction between sales. These lower returns may occur because of ordinary value effects, characteristic downward trends in tastes, or changes in the seller's reserve price.

6.3 Christie's

Historically, the major auction houses of art have been Sotheby's and Christie's. They are still the world's leading art business. The auction house of Christie's is one of the most important auction houses and functions regularly at the international art market. Christie's has branches around the world and offers 600 auctions per year. Art objects are sort out in over 80 categories, including all areas of fine and decorative arts such as paintings, drawings, and prints, but also other collectibles like jewellery, wine, cars and furniture. Prices range from 200 dollar to over 80 million dollar. Christie's has incentives to sell inexpensive art works from established artists to attract first time collectors (Mei And Moses, 2002). Commission charges range from 10 to 15 per cent for sellers and 12 to 25 per cent for buyers, depending on the price level.

6.3.1 History of Christie's

Historically, the major auctioneers of art have always been the English auction house Christie's, followed by its rival Sotheby's. Almost all art is auctioned in the English price format (see chapter 5.1). The founder James Christie conducted the first sale in London on 5 December 1766. After his father's death, James Christie II (1773–1831) took over the management of the auction house. Because of war damage the firm moved from St Jame's Square to King's Street in 1823, where its headquarters remained into the 21st century. After James Christie II died, his two sons, James Stirling and George Henry took over the company and reorganized it in 1940 as a private limited company. Soon, the company established a reputation as leading auction house, and greatly benefit of London's new status as the major centre of the international art trade after the French Revolution. Christie's became a public company in 1973 and was listed on the London Stock Exchange from 1973 to 1999.

6.3.2 Price fixing scandal

In the auction market exists a heavy interdependency between collectors, art dealers and art the fund managers. The three heavy waits in the auction market, Christie's, Sotheby's and Philips are said to be price-makers and not price-takers (Mamarbachi, Day and Favato, 2000). In 1995, Christie's and Sotheby's were in aggressive competition for sellers. At that time, both houses radically cut commission fees paid by sellers (sometimes sellers did not have to pay anything), make donations to sellers' favorite charities, and even extend payments to the sellers (Ashenfelter and Graddy, 2003). In March 1995, this fierce competition suddenly came to an end. Christie's announced a fixed nonnegotiable sliding-scale commission on the sales price for sellers, and a month later Sotheby's announced the same procedure. The unexpected commission was due to a price-fixing conspiracy. In 2000, charges emerged for the price-fixing scandal between the two houses. Consequently, executives from both Christie's and Sotheby's admitted directly their participation in a commission-fixing arrangement to the Department of Justice. Christie's gained immunity from prosecution in the United States after a long-time employee of Christie's confessed and cooperated with the Federal Bureau of Investigation of the United States. Numerous members of Sotheby's senior management were fired soon thereafter. Alfred A. Taubman, the major shareholder of Sotheby's at the time, took most of the blame. He and Dede Brooks (the COO) were given jail sentences.

6.3.3 Locations

Christie's main London saleroom is on King Street in St. Jame's, where it has been based since 1823. The auction house has a second London saleroom in South Kensington, which opened in 1975 and primarily handles the middle market. Christie's South Kensington is one of the world's busiest auction rooms. To react at the competition from rival auction house Sotheby's, the company began expanding beyond the United Kingdom by opening auction houses in Rome (1958), Geneva (1968), and Tokyo (1969). Christie's became a public company in 1973. The company Christie's contains 85 offices in 43 countries and 14 salerooms around the world including London, New York, Los Angeles, Paris, Geneva, Milan, Amsterdam, Tel Aviv, Dubai and Hong Kong. A few years ago, Christie's expanded to emerging markets such as China, India and the United Arab Emirates, with successful sales and exhibitions in Beijing, Dubai, Mumbai and Russia.

6.3.4 Famous auctions

Christie's has engaged in various historic sales including the auctioning of Sir Joshua Reynold's art studio in 1794. The firm was also selected for the selling of Madame du Barry's jewels in 1795, and the 40 day sale of the Stowe House Collection in 1848. In 1882 Christie's handled the 17 day sale of Hamilton Palace pictures, auctioned off Sir George Drummond's artistic collection in 1919, and organized the sale of the Ford Collection of Impressionist paintings in 1980.

Christie's has also auctioned artwork and personal possessions linked to historical figures such as Pablo Picasso, Rembrandt, Diana, Leonardo Da Vinci, Vincent van Gogh, Napoleon Bonaparte, and others. In 1998, Christie's New York sold the famous Archimedes Palimpsest after the conclusion of a lawsuit in which its ownership was disputed. In 1990 the firm set two international records with the sale of the Badminton Cabinet for 15.2 million dollar marking the highest price ever paid for a piece of furniture at auction. The event was followed by the sale of Vincent Van Gogh Portrait of Dr. Gachet, which sold for 82.5 million dollar, making it the most expensive painting ever sold at auction at the time.

In October 2006 Christie's auctioned 1,000 lots of official Star Trek contents from CBS Paramount Television studios. A model of Starship Enterprise-D, used in Star Trek: The Next Generation and Star Trek Generations productions sold for more than 500,000 dollar. In December 2006, Christie's South Kensington sold the black dress worn by Audrey Hepburn in the film Breakfast at Tiffanys for 467,200. English pound.

6.3.5 Christie’s services

- Christie’s Live

Christie's offers its clients worldwide access to its sales through Christie’s Live, a unique, real-time online bidding service. To supplement its auction houses throughout the world, Christie's has developed this online auction system. The system allows bids to be made through the internet from anywhere in the world. Christie's Live allows potential bidders to hear and watch the auctioneer conducting a sale live in the saleroom, and enter bids from their computer Initially operating in the New York and London locations, this system is expanding to Amsterdam, Hong Kong, and Paris.

- Christie’s Magazine

Christie’s is the publisher of Christie’s Magazine, a literary magazine that contains articles on collecting and news of upcoming sales. The magazine offers appraisals and valuations through the firm, information about important artists their art, and descriptions of exhibitions. The company also maintains Christie’s Images, a picture library for the auction house which holds an archive of several million fine and decorative art images representing items sold throughout Christie’s sale rooms around the world.

- Christie’s education

Christie’s Education is the educational division of the auction house, which is sponsored by the company Christie’s. Christie’s Education has colleges in London, Paris and New York, recognized by the University of Glasgow in England and the New York Board of Regents in the United States. The program offers an extensive range of educational courses at the Master's, Diploma, and Degree level in courses of fine and decorative art. Additionally, Christie’s offers its Fine Art Security Services, which provides storage for certain artworks, and Christie’s Great Estates manages the sale of exclusive real estate.

- Christie's catalogue

As the world's leading art business, Christie's publishes more than 600 high-quality catalogues every year to showcase auction items in over 80 categories, including fine and decorative arts, jewellery, photographs, collectibles and wine. Christie's publishes prices and subscriptions of the auctioned artworks to catalogue series. This catalogue is a luxury publication of almost 200 pages per auction and contains comprehensive information about each sale. The catalogues provide not only information about the artworks but also extensive information about the artist. Information on the artist's date of birth and of death, nationality, and style is exhaustively described. Also all dimensions of the work such as medium, date of execution, provenance, as well as a low- and a high-price pre-sale estimate for the work is accompanied by a high-quality colour photographic of the work is presented.

6.3.6 Christie's Amsterdam

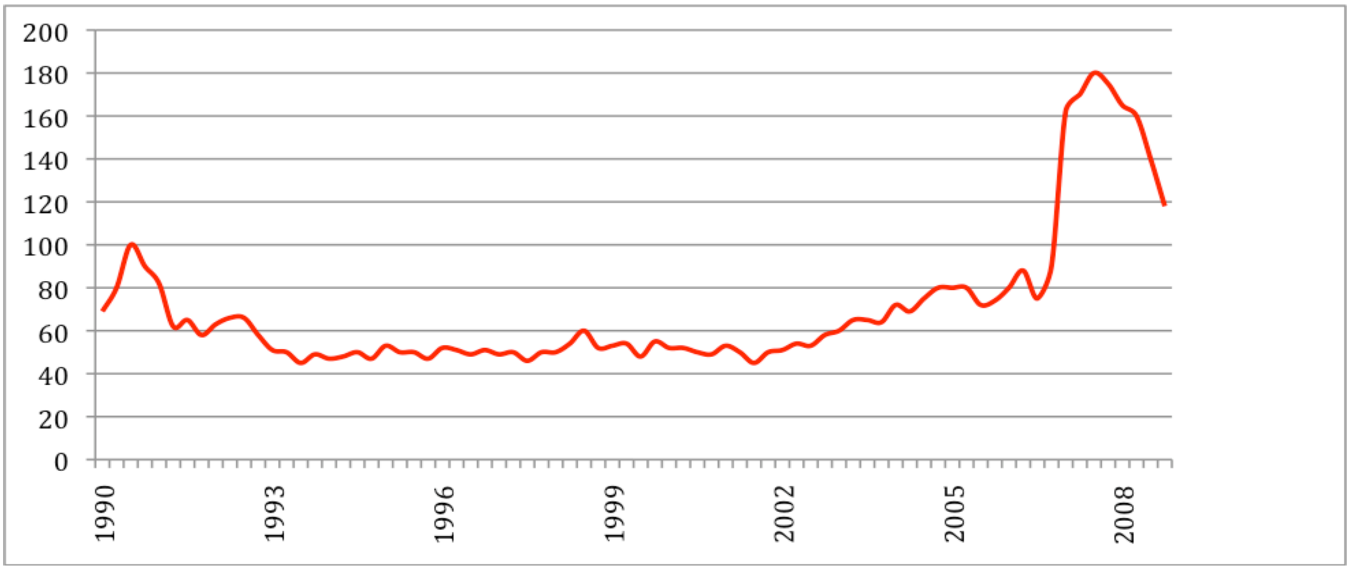
Today, Christie's Amsterdam is the foremost Northern European saleroom for pictures, furniture, jewellery, wine, Asian art and a variety of fine decorative arts. The sign continues to adorn the New York branch. In January 2009, Christie's reported to start a cost-reduction effort that will costs unspecified number of staff and consultants jobs due to the worldwide downturn in the economy. Although the economic downturn has encouraged some collectors to sell, others are unwilling to sell in a market, which may yield only bargain prices. Christie's conducted the greatest auctions of the 18th, 19th and 20th centuries, and also today it remains a popular showcase for the unique and the beautiful. The department Christie's Amsterdam is located in Amsterdam-Zuid, the cultural heart of the city. The offices and salesroom are accommodated in a building that represents the Amsterdam style of the 1920s. The building of the formally Maritime Museum opened in 1973 as Christie's Amsterdam. In 1986, Christie's Amsterdam sold the world-famous Nanking Cargo. The trove of more than 150,000 pieces of 18th century Chinese porcelain and gold ingots fetched for more than 17 million euro's – still a record for any auction conducted in the Netherlands.

