Unraveling Art Prices

A study about determinants influencing the price of art on the Dutch primary art market, 2000-2010

'In exchanging art for money, we exchange one abstraction for another.' - Daniel Spoerri (1988, in Velthuis, 2005b, p. 34)

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Abstract

The prices paid during art auctions often seem to have lost any sense of reality. Though sales on the primary market are less spectacular in terms of price, they are also surrounded by a lot of insecurity and complex interactions. Therefore, the goal of this quantitative study is to gain more understanding of the primary art market and the determinants of art prices. A unique database provided by the Mondrian Foundation, consisting of more than 29.000 entries including information on art sales, was used as the basis for the analyses. Additionally, variables on the about 1.500 artists and 200 galleries were added in order to be able to compare the research with the first study done this way on the Dutch primary art market. New variables like style of the artist and art fair participation were added to start new paths for further research.

The multilevel analyses included variables on the levels of art work, artist and gallery. This multilevel structure accounted for the hierarchy in the data. The results showed that the variables on art work level explain the most variance, followed by artists variables. Gallery variables explain a very small amount of the total variance. On the different levels, category, year of sale, gender, age, art fair participation and location of the gallery appear to have the most influence on the price.

Key words: art market, primary art market, art price, price determinants, art works, artists, galleries, art fairs

Acknowledgements

This thesis has brought me many challenges which in the end turned out to be many learning experiences and resulted in this thesis. As much as a thesis, and certainly this one, is about the process, the end result is also very important. Therefore, I proudly present my thesis and I hope that readers will be or become as fascinated by the primary art market as I am.

In the first place, I would like to thank Marilena Vecco and Giacomo Di Benedetto. Despite the fact that my thesis took a bit longer than initially planned, Marilena always held faith in me. Giacomo helped me enormously by executing some difficult multilevel analyses. Marilena and Giacomo, thank you, it is much appreciated. I am also very grateful to the Mondrian Fund, who granted me access to their unique database with sales data on the Dutch primary market.

Many people supported me in some way during the process of writing this thesis. A big thank you to friends and family who motivated me to finish it or who offered some distraction. From now on, no appointments will be cancelled anymore because of my thesis.

Though I am working in a completely different discipline at the moment, the art market will always have my attention and I hope that I will always keep on learning about art and art research and will keep on visiting exhibitions and art fairs. Most of all, I am incredibly curious to the state of the art market and the (transparency on) prices once I will use the *Kunstkoopregeling* myself.

Table of content

List of tables

1.   Introduction

On November 12, 2013, a triptych painted by Francis Bacon was sold for 142,4 million in dollars at Christie's in New York. Ranking it first as most expensive art work sold at an auction. The former record of the highest auction price stems from 2012, when The Scream by Edvard Munch was sold for 119,9 million in dollars. These kind of auction sales create the notion that the price of art has lost sense of reality and is not related to the art work itself but subject to speculation.

These kind of stories make it to the newspapers. However, a major part of the art market will never receive this amount of attention from the general public. This part consists of many upcoming artists, trying to sell their work at galleries or directly to individuals. It is about galleries run by passionate owners, who seem to care more about art than about the profit they are making. And it consists of many individual, incidental buyers who can afford art works worth a couple of thousands of euros. Those sales are numerous but do not make it to the headlines.

Although the sales on this segment of the market, called the primary market, are less spectacular, they are also surrounded by a lot of insecurity and complex interactions. The prices are lower, but still not always directly relatable to the production or labour costs the artist has spent on it. The art market however, does seem to become more 'democratic' and transparent. On art fairs, more and more gallery owners add a price tag and fairs aimed at starting art collectors or buyers with a limited budget are upcoming. Another example is the success of the Dutch *Kunstkoopregeling[1],* which grants art buyers an interest-free loan in order to finance an art work.

Talking about money is becoming more common in the art world but the relationship between art and money remains fragile. The art world stresses the aesthetic or intrinsic value of an art work and the general assumption is that artists do not create art for the money (Velthuis, 2003b). However, artists as well as dealers do have to make a living and in order the sell art they have to set a price. The determination of the price remains a mystery for many people, also on the primary market. Despite this haziness, the price is a very important aspect of the contemporary art market, since it gives signals about the quality of the art work and could influence the demand.

1.1   Problem formulation

Not much research does exist on the setting of the price of art on the primary market. Obtaining reliable sales data is relatively easier on auctions than on sales by galleries (Velthuis, 2002). Therefore, this study would like to extend knowledge by confirming or contrasting research outcomes from previous studies. The research which will form the base for this research concerning

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[1] For more information about the *Kunstkoopregeling*, see 1.5.

theory and methods is a study by Velthuis (2002) and a related article written by Rengers and Velthuis (2002). This concerns the Dutch primary market over the period 1992-1998 and was the first study which featured a lot of primary market sales data.