7. Art Market Trends

7.1 Introduction

As writing this thesis in a time of art market turbulence it was really easy to find (internet) articles about tumbling art prices which are, according to many authors, indicating a new art market crash. Because of the real-estate meltdown in global economy, speculative investments of all sorts are coming under increased inspection. The real-estate meltdown has nourished the fear for speculative investments and newspaper headlines warn for another bubble, this time it could be the art market, especially the contemporary art market. Despite the abundance of information about a possible art bubble, I was rather surprised that there are hardly any articles about the last art market crash. What happened during the late eighties and the early nineties? What had caused previous art market corrections? And, not unimportant, is history repeating? By improving the knowledge of the development of the last art market trends, risks and danger in the art market can be better identified. Since there are several (economic) factors that led to previous art price corrections we will analyse the global art market development and describe current trends in art market history, emphasizing similarities and differences with economic movements. The first part of this chapter shed some light of how the art market has performed in recent times and compiled some facts and figures which are chronologically summarised for the period 1988-2008. In the second part we discuss possible relations between the art market and economic wealth and financial markets. The figure on the next page presents the development of global art prices for the period 1988-2008. The figure is based on data from Artprice.com, the world leader in art market information. Every ‘peak’ and ‘depth’ is described in a separately chapter.

Figure 1: development of global art prices 1988-2008



Source: Artprice.com, 2006

7.2 Current Trends

The existence of so many studies devoted to art investment is a consequence of a believe that art is able to yield huge profits. Also the poor performance of traditional asset classes has driven the search for better investment opportunities in art investment. This belief has been strongly nourished by the media, which continuously report record prices suggesting that extra returns are possible whenever prices show an indication of rising. This simple explanation proved to be drastically false considering the art market collapse in the early nineties, directly after the boom in the late eighties.

7.2.1 Art boom in the late eighties

One of the main driving forces behind the booming art market in the eighties, was the fervent buying behaviour by a wealthy class of Japanese businessmen emerged as a new group of collectors of Impressionist paintings. The Japanese economy was flourishing and the real estate market was booming, producing plenty of super rich Japanese looking for gainful investments associated with prestige and honour by owning such a popular work of art. Traditionally, auction houses work with small groups of conventional collectors with a great knowledge of art. In the late eighties, they were doing business with a new generation of 'global shoppers' with a lot of money and knowing very little about art. This new class had other reasons for buying art; investment purposes, prestige, fashion and chauvism. The new group of buyers have been influenced by fashion rather than quality. The appearance of this new group of art collectors triggered violent reactions in the traditional art world. These reactions were a consequence of the fear that the Japanese new rich will drive up the art prices. The Japanese were so confident about the investment possibilities in Impressionist paintings, that they were paying ridiculous prices for poor quality artworks. The most favourable returns were obtained on the sale of impressionist paintings, most of which were sold in the year 1989, just as the market peaked.

7.2.2 The commodification of art

The painting "Portrait of Dr. Gachet" – the cover of this thesis - is a masterpiece of modernism, the last portrait Van Gogh painted before his suicide on July 28 in 1890. One century after Van Gogh's dead, the "Portrait of Dr. Gachet" was sold at auction for a record-breaking 82.5 million dollar. Surprisingly, the painting was not bought by a museum or by a wealthy collector from the traditional art world. Instead, the buyer belongs to a complete different category of art collectors: a wealthy Japanese businessman. The painting became a symbol of a new phenomenon: the commodification of art.

The rise of new buyers outside the traditional group of collectors had blurred the emotional band between the art lover and the work of art, and was replaced by a rational commercial relation. Collectors were being attracted by a market trend, rather than concrete knowledge or insight. Art was getting more and more a commercial good. Buyers saw artworks primarily as a tradable asset instead of goods of aesthetics. This phenomenon, accelerated in the 1980s, is later called the commodification of art. The commofification of art describes an era of "high-flying stock markets, sudden wealth on a vast scale and financial empires founded on debt" (Saltzmann, 1998).

7.2.3 The collapse of the early 90s

The collapse of the nineties is probably the most dramatic collapse in current art market history. When the share market crashed in 1987 the art market did well until 1989 when people ran out of money. Between 1989 and 1990, the top of the art market was strongly driven by banks and Asian buyers participating in a hasty acceleration of the prices of Impressionist and Modern artworks. Art prices went sky-high, including works of lesser quality. After its peak in 1990, the market abruptly lost its appetite and between January 1990 and January 1991, Artprice's global price index showed a price correction of -21 percent, followed by another correction of –27 percent recorded in January 1992. Approximately, three years after Black Monday on 19 October 1987, the problems in the share market set speculative investment on hold, which contributed to the collapse of the art market (Mei & Moses, 2002).

The sudden increase of art prices in the late eighties had pushed the art market to a dangerous speculative market. When an asset class is being exaggerated by speculative money, trouble is likely to follow; the art market peaked in 1990 before collapsing the following year. Typical for speculative markets is that the peak and the collapse are very close together. Also the post-Gulf War period in 1991 was marked by an absence of art market records (Art Market Trends, 2005).

7.2.4 The 2000 boom

In the years since 2000, a more global form of demand has developed with the appearance of wealthy new buyers from Asia, Russia and the Middle East. To encounter this new demand the number of works taken to auction has risen by 47 percent over the decade, (Art market Trends, 2003). Before 2003, the economy was rather negative. Global worrying was on the rise because of all the uncertainty about terrorist's attacks of September eleven and the Iraq war. The drama of 11 September brought an end of almost five years unbroken upward trend of art prices. In 2001 the index stood 5.4 percent below September 2000 levels, lots sold had fallen 47 percent, no-sales ratios reached 44 percent and prices tumbled to 1999 (Art Market Trends, 2003).

The art market changed its appearance in 2002. Positive economic factors had a major impact on the market's structure. Generally, the beginning of the rise of art prices started in 2003. 2002 was a year of fluctuating prices with ups and downs on the auction floor, strongly correlated to fluctuations in the financial markets. Because of technical development more efficient information systems have accelerated the art market's reactions and this resulted in greater price volatility and a shortage of liquidity (Art Market Trends, 2003). In the second half of 2002, the art market stabilized and became stronger again. In July 2002 Sotheby's reached a new sales record: 45 million British pounds paid for "Massacre of the Innocents" from the Flemish Baroque painter Peter Paul Rubens, which became the most expensive old master ever sold for that time.

In 2003, prices started to rise sharply. But while top prices boomed, collectors were getting more and more selective. The art market collapse in early nineties that directly followed the art market boom of the late eighties sparked a fear among investors that still is noticeable in today's art market (Forrest, 2007). Economist's warning remarks nourish the fear of many art collectors for a new overheated market. According to Art Market Trends (2002), the collapse of the art market in eighties showed that though the art market is often seen as a safe haven, it also carries risks of its own. Collectors have learned their lesson in the nineties and this time they avoid risks by simply not buying uncertain lots. Only the works of the highest quality were bought in 2003.

7.2.5 The peak of 2007

Until the end of the nineties only 100 to 200 artworks per year broke through the million-dollar ceiling. Driven by rising prices and a whole new generation of rich art collectors, the number of over-a-million-dollar sales has taken off. In 2005, 487 artworks are sold at auction above a million dollar, and total auction revenue contains 1.4 billion dollar. One year later, in 2006 no less than 810 works are sold for over a million dollar, generating total auction revenue of 2.7 billion dollar. In total, the auction market generated a total revenue of 6.4 billion dollar which doubles the received amounts during the 1999-2003 period and an increase of 52 percent in art prices compared with 2005 (Art Market Trends, 2006).

In 2007, the price of artworks continues to climb. Auction houses Sotheby's and Christie's reported in The Financial Times that their Impressionist and Modern Art sales have brought them record-breaking prices. Christie's claimed the highest half-yearly sales in art market history and Sotheby's claimed the highest global turnover in the company's history. For example, Claude Monet's "Le Pont du Chemin de fer à Argenteuil" went for 41.4 million dollar, easily breaking the previous Christie's record: 35 million dollar for a Monet last year (Financial Times, 2008). Some economists see this as the result of a speculative mood among investors. However, the peak of art prices in November 2007 differs a lot compared to the speculative peak in the early nineties. The top of the market is the result of the incredible increase in contemporary art prices over the past five years, leading to a 107 percent increase in art prices between January 2006 and January 2007 (Art Market Trends, 2007).

7.2.6 Turning Point in 2008

After seven uninterrupted years of increasing prices, the art market weakened in 2008. The art world finally starts to feel the influence of the global economic crisis. The first signs were noticeable in the first quarter of 2008. Effectively, art prices contracted 7.5 percent in the first quarter of 2008 compared with the last quarter of 2007, the biggest reduction on the market since the 1991-1992 meltdown. The introduction of the report Art Market Trends 2008 from Artprice.com starts with the sentence: "2008 will be remembered in art market history as a turning point, beginning in a mood of speculative euphoria and ending in violent contraction. Between the multi-million dollar sales of the spring and the extreme wariness of buyers in the autumn, the art market fell victim to the economic and financial crisis as it spread round the globe." Is the art market just experiencing a temporary correction or is it facing another art market crash?

Although the abrupt slowdown in worldwide economy, the first halve of 2008 still record prices were paid for artworks, in particular for contemporary art. In May 2008, the crisis in global financial markets created a stressful tone at the opening of the New York sales of Christie's. Their art catalogues enclosed very high estimates in line with the outstanding prices achieved in November 2007. And the estimates seem to be right, after a week of extraordinary sales, Christie's auction market appeared to be miraculously immune to the global economic. European collectors benefit from the weak dollar compared to the euro and participate greatly in the sales resulting in a half-year record of 5.5 billion dollar in the first half of 2008 (January-June 2008).

But, in the second half of the year, revenue fell back to half that figure as all the market indicators turned red in autumn (Art Market trends, 2008). Autumn is an important season for the auction market. After the summer, all auctioneers, dealers and art lovers were somewhat anxious awaited to the autumn sales of Christie's. It seems that the once-recession-proof art market may have finally caught that financial cold that has laid the rest of the world down (Evans, 2008). Auctions started to fail, art market confidence fade away, and then prices fall. By December 2008, Artprice's global price index presents a negative price correction of 30 percent. The negative price correction between January 1990 and January 1991 was less sharp, close to 21 percent, followed by another contraction of –27 percent in January 1992.

7.3 Economy and the Art Market

In this chapter we discuss the status of the economy and the art market. When we consider the art trends from previous chapter they all react on events in the financial markets. While periods of boom in the global economy and within the art market do not occur simultaneously, they do overlap. In this chapter we present different theories about the relation between the economy and the art market.

7.3.1 Economic wealth and art

Some research suggests that art prices are strongly linked to consumers' sense of economic wellbeing; the health of the art market is related to the health of the economy. In this representation, we can assume that when economic growth turns up, art prices increase, and other way around. Like during the 1950's and 1960's, when world output and trade goes up, a similar boom was observed in prices for art (Seckin and Atukeren, 2000). On the other hand, when financial markets slow and dip in a recession would reduce the number of potential buyers in the art market and would most likely cause a drop in art prices. Galleries and artists are often forced to lower the prices for an artist's work, especially if previous work declines in price at auction. Also Goetzmann (1993) suggests a strong relation between demand for art and aggregate financial wealth. He goes beyond by arguing that art prices follow the financial markets with a significant lag of ten to twelve months. Mei and Moses (2002): "The art market is heavily dependent upon worldwide wealth creation. But a downturn in a single market may not affect the art market, but a downturn in world markets will most likely affect the art market." According to Goetzmann, an increase in wealth of consumers causes an increase in demand for art. However, wealth is not the only factor that shapes up the demand for art. Uniformity and internationalization of tastes are also very crucial in determination of art prices. Globalization of aesthetic values will increase the demand for similar art objects, thus leading to higher prices.

7.3.2 Art market and financial markets

The commonly held view from the literature considers art as a long-term investment capable to maintain its value in real terms (Candela and Scorcu, 1997). If art is such form of investment, the comparison between returns on art and the returns on financial assets gives some useful information. In the literature there are two main theories about the relation between the art market and financial markets. According to the first approach there is no relation: Art prices have no “fundamentals” in common with financial assets. Remember, Mei and Moses (2002) found that art has a very low correlation with stocks and even a negative correlation with bonds. Also Victor Ginsburgh and Philippe Jeanfils (1995) analyse the relation between art markets and stock markets. They also find that there is no long-run relation between the art market and the financial markets, though they find some evidence (very weak) in the short-run where financial markets do influence the prices of artworks.

The second approach regards the art market as a particular financial market and therefore, some positive correlation between the markets emerge, especially in the short run. Some authors find some support for a short run relation. To begin with Michael Bryan (1983) who compared the investment return on paintings with the return on alternative assets, including gold, housing, stocks, and bonds over the period 1971-1984. He found a strong positive correlation between the art market and gold. Also, the French economist Olivier Chanel searched in his work for relationships between art and financial markets. In his paper “Is Art Market Behaviour Predictable” Olivier Chanel (1995) search for relationships between the art market and financial markets through econometric methods. His graphical analysis and causality tests indicate that financial markets influence the art market, with a lag of about one year. Moreover, Chanel notes that, art and financial markets move together, in the sense that no systematic transfers exist. Chanel also pointed out that art is dependant on fashion, taste and fad, which make it very difficult to forecast on the long term.

7.3.2.1 Time lags

It is importantly to note that financial markets are strongly related with economies, and that their volume of transactions is much larger than the art market's. In other words, the financial market is far more liquid than the art market (Chapter 4.3.5). Because of the fact that financial markets have a high volume of transactions, they react more quickly to economic events (remember the influence of the terrorist attacks of 9/11 on the global stock market). Moreover, profits generated on the financial markets may be invested in art, so that stock exchanges may be considered as advanced indicators to predict what happens on the art market (Chanel, 1993).

Chanel's work is in line with the finance professors Mei and Moses (2002), who argue that the art market is following the stock market with a certain lag. Historically speaking, the art market has tended to follow downturns in the financial market by six to eighteen months. Their prove is to find in a significant fall in art prices from the late 1870s until the early 1880s, lagging behind the economic depression of 1876 -1879. A less dramatic decline can be noted in the late 1974, approximately 18 months after the economic crisis of the early 1970s (Mei and Moses, 2002). The strong belief in a time lag for the art market is also emphasized in the conclusion of Iain Robertson's book: "I am aware that in the months between the submission of this manuscript and its publication, the stock and property markets may have crashed. If, indeed, the financial and property markets have imploded, then I am confident that the art market will be at the height of its boom. Within a couple of years of this boom, slightly less or more, the art market will have also crashed. This will be the case if not this year than the next or the next." (Iain Robertson, 2005).

8. Hypotheses and Methodology

8.1 Introduction

Many studies have dealt with the art market and art investment in general. The majority of these studies are mainly focused on the financial returns of art. At the same time, there are many studies about macro economic performances and economic growth. Yet, there is very little known about the relationships that link the two subjects, resulting in a lack in the literature that refers to the relationship between macro economic indicators and investment in art. In this thesis we are as well interested in art as an alternative asset class, but we go further by investing the sensitivity of the art market to peculiar macro economic movements.

With this chapter the empirical part of the thesis begins. From an economic perspective, this chapter is an empirical study devoted to the auction market of Christie's, in particular, auction results on art objects auctioned at Christie's Amsterdam department in the period 1988-2008. The chapter is organized as follows; first, in Chapter 8.2 the hypothesis will be presented followed by several sub questions, which will guide us to the empirical part of the thesis. Second, Chapter 8.3 provides a discussion on how the return on art can be measured over time for such heterogeneous goods by presenting short descriptions of the main price indices. In Chapter 8.4 the used methodology is described and a quantitative model of the possible relations between economic movements and auction market results is discussed. Chapter 8.5 present and discusses the used variables and the underlying sample, i.e. the annually auction results of Christie's between 1988-2008. Finally, Chapter 8.6 presents the final dataset and discussed the data sources.

8.2 Hypotheses

The preceding chapters have treated different theories about art investment and the auction market in general. These theories provide more understanding of the mechanisms in the auction market and how bidding actually works. The economic situation and the health of the financial markets represent an important issue in the auction market, the art market and the art sector as a whole. In this empirical part of the thesis we try to identify some economic determinants that affect the relative performance of the auction house Christie's. One of the central arguments of this thesis is that performances in the auction market are determined by characteristics of the economy. The first step in testing this relationship is measuring the abstract concept of art performances and economy to transform them into quantitative data. Following the numerous examples from the literature, this analysis is based solely on auction data form Christie's for the period 1988-2008. Because it is impossible in the timeframe of this thesis, to test the entire Dutch art market, we limited the study to an important aspect of the art market: the auction market of Christie's in Amsterdam. As previously stated, the central research question of this thesis is:

The status of the economy influences the auction market of Christie's in Amsterdam between the year 1988 and the year 2008.

The central research question brings us, along with the theory from previous chapters, to more exact sub hypotheses. To investigate the influence of the economy on the auction market, we can test the sensitivity of the auction results to changes in real growth in the Dutch economy and the dependence on the financial markets. In particular, we investigate two relations: First, we discuss the relation between real economic growth and auction results. Second, we discuss whether the price of art is related to financial markets:

- *Auction results increase at the rate of economic growth.*
- *A relation exists between the auction market and the financial markets.*

The extended data provide us to take a look at the development of the different auction categories over the last twenty years. In doing so we can test some other claims from the literature. In Chapter 4.2.4 we discussed the appearance of the emerging economies as a considerable new group of buyers at the international art market. The literature states that this group of new buyers is playing an increasing role in the established art market. A growing demand of wealthy collectors from China, Russia and the Middle East, but also a growing number of artists from these countries, are conquering the established auction market of Christie's. It is possible that collectors from the emerging economies place greater importance on artworks and artists from their own country. This means that the art category "Emerging Economies" should have flourished over time. Further, in Chapter 5.4.3 we discuss that some authors believe in the existence of a "Masterpiece Effect", the claim that artworks from established Old Masters yield higher returns than other artworks. When an art category outperforms the market, more collectors and more money will stream into this asset. If this claim does hold, the art category Old Masters should also increase over time. On the contrary, Pesando (1993) studies data on prints to put find evidence for the underperformance of masterpieces. It would be interesting to investigate whether claims hold for our data on the auction market of Christie's:

- *The auction category Emerging Economies increases over time.*
- *The auction category Old Masters increases over time.*

The intention of the thesis is testing the relevance of the above hypotheses, that is, that the state of the economy is an important determinant of auction market performances in general and the auction market performances per auction category. We analyze how the auction market of Christie's Amsterdam developed over the last 20 years. The auction market at Christie's is considered. The dataset is carefully build by hand and is including almost 2.400 auction results in the auction market during the period 1988 – 2008.

8.3 Art Price Indices

The first step to investigate the returns on art investment is the construction of a liable measurement method, which is very difficult because of the characteristic features of the art market. Art objects are heterogeneous goods, bought and owned for their specific characteristics, rather than for the object itself. This must be taking into account by measuring price changes. Therefore, any statistical method developed to estimate price changes must manage the varying nature of the characteristics of the items sold (Chanel, Gerard-Varet and Ginsburgh, 1994). Several methods have been used to construct a price index, all facing the problems of art production, which makes it hard to estimate prices of individual works over time. In general, the literature uses three main methods for estimating the rate of return in art investment. Those are the Sotheby index, the Repeated Sales Index and the Hedonic Price Index. Below, each index methodology is carefully described and the main strengths and weaknesses are discussed. In the next chapter, we compare results of art price indices to indices of various financial markets.

8.3.1 The Sotheby Index

The Sotheby Index is a very popular and likely the most commonly used price index. Basically, the index acts for art objects like the Consumer Price Index acts for consumer goods and services (Bryan, 1985). It is often used in the press and is primary based on auction house experts' personal judgements. The Sotheby Index represents a fixed basket of art objects categorized into 12 major categories[19]. A Sotheby's expert on each of the 12 categories, tracks auction prices and reappraises the basket of art objects based on recent price information (Bryan, 1985). Because of this one-sided approach the highly subjective valuations might lead to misleading prices because it is solely based on very narrow perspective. In addition, many authors claim that the Sotheby Index can be

[19] The categories are Old Master paintings, nineteenth Century European paintings, Impressionist and Post-Impressionist paintings, American paintings (1800 to pre-World War II), Modern paintings (1900-1950), English furniture, American furniture, Continental furniture, English silver and Continental silver.

a good indicator, but in many cases it is not very useful because it cannot measure reproducibility.

8.3.2 The Repeat-sales Regression Index

Some of the most important studies on art investment apply the Repeat-sales Regression Index. A fundamental problem in constructing a price index for the art market is that it requires an identical basket of goods sold at different time periods. Another problem for paintings is that each painting is a unique and therefore the only way to compare artworks is among prices of the same object at different times[20] (Candela and Scorcu, 1997). To solve this difficulty of heterogeneity, Anderson (1974), Frey and Pommerehene (1989) Buelens and Ginsburg (1993) Goetzmann (1993), Pesando (1993) and Chanel (1996) introduced the Repeat-sales Regression Index. The Repeat-sales approach measures the change in prices from repeated sales of the same art object over time by regressing the changes in the logarithm of the price of each work on a set of dummy variables[21]. One dummy variable for each time period in the sample, except the first value that is set to zero for normalisation. The dummy variables are –1 at the time of the first sale of the art object and +1 at the time of the second sale, and zero otherwise[22]. Many studies that apply this technique are based on data on auction sales as listed in Reitlinger (1961, 1963, and 1971). Goetzmann supplements this data with auction sales data found in Mayer (1971–1987) and Pesando (1993) again uses data on sales of prints, as listed in Gordon's Print Price Annual (1978–1993). Mei and Moses (2002) go beyond by investigating previous sales of paintings as listed in the catalogues of the major auction houses Sotheby's and Christie's.