In the meantime, a lot has changed in the art and financial world. It will be interesting to see whether Velthuis' (2002) findings can be confirmed or rejected and which aspects are more or less important now as determinants of the price of an artwork. The outcomes can be interesting for the art world itself and could create more clarity about the prices in the art market which sometimes seem randomly chosen.

1.2   Research aim

The aim of this quantitative research is to distinct the factors which determine the price, examine to what extent they determine the price and compare the findings with earlier results. The focus will be on the economic value of a work of art and on producing more knowledge about the price setting on the primary art market. In this way, this study aims to contribute to the research area of the primary art market by extending existing literature and findings.

1.3   Research question

In order to research the determination of the price of art, the following research question is formulated:

To what extent do variables on the three levels of art work, artist and gallery, explain the price of art works sold in the primary art market in the Netherlands during the years 2000 till 2010 with the support of the Kunstkoopregeling?

More information on the reasons for the division in three levels is to be found in the theoretical framework. In the chapter about methodology is explained why this period is chosen. Besides this main question, several sub questions will assist to answer the main question:

- *Which variables belong to, respectively, the level of the art work, the artist and the gallery?*
- *Which variables explain the price most on each level?*
- *Which level has the most influence on the price?*
- *Which similarities and differences can be found on determinants of the price when comparing the periods 1992-1998 and 2000-2010?*

1.4   Scientific and societal relevance

In the Netherlands, Velthuis (2002) has conducted the first and only study on the Dutch art market which featured a lot of sales data. This data came from a dataset maintained by the Mondrian Fund, because of their initiative the *Kunstkoopregeling*. The dataset covered the period 1992-1998 and

discerned a couple of important determinants. This research (Vetlhuis, 2002) does not have a successor so far. It will be interesting to see which aspects are more or less important now as determinants of the price of an artwork. Velthuis (2002) also named a couple of matters in his discussion which need more research, providing some of the triggers for this study.

Besides Velthuis (2002), other scholars have researched the primary art market but the amount of research remains limited, including international studies. The availability of a huge database containing sales data provides a rare opportunity to contrast the research by Vetlhuis (2002) and find new insights. By adding new possible determinants, this research can really contribute to the field of research. Information about the artist and gallery was added, which included a lot of manual research. This resulted in information about the nationality, age, residential place and style of the artist and the location, age and art fair participation of the galleries.

The most important new variable concerns art fair participation. This relates to the increasing amount and importance of art fairs in the art world. Art fairs are becoming a more common way of selling art and in this research, the participation at art fairs by galleries will be included. Participating in an art fair is often a costly affair, which could affect the price.

The outcomes of this research can be interesting for both scholars and practitioners, since it could create more clarity about the prices in the art market which sometimes seem randomly chosen. Gallery owners can compare the insights from this study with their own rules of thumb and the importance they place on certain characteristics. This study could also provide insights to young artists, who do not have experience with pricing their work accurately and will be able to gain a better position in pricing discussions with gallery owners or buyers.

1.5 Positioning within cultural economic studies

Cultural economics contains a wide field of different topics and sectors. It ranges from established segments, like the fine arts or the performing arts, to newer segments, like the entertainment and creative industry. As Towse (2003) points out, 'it is the application of economics to the production, distribution and consumption of all cultural goods and services' (p. 1). This research topic touches on all three parts, but focuses on the distribution of art works, since it is about pricing an art work. The price mechanism is an important topic within cultural economics (Towse, 2003). In this thesis, it will not be about policy, for example whether the government has to intervene because the market does not deliver a fair price. It is about the construction of the price on the market. The approach used is that of microeconomic analysis, one of the often used approaches in cultural economics, which is especially used on pricing issues on the art market (Towse, 2003).

1.6   Personal motivation

I have always been interested in fine art. It started by visiting museums and then evolved in taking classes on art history and art management, doing internships at art departments of organisations and visiting art fairs. Combined with my interest in economics, I started to become more and more interested in how the price of art was set. This was caused by my visits to art fairs and the enormous differences in prices I experienced. Apart from which works of art I valued personally, I found it hard to discover a logic in the price setting. Because of this interest, the first paper I had to write for my master Cultural Economics was about the price of art. During the literature review, I found out about the research by Velthuis (2002) and since then, I focussed on this topic for my master thesis.

1.7   Explanation of the *Kunstkoopregeling*

The basis of this research consists of a dataset, derived from the Mondrian Fund and consist of information on sales financed by the *Kunstkoopregeling*. The *Kunstkoopregeling* is an arrangement coordinated by the Mondrian Foundation which has the aim to stimulate sales on the primary market in the Netherlands. The arrangement makes it possible to buy an art work and pay a small part of the price each month without having to pay interest. (Rengers & Velthuis, 2002) These subsidies are stimulating the market on the demand side instead of many subsidies which only focus on the production side. (Gubbels, 1999) This makes not only galleries but also policymakers and politicians enthusiastic about it.