An advantage of this repeat-sales regression method is that the resulting index is based on different prices of the same artwork that controls for the different quality of the assets. In other words, it does not suffer from arbitrary requirements like a hedonic model (Mei and Moses, 2002). An important limitation of the repeat-sales regression method is that the construction of the index needs multiple sales, which are not always

[20] Not in the case for prints because they are reproducible.

[21] A similar technique is developed by Carter Hill (1997), who has estimated a housing price index by applying repeat-sales regression models.

[22] See Goetzmann (1993) for a more extended explanation.

available. The method is only useful when artworks have been sold at least twice within a certain period. Inefficient characteristics of the art market like inelastic short run supply, information asymmetry, and high transaction costs, reduce the number of double sales used to calculate the rate of return (Candela and Scorcu, 1997). In many cases, the Repeat-sales Regression Index needs other techniques to gain valid market information over shorter time periods or selected style or artists (Chanel, Gerard-Varet and Ginsburgh, 1994). Another shortcoming of this technique is that it assumes that no hierarchy exists in the data. According to Rengers and Velthuis (2002) hierarchical clusters of factors, like factors related to the work of art, the artist, and the gallery, determine prices. To overcome the problem of the hierarchy of determinants, the authors use multilevel rather than ordinary regression analysis.

8.3.3 The Hedonic Price Index

Artworks are heterogeneous goods (see chapter 4.3.1), bought and owned for their specific characteristics, rather than for the commodity itself. Therefore such goods are called "hedonic goods" (Lancaster, 1966). Within the determination of a price for an artwork, the various characteristics should be taken into account. The hedonic price index offers a way to escape the problems of the repeated-sales regression method, since no double sales are needed. Still, we have to coop the problem of heterogeneity; artworks are unique, which makes measuring art characteristics a very difficult problem (Candela and Scorcu, 1997). The methodology to account price variations due to changing characteristics is known as the Hedonic Price Index and has its origin in agricultural economics. Frederick V. Waugh (1928) wrote an article on quality factors influencing vegetable prices. Waugh conducted a regression analysis of the price of asparagus in Boston on three different aspects of quality: measures of color, size of stalks, and uniformity of spears. His purpose was to estimate valuations of the characteristics from potential buyers, what is very interesting information for the asparagus producers. The hedonic price approach is widely used for other various markets, like cars and housing.

The first art index based on the hedonic price methodology, was initially applied by Anderson (1974) and is later refined by Buelens and Ginsburgh (1993), Chanel (1994), and has been recently used by Chanel (1995), and Mossetto and Lazzaro (1996). The hedonic price regression considers that an artworks' value is derived from the consumption of varying amounts of different characteristics and estimates the implicit price (shadow price) associated with each of them (Moureau, 2000). The characteristics of artworks are typical aspects of the artwork which contain important information about the artist, such as name, date of birth and death, nationality, and dimensions of the painting like size, medium, technique used, condition, and whether the work is signed or not.

Also the hedonic price methodology knows its shortcomings and limitations, which may lead to weak results. First, the hedonic price approach requires a strong a priori hypothesis: The knowledge of all the complex influences driving art market prices (Candela and Scorcu, 1997 p. 178). Second, in the long run there may be exists changes in collector's taste. In this representation, prices change not only as a result of concentration of specific characteristics but also in terms of the social valuation (Candela and Scorcu, 1997).

8.4 Methodology

Placing the indices of the previous chapter in concrete perspective, we can consider that this research needs a rather different approach. Instead of measuring the returns on art we want to measure the differences in return over time. Although the article "Beauty and the Bulls" of Michael Bryan is rather old (1983) it provides a good example for comparing economic growth with art prices, in my case, auction results. Bryan argues that investor's interest in the art market is partly a function of the rate of inflation, and therefore he test the sensitivity of art prices to changes in the general price level and to real growth in the U.S. economy (see Chapter 7.3.1). In following Bryan I will test the sensitivity of auction results to changes in real growth in the Dutch economy.

In their article "Long-term Co-movements in International Markets for Paintings" Victor Ginsburgh and Phillipe Jeanfills (1995) also look for steady-state relationships between different price developments. They search for relations between prices for paintings obtained by three groups of painters by simply comparing the development of prices of each group.[23] They found strong price co-movements among the three groups of painters: the various markets move closely together. I will use the same methodology to study relations between economic indicators and auction results as Ginsburgh and Jeanfills (1995) have done. The authors also examined the relation between art and financial markets (see Chapter 7.3.2). Following Ginsburgh and Jeanfills, we will also look for relations between the auction results and the performances of the financial markets.

Following their literature, the best way to find relations between two markets is to correspond to quantitative data. One of the major problems in empirical testing of possible relationships is the construction of the suitable dataset. First, in order to test the hypothesis, we have to bring research to smaller scale. Instead of testing the entire Dutch auction market, we bring it back to an important indicator of the market: the Dutch department of world's largest auction house: Christie's. Second, we have to measure the abstract concept of auctions to translate them into quantitative data. Because the literature does not provide an appropriate measure, and there is no single

[23] See Ginsburgh and Jeanfills (1995) for more details.

universally accepted one, we use a variable that provides data as an important indicator for auction market performances: auction results. Because all auctions are alike, auction data are relatively homogeneous and offer reliable information about the functioning of the art market (Candela and Scorcu, 1997 p. 178). In this thesis, we use annually auction result data from Christie's Amsterdam for the period 1988-2008 to indicate the functioning of the auction market to some extend.

To make the term 'economic movements' measurable in quantitative data we refer to economic growth. Economic growth is an increase in activity in an economy. Economic growth is a good indicator to evaluate the economic development of a country. Negative growth can be referred to a shrinking economy and is associated with an economic recession. We measure economic growth as the rate of change of gross domestic product (GDP). Because GDP data represents the value of all final goods and services produced in a country in one year, it is an appropriate indicator for the status of an economy.

Further, we compare the development of auction performances with the development of financial markets. As indicator for the term "financial markets" we take the AEX index. The AEX index, derived from Amsterdam Exchange Index, is a stock market index composed of Dutch companies that trade on Euronext Amsterdam, formerly known as the Amsterdam Stock Exchange. Started in 1983, the index is composed of a maximum of 25 of the most actively traded securities on the exchange.

Because I want to expose the specific effects of economic movements I decided to take the year 1950 as my starting point to get a good impression of the development of the economy of the Netherlands. Unfortunately, Christie's could not offer results before 1988, what makes the investigated period rather short. In short, in Chapter 8 we test the hypotheses: The status of the economy influences the auction market of Christie's Amsterdam between the year 1988 and the year 2008. We try to find an appropriate answer by comparing economic growth in the Netherlands with art auction results at Christie's Amsterdam for the period 1988-2008. It is important to examine whether (and what type of) relationships exists between economic growth – given by GDP data – and auction results and financial markets – given by AEX data – and auction results. The main assumption that a decrease in economic growth is accompanied by a downswing in art prices (and therefore in auction results) will be tested by a comparison of charts.

Further we test some claims from the literature for the auction results of Christie's: the influence of the emerging economies and the Masterpiece Effect.

8.5 Variables

As previously noted we study the impact of economic movements on the auction results of Christie's for the period 1988-2008. In order to do this, a measurement of the Dutch economy is needed. To simplify the central research question, we have to detach concrete variables to submit into research. In this chapter the exact definitions of the terms economic growth, financial markets and auction results are given.

8.5.1 Definition of economic growth

The term "economic growth" is not an obvious concept because it is approached from different perspectives. It could include an increase in income, an increase in average living standards, an outward shift of the production possibility frontier, greater purchasing power, a sustained rate of innovation or capital accumulation as well as a higher share of employment (Friis, p. 83). Economic growth is usually the result of technological innovation and positive external forces. Placing these findings in concrete perspective we present economic growth as: a positive change in the level of production of goods and services by a country over a certain period of time.

To make the term "economic growth" measurable in quantitative data we use gross domestic product (GDP) data. GDP represents the value of all final goods and services produced in a country in one year. More specifically, we use "GDP per capita", which is a country's gross domestic product divided by its population; it shows the value of all final goods and services each person would have if GDP were divided equally. Economic growth is usually measured in terms of real GDP. Growth in general is often calculated in real-terms in order to net out the effect of inflation on the prices of the goods and services produced.

Now the GDP data are adjusted for population growth and inflation, they are suitable to measure economic growth. In this context, the definition of economic growth is: the annual percent of increase in real gross domestic product (GDP) per capita. In other words: the growth rate of real GDP is the change in real GDP from one year to the next year. We can express the rate of growth in, for example, the period 2000-2001, as follows:

*Growth rate of GDP = [GDP(2001) – GDP(2000)]/GDP(2000) * 100*

The definition of the term "economic crisis" is a fundamental issue when we want to measure its influence at the art market. The aim of this chapter is to test the hypothesis that an economic crisis or a recession influences auction market results. There is no commonly accepted definition of the term "economic crisis" or "recession". A recession conventionally held as; a period of decline in the level of aggregate economic activity or real gross domestic product (Barro, 1997 p.55). The International monetary Fund (IMF) speaks of a recession when a slowdown in economic growth is three percent or less.

8.5.2 Definition of financial markets

In economics, the term market means a place where sellers of a particular good or service meet with buyers of that good or service. Any place where there is a potential for a transaction to take place. A *financial* market is a mechanism that allows people to buy and sell (trade) financial securities like stocks and bonds, commodities like metals or agricultural goods, and other items of value. The efficient market hypothesis (EMH)[24] demands low transactions costs and prices that reflect all known information. In this representation, the term "financial markets" stands for the markets in which financial instruments are traded. Financial instruments represent a claim over real assets or a future income stream. Financial instruments have no intrinsic value of themselves. The four main financial markets are the foreign exchange market, the fixed interest or bond market, the share or equity market and the derivatives market (Barro, 1997 p. 826).

[24] The efficient-market hypothesis (EMH) states that financial markets are "informationally efficient", or that prices on traded assets (*e.g.,* stocks and bonds) reflect all known information, and instantly change to reflect new information.

To make the term “financial markets” measurable we use AEX Index data. The AEX index, derived from Amsterdam Exchange Index, is a stock market index put together by Dutch companies that trade on Euronext Amsterdam formerly known as the Amsterdam Stock Exchange. Started in 1983, the index is composed of a maximum of 25 of the most actively traded securities on the exchange. The index represents a basket of shares, the numbers of which are based on the element weights and index value at the time of readjustment. The index is calculated as follows: multiply the price of each of stock by the number of shares of that stock in the basket, then taking the sum of the results and divide them by 100. The AEX index composition is reviewed twice a year on March 1 and September 1 based on the closing prices on the final trading days of January and June.

8.5.3 Definition of auction results

In this case, an auction result is the sum of all the final revenues per auction achieved at Christie’s Amsterdam in one year. The final revenue per auction is the sum of all the independent prices paid for an art object. It is important to note, that these prices are different than the so-called hammer prices (see Chapter 6.2). This is because these prices include a buyer’s premium. A buyer’s premium is added to the hammer price and is paid by the buyer of the artwork.

8.6 The Dataset

One of the major problems in testing macro economic impacts on the auction market is the construction of the suitable dataset. In previous chapters we discussed the three main art indices. In this thesis we are not by definition interested in the returns on art but in the development of price levels and therefore this thesis adopts a different approach. In order to test and measure the impact of economic movements on auction results we have created a rich, unique dataset, collecting all auction price information provided by Christie's by hand. This exhaustive approach enables me to investigate the effects of a variety of important variables. For this thesis, we collected the annually auction results of Christie's in Amsterdam between 1988 and 2008. The complete data set includes approximately 60.000 transactions divided into 2.400 auctions. In this chapter we discuss the data and their sources.

8.6.1 Economic data

Statistics about economic growth, the AEX index and other macro economic characteristics, as well as a review about the economic history, were collected from the databank of the Worldbank. The data include 20 annually observations of the economy in the Netherlands between 1988 and 2008. GDP numbers comprise the economic growth and are expressed in percentages from one year to the next and are corrected for inflation and population growth.

8.6.2 Auction result data

The auction data are gathered from the auction house Christie's Amsterdam. Since 1998, Christie's publishes every result from the auction room the day after the hammer falls. Auction results of past sales provide information about the sales title, lot number, sales price, the prior estimated price, the art category, the date of auction, the sales location, the artist, date of creation, and sometimes the name of the buyer.

Auction results appear in the currency of the sale location and the art prices include buyer's premium. The results through the years differ in given entity of currency such as Dollars, Euro's and Dutch guilders (before the year 2002). The different currencies are converted into Euro's making them suitable for comparison. The auction results are available online at Christie's website collected from 1998 to now. Auction results before 1998 are gathered from datasheets from Christie's archive, which were not easily to obtain. The data are submitted to particular restrictions. The geographical scope of the dataset is limited to auctions just at the Amsterdam department of the auction house. The research period is from 1988 to 2008. For simplicity, we do not distinguish between different schools or painters, since we are only interested in the auction results. The sample exists only at art objects bought by individual art collectors, companies and private organisations. Like Mei and Moses (2002), we excluded expensive masterpieces collected by museums, because they are collected rather through donation, which can cause selection bias.

The final data set contains results of over approximately 60.000 works of art, auctioned at Christie's Amsterdam between 1988 and 2008. The auction objects have been categorised across twelve different categories. In this respect, we focused on art investment in:

1. PWP Pictures, Watercolours and Paintings
2. FCS Furniture, Clocks and Sculptures
3. OM Old Masters
4. JW Jewellery and Watches
5. TA Tribal Art
6. PC Private Collection
7. 19^{th} Nineteenth century art
8. 20^{th} Twentieth century art
9. AA Asian Art
10. RA Russian Art
11. ME Middle East Art
12. R Remaining

Category 3, Old Masters (OM) represents the full continuum of European art dating from the 14th to the 19th century. The core of this category consists of old master paintings but also includes old master drawings, prints and works on paper. Christie's claims that they hold the world auction record for any Italian, Dutch, French, English, and German old master painting. In recent years, Christie's has achieved great successes with masterpieces by Raphael, Cranach, Titian, Velázquez, Van Dyck, Rembrandt, Hals, Reynolds, Canaletto, Gainsborough, Turner, Constable, Delacroix, Courbet, Corot, and Bouguereau (Christie's, 2009).

The auction categories 9, 10 and 11 represent the art form the emerging economies. These categories obtain special attention because later on we investigate the development of Christie's art from the emerging economies. Below, a brief description per category:

9. Asian art

The growing importance of Asia on the global world stage creates an increasing interest in Asian art and culture. Currently, Asian art has proved a remarkable development in the art world. The category Asian art markets has experienced extraordinary growth since the category began achieving popularity among collectors regionally and globally in the past decade.

10. Russian art

The Russian Art market continues to be one of the fastest growing and most exciting areas within the international art market. The period of 2007 to 2008 was marked by some record-breaking results in sales of both Russian pictures and artworks. According to Christie's, because of the challenging economic conditions in Russia, 2008 and 2009 have shown strong sale results, which gave evidence to the continuing strength and potential of this market.

11. Middle East

The Middle East is one of three regions where the auction house is hoping to make up for decreased revenue in such traditional art capitals as North America and Western Europe. With a 350 million dollar of art currently on display in Abu Dhabi, Christie's seems to be very sure that collectors from the emerging markets can help make up for a slump in collecting among Western buyers.

The data set of final auction results is dependent to variables. Auction results range from a minimum of 800 Euros to a maximum of 3 million Euros. Yearly average turnover in the sample is 54,7 million Euros, the bottom of the auction market was reached 1993 with 38 million Euros and the best year was 1989 of 74 million Euros (corresponding the art boom of the late eighties). The mean of the number of auctions a year was 40 for the entire sample.

9. Research Results

9.1 Introduction

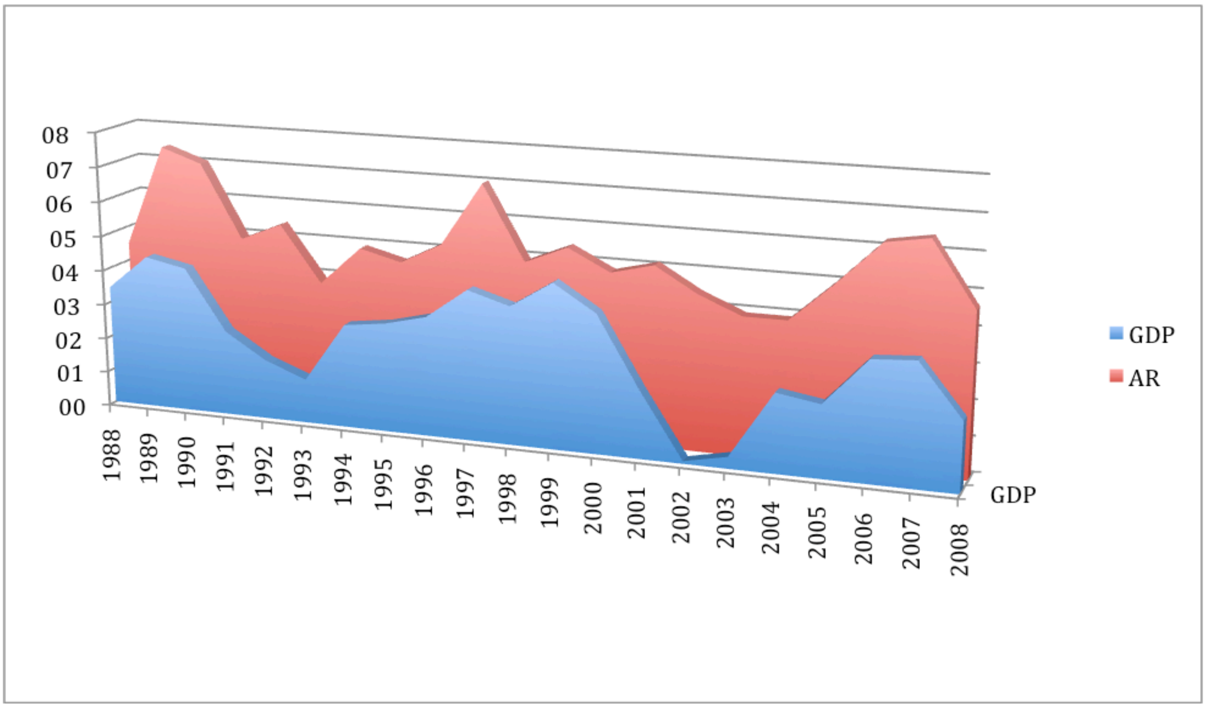
The aim of this chapter is to provide a critical overview of the research results of the empirical part of the thesis. In Chapter 8 we collected auction result data from Christie's Amsterdam for the period 1988-2008. In this chapter we investigate some claims from the literature with the use of the collected data. In the first part (Chapter 9.2) we empirically test two claims about the influence of the economy on the art market. In general we test: (1) a relation between economic wealth (in economic growth) and auction results. (2) A relation between financial markets and auction results. In the second part (Chapter 9.3) we analyse the development of the categories of art from Christie's for the holding period. More specific, we analyse (3) the development of the auction category art from the emerging economies and (2) the development of the auction category Old Masters. The empirical study in this chapter may be compared with the following chapter where the conclusions are presented.

9.2 Economy and Auction Results

9.2.1 GDP and AR

The first question refers to the relation between economic wealth and the annually art auction results of Christie's. As an indicator for wealth we use economic growth measured in real GDP percentages (see Chapter 8.6.2). The assumption is that auction results follow economic movements: when economic growth decreases we expect lower auction performances and when economic growth increases we expect higher auction performances. We begin our analysis by comparing two graphs: the development of economic growth and the development of auction results for the period 1988-2008. Figure 2 illustrates the relation between economic growth (in percentages of real GDP) and auction results (AR), expressed in million Euros, and the year 1988 as starting year. The aim of this figure is to show how annually auction results correspond with economic movements.

Figure 2: Development of economic growth in GDP and auction results (AR).



Source: own calculations based on data from the Worldbank and Christie's

The results are like we expected: the graphs move closely together, periods of high economic growth are characterised by high auction results and periods of low economic growth are characterised by low auction results. Second, we compare the auction results of Christie's with economic growth by correlation:

Table 1 Correlations	Economic growth	Auction results
Economic growth	1.000	0,660
Auction results	0,660	1.000

Over the period of analysis, the correlation method reveals a strong positive relationship between the rate of increase economic growth and in auction results. A significant correlation of 0,660 can be found between the two. Consequently, auction results may differ due to differences in economic growth. This corresponds some common claims from the literature. Our findings indicate that the annually results vary considerably. The changes may reflect trends in the economy, which suffered from a recession in the first half of the nineties and a recession in the first years of the twenty-one century. The figure clearly shows the speculative peak in the late eighties. This result strongly reinforces the finding of a common link between the statuses of the economy. Auction performances show a somewhat similar flow; it follows the existence of a boom period until 1990, followed by a non-boom period. In 1993 the bottom of the market was reached; in the second half of the nineties auctions results started rising again. Another downswing in economy is visible starting in the year 2001, probably caused by the terrorist attacks of September 11th. Also this time, the auction market is following. Again, when the numbers of economic growth are climbing since the year 2002, auction results are increasing as well. The somewhat parallel movements of the variables suggest that economic growth is likely to improve auction results. In fact, during periods of economic boost it is said that people buy art as a form of speculative investment, so auction results increase due to economic grow.

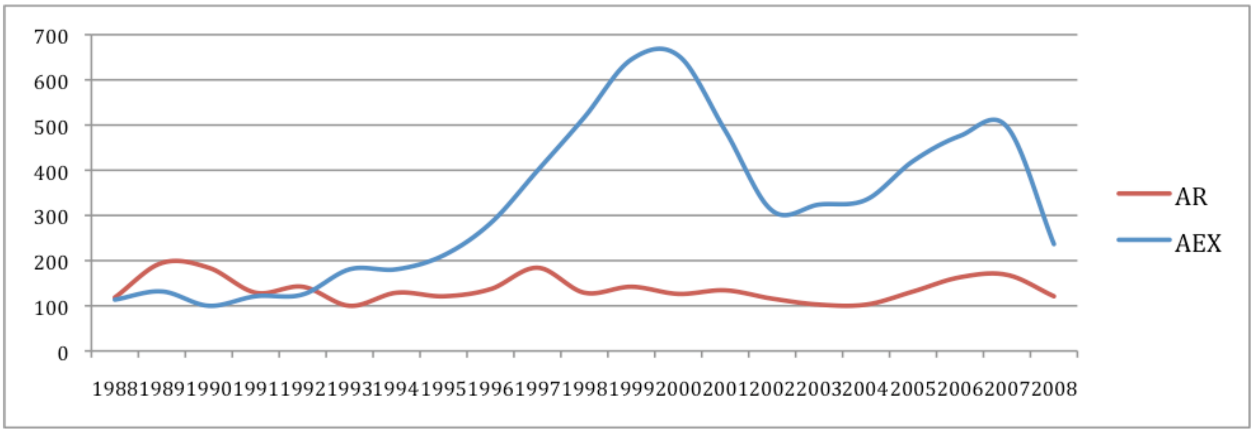
9.2.2 AEX and AR

Second, we investigate the relation between the financial markets and Christie's auction results. When we take a look at Table 2 we see that there is no significant correlation between the AEX index and auction results.

Table 2 Correlations	AEX	Auction results
AEX	1.000	0,010
Auction results	0,010	1.000

Figure 3 presents the development of the share price index for stocks traded in the Netherlands (AEX) and the auction result index (AR) for Christie's Amsterdam over the period 1988-2008. The indices are computed on a yearly basis.

Figure 3: Development of the AR index and AEX index



Source: Own calculations based on data from the Worldbank and Christie's.

Whether the auction results behave like the AEX index is a matter of empirical observation. When we compare both the indices we find that there is no significant relation between the two, though in the short-run, there are some similarities to find in the movement of both the indices. From Figure 3, it is clear that the auction results behave in a way that bears some similarity to the Dutch stock market for some short periods of time but seems to have little relation to the overall development of the index. The AEX seems to attract AR in the short run, even if it is difficult to account for a simple link between them. The development of the auction results that emerges from the calculations somewhat approximates to the behavior of the AEX index for the periods: 1988-1990, 1994-1996, 2004-2008. Like stocks, art is vulnerable to irrational enthusiasm between 1988 and 1990. In this period both indices show an increase followed by drop in prices. Within 2 years, the auction index increased by 100 while the AEX index increased by 200. Prices in AEX index as well as in the auction market Index were pushed up from the year 1995 with the AEX index reaching a peak to 700 in 2000 at the height of the dot-com bubble. From the year 2003 we see again both indices climbing to another peak in the year 2007. Because of this similar development, we therefore conclude that the behavior registered in the financial market and the auction market provides evidence for a weak positive relation.

Overall, no systematic relationship emerges between the AEX index and the auction market for Christie's in the "long run", though in the short-run, the AEX index does influence auction results. Some movements of the AEX and AR are linked, but only in the short run. However, analysing some similar trends among the indices does not mean that one causes the other. It may well be a false relationship, with both indices reacting on same events as fashions and bubbles are always in attendance, in both, the auction market and the financial market. No simple prediction rule for auction results emerge in this relation. Therefore, further research on longer intervals is required.

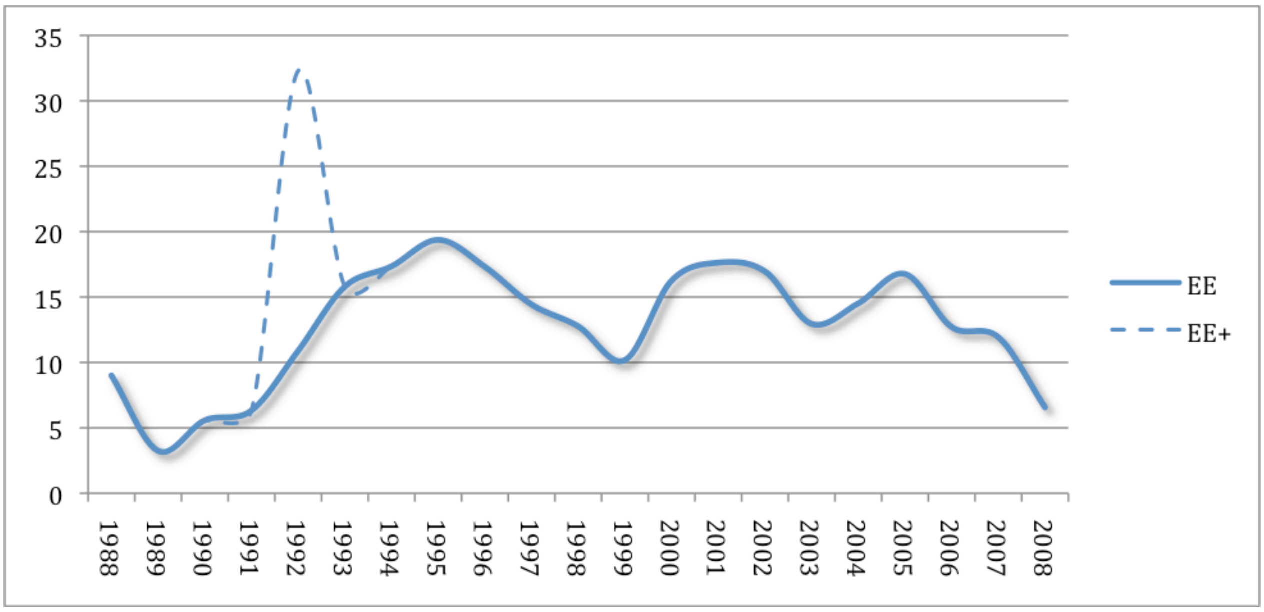
9.3 Development Art Categories

In this chapter we take a closer look to the development of the categories of art auctioned at Christie's Amsterdam between 1988-2008. We first analyse the art category Old Masters (OM). Next, we analyse the art category art from the emerging economies (EE).

9.3.1 Development of EE

The graph from figure 5 shows the annually development of the share of auction results originated from the emerging economies (EE) of total auction results over the period 1988-2008. The category "emerging economies" (EE) represents the art categories Asian Art, Russian Art and African Art. The Asian art category contains art objects from China, Japan, India and Indonesia (see Appendix).

Figure 5: Share of art from the Emerging Economies (EE) in relation to other categories



Source: own calculations based on data from Christie's

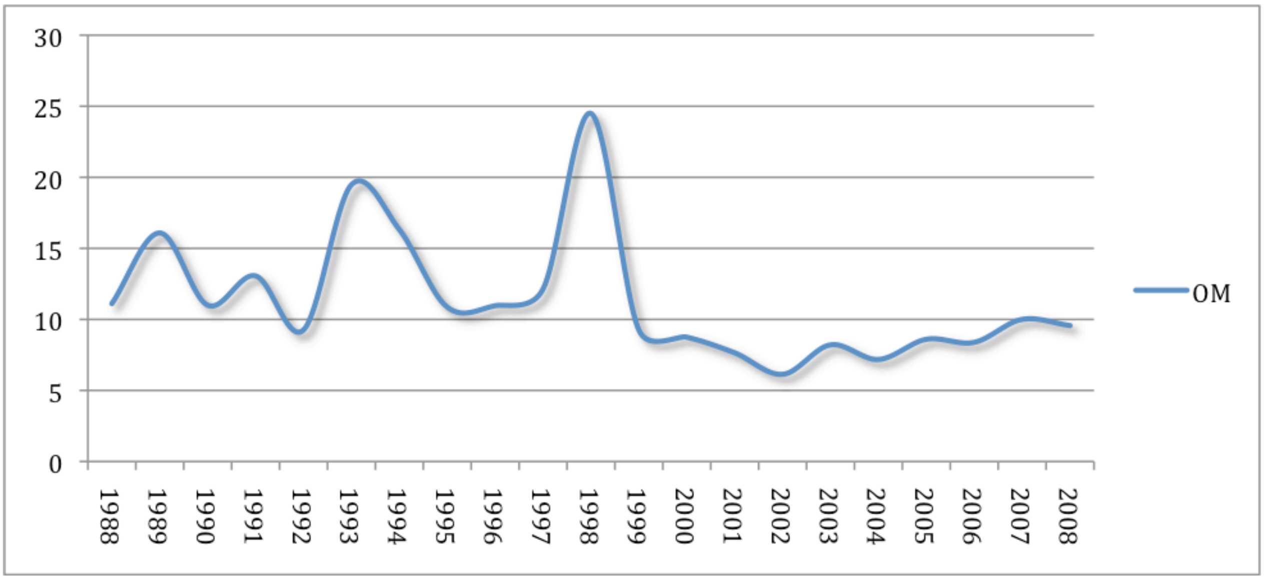
The research results presents that art from the emerging economies (EE) is experiencing a booming but also a very fluctuating period. A substantial share of the auctioned objects contains of Russian, African, but in particular Asian art. Starting from the year 1989 the share art from the emerging economies is increasing till 1995. The first half of the nineties, an art market boom for art from the emerging economies is quite noticeable. Notably, in 1992 a huge sale of 11.555.200 Euros took place for Chinese export porcelain (see the interrupted line). We avoided this value because it contain an extraordinary sale and distorts the normal auction results. After 1995 the category EE decreased, even if they still perform better results than previous years. The market for EE dips in 2002, what is not surprisingly because, the entire art market is facing a recession between 2001-2003. Finally, starting from 2005 the share of EE auction results is significant lower than other auction categories. One possible explanation for the somewhat fluctuating and instable results is that the sample is not sufficiently large enough for presenting a good image of the increasing share of emerging economies in the auction rooms of Christie's. The investigated period probably is too short to present the abrupt increase of the emerging economies. "The commodification of art" (discussed in chapter 8.3.3) started in the late eighties what brings that the figure, which the starting point in 1988, is not able to show the sudden emerge of 'the new buyers'. It might require a much larger sample to prove the increasing interest for art from Asian and Russian artists. Definitive conclusions, however, would require additional testing of more auction results to assess the consistency of the claim.

9.3.2 Development of OM

The aim of this chapter is not to find prove for the Masterpiece effect (de la Barre et al. (1994), Singer and Lynch (1997), Pesando and Shum (2008)] or to find prove for the underperformance of Masterpieces (Pesando (1993) and Mei and Moses (2002)] but rather shed some light at this anomaly theory. As discussed in Chapter 5.4.3, numerous empirical studies have shown that such a Masterpiece Effect does not exist. Therefore, this chapter will not empirically test this claim but instead we will analyse the development of the auction category Old Masters at Christie's. Regarding to the research results the thesis want to point out the importance of Old Masters and find a declaration for the performances of Old Masters to some extend. According to many specialists, the effects of economic decline are obtainable, but they claim that the market for old masters, the masterpieces, is still doing well.

The art category Old Masters (OM) contains paintings, drawings and prints of European art dating from the 14th to the 19th century in two major sales each year, one in May and one in November (see Appendix). Figure 4 illustrates the development of the share of art from the art category Old Masters (OM) in relation to the other art auction categories.

Figure 5: Share of art of Old Master (OM) in relation to other categories



Source: own calculations based on data from Christie's

In 2008, the percentage Old Masters is almost the same like the starting point twenty years ago. From year 1988 to 2002, the percentage OM decreased continuously almost half its figure with the exception of four peaks in 1989, 1991, 1993 and 1998. As from the year 2002 the percentage OM starts rising again and the fluctuations become more stabilized. While the total auction results show a steadily increase (Figure 2) starting from the year 2002, the percentage OM climbs also but is more volatile. The peak in 1989 is notably to subscribe to the art market boom in the late eighties. After the boom, the percentage is back on 11 percent. By 1993, the percentage doubled compared to the starting year in 1988. The peak in 1998 is not actually explainable. Though, there was a great sale of an old master painting of Jan Lievens of 2,5 million (while the estimate was between 200.00 and 300.000 Euros!).

10. Conclusion

The aim of this thesis has been to broaden the view of art investment by including macro economic determinants into theoretical and empirical analysis of the art market. In this thesis, I have tried to measure the influence of the economic recession on the auction market of Christie's by highlighting the most important developments from the established literature on art market and test some claims with the use of collected auction data from the auction house of Christie's in Amsterdam. After reading and summarizing a better knowledge of the mechanisms at work I can confidently respond to the claims about the profitability of the auction market in times of economic uncertainty.

The extended review of articles and empirical studies provide us interesting insights on the auction market. The findings from the collected literature indicate that art investment can be a gainful alternative asset class. Still, traditional financial assets like stocks and bonds yield higher returns in general, which makes it a rather poor investment asset. However, most authors agree on the fact that the art market offers serious possibilities concerning portfolio diversification. Previous studies present that the art market has a low (or sometimes even negative) correlation with the financial markets. The lower the correlation the greater the diversification advantages, which makes art very attractive for portfolio diversification. Therefore, art investment can be argued to be very desirable from a diversification perspective. But, since the key parameters for making this argument are difficult to estimate, this subject requires more research. Further, on the short term art is able to outperform financial classes, during economic boosts and in times of economic recession. But, it is very important to keep in mind that these are exceptions rather than the rule. There is no such thing as art as the last save investment. The thesis presents that the selected literature contains interesting economic empirical research, and extends the knowledge of the art market. However, there are still issues in the art markets that need to be challenged by more serious research.

Besides theoretical research the thesis uses a dataset of collected auction results from Christie's in Amsterdam between 1988-2008, to investigate the effect of macro economic movements on the auction house performances. The used data set is unique: we collected all the information about auctions from the Christie's website and Christie's archive by hand. This time-consuming approach enables us to consider the impact of important variables like economic growth, and the influence of the financial markets. The conclusions drawn in this chapter are based on the research results in Chapter 9 where differences in auction results are related to economic factors. In short, we investigated the influence of economic growth and financial markets on auction results of Christie's Amsterdam for the period 1988-2008. Primary, the research results found evidence for a relationship between the economy and auction results for the holding period. The conclusions are:

- *Auction results increase with economic growth*

We collected annually auction results from Christie's and compare them with real economic growth data (GDP percentages). In doing so, we find a significant relation between economic growth and auction results: during periods of high economic growth, high auction results are registered, and vice-versa for low economic growth. We can conclude that the auction results of Christie's increase with economic growth. Whereas periods of boom do not necessarily have to occur simultaneously, they do overlap. Whether the empirical results presented in this research carry any generality for the entire art market is questionable.

- *Relation between the financial markets and auction results on the short run*

Our findings are in line with the work of Ginsburgh and Jeanfils (1995) and Mei and Moses (2002): we find no evidence for a relation between the financial markets and the art market. We compared performances of the AEX index with the auction result index and find that there is no relation between these two assets. Though, sometimes in the short-run, financial markets do influence art markets. In this representation, it can be argued that art can be an essential component of any portfolio. Notice, however, that we have here considered only the auction market of Christie's. Maybe other datasets would generate different results. It would be interesting to see more economic studies on the effects of economic movements, including economic growth, on other art markets.

All things considered, the results of the development of the auction market of Christie's contain some practical potential outcomes for researchers and art market analysts. The empirical study argues that the evidence found of a positive relationship between economic growth and auction results and a short term relationship between financial markets and auction results suggests that a recession do influence the art market, not directly but with a time lag of about a year.

A number of issues remain for additional research. In this final chapter we discuss the main limitations and shortcomings in the thesis.

Obviously, and as is the case in most studies, the conclusions must be taken in due perspective. The data on the auction market considered in this thesis are subject to many shortcomings:

First, since the sample is solely based on data from the auction house Christie's (the top segment of the pyramid of the art market), we cannot draw any definitive conclusions for the entire art market. Further analyses are necessary in order to do so. In particular, the used methodology focuses only on the performances of art objects auctioned at Christie's in Amsterdam, without any reference to other aspects of the art market such as its rival auction house Sotheby's or the primary art market like local dealers and galleries. For example, Christie's has built a serious reputation and therefore it accepts only the work of top artists. This selection causes a distortion of a statistical analysis. It is important to keep in mind that the obtained dataset is *only* representative for the auction house Christie's for the period 1988-2008 and the results do *not* represent the entire Dutch auction market.

Second, the thesis neglect transaction costs (seller's commission and buyer's premium), which are much higher than in the case of financial markets. Since transaction costs vary across auction houses, countries, and time periods, we did not take them into account in the calculations. First, Christie's managed a negotiable seller's commission which depends on the bargaining power of the seller. After 1995, Christie's set a fixed seller's commission. Because of the differences, we decided to neglect transaction fees. It is also important to note that investors keep in mind substantial additional transaction costs such as insurance, storage and cleaning costs.

Third, in interpreting the results of both tests, one must consider the liability of the data. Auction results do reflect the actual sales, but there is a margin of false transactions. At first, the data are published by an interested party; that is the auction house itself. Auction houses are very careful in publishing information to potential buyers because auction results are considered as important price indicators. Since the auction house is the provider of the data it is difficult to justify that the auction results are not biased. Another reason that the results have to be interpreted carefully is the fact the auction results are based on the so-called hammer prices. This means that not necessarily every publicized sale has actually took place. There is a substantial chance that a serious part of the sales are bought in and thus the transactions between the buyer and the seller have never occurred[25].

[25] Remember (Chapter 6.2.3) An item is said to be 'bought in' if the bidding does not reach the sellers 'reserve price' and the artwork will go unsold. This implies that even if the art object remains unsold, the transaction is recorded as a sale.

11. References

11.1 Literature

Akerlof, George (1970) “The Market for 'Lemons': Qualitative Uncertainty and the Market Mechanism" Journal of Economics, 84, August 1970, pp. 488-500.

Ashenfelter, O., and Kathryn Graddy (2003) “Auctions and the Price of Art” *Journal of Economic Literature*, 41: 763–787.

Ashenfelter, O. (1989), “How Auctions Work for Wine and Art”, *Journal of Economic Perspectives*, 3(3): 23-36.

Barro, Robert J. (1997), *Macroeconomics*, Edition: 5, MIT Press,

Bates, Constance S. (1983) “An Unexplored International Market: The Art Market” *Journal of the Academy of Marketing Science,* Summer 1983, Vol. 11, No. 3, p. 240-249.

Baumol, William J. (1986) 'Unnatural Value: Or Art Investment as Floating Crap Game', *American Economic Review* 76 (May), 10-14.

Beat, Christoph & Teubnerj, Gunter, *Art and Money: Constitutional Rights in the Private Sphere?*

Beggs, Alan and Kathryn Graddy (2008) “Failure to meet the Reserve Price: the Impact on Returns to Art”, *Journal of Cultural Economics,* 32: 301–320.

Bryan, Michael F. (1985) “The Beauty and the Bulls; the Investment Characteristics of Paintings” *Economic Review*, Federal Reserve Bank of Cleveland, IQ: 1-9.

Buelens, N. and Victor Ginsburgh (1993), "Revisiting Baumol's 'art as floating crap game'', *European Economic Review*, 37(7): 1351-1371

Campbell, Rachel A. (2005) *Art as an Alternative Asset Class*, Working Paper, Maastricht University.

Campbell, Rachel A. and C. G. Koedijk (2005) *The Art of Portfolio Diversification*, Working Paper, Maastricht University.

Campos, Nauro F. and Renate Barbosa (2008) *"Paintings and Numbers: An Econometric Investigation of Sales Rates, Prices and Returns in Latin American Art Auctions"* Discussion Paper No. 3445, April 2008 Brunel University, p. 1-37.

Candela, G. and A. E. Scorcu (1997) "A Price Index for Art Market Auctions An Application to the Italian Market of Modern and Contemporary Oil Paintings" *Journal of Cultural Economics* 21: 175–196.

Chanel, Olivier (1995), "Is Art Market Behaviour Predictable?" *European Economic Review*, 39(3-4): 519-527.

Chanel, Olivier, L.A. Gerard-Varet and V. Ginsburgh (1994) "Prices and Returns on Paintings: An Exercise on How to Price the Priceless" *The Geneva Papers on Risk and Insurance Theory*, 19: 7-21.

Coffman, Richard B. (1991) "Art Investment and Asymmetrical Information" *Journal of Cultural Economics* 15: 83-94.

Ekelund Jr., R.B., R.W. Ressler, and J.K. Watson, (2000), "The "Death-Effect" in Art Prices: A Demand-Side Exploration", *Journal of Cultural Economics*, 24(4): 283-300.

Frey, Bruno S. (1997) "Art Markets and Economics: Introduction" *Journal of Cultural Economics* 21: 165–173.

Frey, Bruno S. and Eichenberger, Reiner (1995) "On the Return of Art Investment Return Analyses", *Journal of Cultural Economics*, 19: 20–220.

Frey, Bruno S. and Pommerehne, Werner W. (1989) "Art Investment: An Empirical Inquiry" *Southern Economic Journal* 56: 396-409.

Gerard-Varet, L. A. (1995) "On pricing the priceless: Comments on the Economics of the Visual Art Market" *European Economic Review*, 39: 509-518.

Ginsburgh, Victor and Philippe Jeanfils (1995) "Long-term Comovements in International Markets for Paintings" *European Economic Review* 35: 538-548

Ginsburgh, Victor and P.M. Menger (1998) "Economics of the Arts" *Journal of Cultural Economics* 22: 285–293.

Grampp, William D. (1989). *Pricing the Priceless: art, artists and economics,* New York: Basic Books, p. 1-290.

Goetzmann, W.N. (1993), "Accounting for Taste: Art and the Financial Markets over Three Centuries" *American Economic Review* 83(5): 1370-1376.

Highfill, Jannett and Kevin O'Brien (2006) "Bidding and Prices for Online Art Auctions: Sofa art or Investment", *Journal of Cultural Economics*, 31: 279–292.

Hutter, M, C. Knebel, G. Pietzner, and M. Schafer (2007) "Two Games in Town. A Comparison of Dealer and Auction Prices in Contemporary Visual Arts Markets" *Journal of Cultural Economics*, 31:

Klemperer, Paul (2004), *Auctions: Theory and Practice*, Princeton University Press.

Knebel, Christiaan (2007) *Anomalies in Fine Art Markets - Three Examples of an Imperfect Market for Perfect Goods*, thesis, University of Paderborn, p. 1-101

Lancaster, K (1966) "A New Approach to Consumer Theory," *Journal of Political Economy* 74: 132-157.

Lazarro, Elisabetta (2006) “Assessing Quality in Cultural Goods: The Hedonic Value of Originality in Rembrandt’s Prints” *Journal of Cultural Economics* 30: 15–40

Levy-Garboua, Louis. & Montmarquette, Claude (2002) “The Demand for the Arts”, *Cirano*, February 2002, p. 1-16.

Locatelli Biey, Manuelea and Roberto Zanola (1999) “Investment in Paintings: A Short-Run Price Index” *Journal of Cultural Economics* 23: 211–222.

Mamarbachi, Raya, Marc Day and Giampiero Favato (2000) *Evaluating Art as an Alternative Investment Asset*, working paper, p. 63 -71.

Mei, Jiangping and Michael, Moses (2002) “Art as an Investment and the Underperformance of Masterpieces” *American Economic Review*, 92(5): 1656-68.

Pesando, James E. (1993) “Art as an Investment: The Market for Modem Prints”, *American Economic Review*, 83 (December), 1075-1089.

Pesando, James E. and Paula Shum (1999) “The Returns to Picasso’s Prints and to Traditional Financial Assets, 1977 to 1996” *Journal of Cultural Economics*, 23: 183–192.

Rengers, Merijn and Olaf Velthuis (2002) “Determinants of Prices for Contemporary Art in Dutch Galleries, 1992–1998” *Journal of Cultural Economics* 26: 1–28.

Robertson, Iain (2005) *Understanding international art markets and management*, Routledge, 2005, 1-280.

Schonfeld, Susanne and Andreas Reinstaller (2007) “The effects of gallery and artist reputation on prices in the primary market for art: a note” *Journal of Cultural Economics*, 31: 143–153

Seçkin, Aylin and Erdal Atukeren (2000) *Art as a Financial Investment in an Emerging Market: An Empirical Study of the Market for Paintings in Turkey*, KOF - Swiss Institute for Business Cycle Research, p. 1-25.

Singer, Leslie P. and Gary A. Lynch, G. A. (1997) "Are Multiple Art Markets Rational?" *Journal of Cultural Economics*, 21(3), 197–218.

Singer, Leslie P. and Gary A. Lynch (1994) "Public Choice in the Tertiary Art Market", *Journal of Cultural Economics*, 18, 199-216.

Snowball, Jeanette D. (2007) *Measuring the Value of Culture: Methods and Examples in Cultural Economics,* Springer 2007, 1-230.

Stein, John E. (1977) "The Monetary Appreciation of Paintings" *Journal of Political Economy*, 85: 1021-1035.

Throsby, David (1994) "The Production and Consumption of the Arts: a View of Cultural Economies", *Journal of Economic Literature,* 32: 1-29.

Tilman, Rick (2006) "Colin Campbell on Thorstein Veblen on Conspicuous Consumption" *Journal of Economic Issues*, 40:1-15.

Towse, Ruth (2000) *A Handbook of Cultural Economics.* Cheltenham and Northampton, MA: Edward Elgar.

Valsan, Calin (2002), "Canadian versus American Art: What Pays Off and Why" *Journal of Cultural Economics* 26: 203–216

Vermeulen, Pieter, *Investeren in Belgische Schilderkunst*,

Wagenfuhr, Horst (1965) *Kunst als Kapitalanlage*, Forkel, Stuttgart.

13.2 Internet Articles

Author unknown (2008), "Christie's Turns to Emerging Markets" *Art Info*, October 2008, http://www.artinfo.com/news/story/29153

Author unknown (2006) "Imputed Rent and the Price of Art" *Belligerati*, comment on an article, April 2006, http://www.belligerati.net/archives/2006/04/imputed_rent_an

Boyle, Catherine (2009), "Going, going, gone . . . collapse in art market forces auction house to cut jobs" *The Times*, article, January 2009, http://www.timesonline.co.uk/tol/business/industry_sectors

Evans, Sian (2008), "Financial Crisis Cools Down Art Market", *Forbes Magazine*, art market report, November 2008, http://www.forbes.com/2008/10/31/christies-sothebys

Forrest, Nicholas (2007) "Art Market History – Looking at the Big Picture", *Art Market Blog*, http://artmarketblog.com/2007/09/11/art-market-history-looking-at-the-big-picture/

Gross, Daniel (2006) "Painting for Profit. Is art a good investment?", commentary about business and finance, June 2006, http://www.slate.com/id/2144185/

Salmon, Felix (2007) "There's No Speculative Bubble in the Art World", *Seeking Alpha*, article, September 2007, http://seekingalpha.com/article/47964-there-s-no-speculative-bubble-in-the-art-world

14. Appendices

14.1 Review Auction Categories

- Clocks Furniture and Sculpture (CFS)

The category handles mostly English and Continental furniture from approximately the late 17th to the mid-19th century. Sales in this category also feature early European sculpture (from the Middle Ages to 1830) and decorative objects such as ormolu, ormolu-mounted porcelain, clocks, ceramics & glass, Chinese Export furniture and tapestries. Sales are held throughout the year in Amsterdam, London, New York and Paris.

- Old Masters (OM)

The category Old Masters contains European art dating from the 14th to the 19th century in two major sales each year. The core consists of Old Master paintings but it also includes Old Master Drawings, and Works on Paper. With this diversity, collectors are presented a rich context within which to appreciate the centuries-old tradition of representative art in Europe, and we reach a far wider audience than any comparable sale. Christie's continues to hold the world auction record for any Italian, Dutch, French, English and German Old Master painting. In recent years, we have achieved great successes with masterpieces by Raphael, Cranach, Titian, Velázquez, Van Dyck, Rembrandt, Hals, Reynolds, Canaletto, Gainsborough, Turner, Constable, Delacroix, Courbet, Corot, and Bouguereau. Christie's sales in this category draw together artists from the 14th- 19th centuries who worked in Italy, France, the Low Countries, Germany, Spain and other areas of Europe. Among the most famous names are Michelangelo, Parmigianino, Raphael, Boucher, Ingres, Goya, Rubens and Rembrandt. Subjects range from still lifes and genre scenes to religious and mythological themes. Christie's holds sales in New York, London and Paris.

- Private Collection (PC)

Christie's Private Sales allow the flexibility and discretion to buy or sell works of art outside the auction framework. Our specialists work with buyers and sellers alike offering both their experience, expertise and unique global reach to quickly identify either the work of art or the potential buyer.

- Jewellery and Watches (JW)

Christie's has been synonymous with the auction of the most prestigious jewelry, ever since the sale of Madame du Barry's jewels in 1795. Over the last 200 years, sales have expanded from a small group of connoisseurs into major events attended by dealers and private collectors from around the world, bidding in the room, via the telephone or through the internet. Regular jewellery sales are held at Christie's in Geneva, Hong Kong, London and New York, as well as in Amsterdam, Dubai, Milan and Paris. They include modern and period jewellery, signed and unsigned, and a variety of precious stones. You will find pieces at all price levels, from a $1,500 pair of Cartier cufflinks or a $9,000 Buccellati gold leaf parure, to a multi-million dollar perfect diamond.

- Asian Art (AA)

The category Asian Art contains Asian contemporary art, Chinese 20th century art, Japanese art and Indian art. Asian art presents quality contemporary art from a combination of Asian nations, including China, India, Korea and Japan. The category also presents an exceptional and diverse line-up of Asian Contemporary artists such as Mr., Thukral & Tagra, Kang Hyung Koo, Hisashi Tenmyouya, T.V. Santhosh, Subodh Gupta and Kim Dong Yoo. Bringing works by Chinese artists such as Zeng Fanzhi, Yue Minjun, Wang Huaiqing, Zhang Xiaogang, Liu Ye, Liao Chi Ch'un, and Chen Cheng-po. Japanese art comprises a wide array of material, including painted screens, scrolls, calligraphy, woodcut prints, ceramics, lacquer, costumes, armour and swords. The main Japanese artists are Jidoshagoya and Saeki Yuzo. Christie's sales of Indian and Southeast Asian art feature paintings from an expansive geographical range that extends from Afghanistan to Indonesia and from the Himalayas to Sri Lanka. Many of these objects emerge from Buddhist, Hindu, and Jain contexts, as well as traditions and cultures dating from the Indus Valley period (c. 3300 B.C.) to the mid-1900s.

- Russian Art (RA)

Russian Art sales feature exceptional decorative works of art, including rare works by Fabergé, icons with silver and enamel oklads, enamels, silver, Imperial and Soviet porcelain, militaria and bronzes. Only the highest quality works, dating from the early 18th century to the beginning of the 20th century, are selected for auction.

- African Art (AA)

The category African Art contains sales of African and Oceanic Art features. Important sculptures, artefacts, ceremonial clubs and shields and costumes from many cultures.

- 19th Century Art (19th)

ery year Christie's holds 20 high-profile sales of 19th Century European Art in Europe and the US, with 13 sales dedicated exclusively to this category and 7 themed sales of Nordic, Spanish, Russian, Swiss and Orientalist art. Christie's is therefore better placed than any other major or regional auction house to translate highly targeted sale opportunities into extraordinary sale results. 19th Century Art sales are typically held in Amsterdam, London, Madrid, Milan, New York and Paris, allowing Christie's to offer collectors a rich variety of regional artists at a wide range of prices.