Since 1997, the Mondrian Foundation is in charge of the *Kunstkoopregeling*. The *Kunstkoopregeling* has a predecessor in the Rentesubsidieregeling. The Rentesubsidieregeling exists since 1984 and was the successor of the Aankoopsubsidieregeling Kunstwerken (ASK), created by the Dutch government in 1960 to stimulate individuals to buy contemporary art. The arrangement stopped in 1979. (Gubbels, 1999). After a couple of years the Rentesubsidieregeling appeared as a new arrangement. This initiative was created by the Vereniging Galeriehouders and taken over by the government in 1984. The aim of this arrangement was to stimulate individuals to buy art and to improve the income position of artists. A secondary aim was to support galleries.

There are some differences between the Rentesubsidieregeling and the *Kunstkoopregeling*, especially in the selection criteria. A point of debate has always been the selection of participating galleries. (Gubbels, 1999) Because the *Kunstkoopregeling* has broader selection requirements, and is less strict concerning quality and turnover criteria for galleries, more galleries are admitted by this arrangement than by the former. (Gubbels, 1999)

The requirements for buyers and the art work were about the same as the current requirements of the *Kunstkoopregeling*. The loan had to be minimal 500 guilders and maximal 12.500 guilders. According to figures, the arrangement was a success. The amount of loans was

more than 700 in 1985 and more than 4000 in 1992. (Gubbels, 1999). The quantity of galleries also increased, from 67 in 1985 to 197 in 1992.

Another study of Gubbels (& Hannin, 1992) showed that a small amount of galleries had a substantial increase in turnover due to this arrangement. For some artist it also increased their income but for many artists it increased their income only by a small amount of money. The art bought by this arrangement appeared to be relatively 'accessible' art, both in medium (paintings, graphics) as in content (Cobra, traditional figurative and abstract art from well known and less well known artists). The goal to increase the sale of art works of 'museum quality' was not reached. (Gubbels, 1999)

The current requirements for entitlement on the *Kunstkoopregeling* are:

- The art work is created after 1945 by a living artist.
- The minimum price is €450.
- The loan has a maximum of €7000 per art work.
- The prepayment is at least 10% of the price, with a maximum of €450. Concerning works with a higher price than €7450, higher prepayments are required.
- The duration of the loan has a maximum of three years. Early redemption is always possible.
- The minimum redemption per month is €22,50.
- Minimum age of the buyer is 18 years, maximum age 75 years.

2. Theoretical framework

In this chapter the theoretical framework will be outlined. Important studies and concepts will be explained in order to create a context for the results of the statistical analysis. Starting below with defining the art market, this chapter will start broad to become more specific in the end about the price of art. The art market consists of a lot of factors and specific habits, which requires a comprehensive overview. This will provide room to elaborate more on the results in the discussion, since all the important concepts will be explained in this theoretical framework. First, the market structure will be outlined and secondly the supply and demand side will be discussed, including important actors like art dealers and buyers. This chapter concludes with the possible determinants which could affect the price of art.

2.1 The Market

The art market will be discussed extensively in this thesis, since it provides the context for answering the main question about the factors influencing the price of art. To start at the beginning, what is a market? The basis of a market is that it consists of a demand and a supply side. Together they are supposed to decide on the price of the products being sold. An economic approach considers both the demand and the supply, as well as their interaction. (Frey & Pommerehne, 1989) Economists not only discuss those two sides, but also the people and their behaviour (Frey & Pommerehne, 1989). As will be discussed later, this behaviour is very important for the art market.

Aspers (2007) defines a market as 'a social structure for exchange of rights, which enables people, firms and products to be evaluated and priced' (p. 478). To be able to price a product, competition is needed in order to evaluate products in relation to each other (Aspers, 2007). How this competition is shaped, depends on the amount of competitors and is discussed in different theories about market behaviour. For example, when many small firms are competing, there is often a high level of competition and diversity of products. As markets increase in size, some organizations take a leadership position and limit the level of competition and the incentive to innovate.

According to Aspers (2007), three problems have to be solved in a market. The first one is the definition of the goods or services traded in the market. Second, the ruling manners or culture in the market and the informal and formal institutions who decide on it. And third, the determination of the economic value, mostly called the price of the good or services traded. Aspers (2007) gives two solutions to these question: the standard and the status market, with different price setting mechanisms. The standard market is characterized by homogenous products, a scale of quality to evaluate the goods without taking into account the traders and a focus on the commodity. In a

status market, the social structure is dynamic, the traders have more influence on the goods and current trends and the focus is on the market actors.

After comparing different definitions of the art market structure, the art market will be outlined, following the three problems of definition of goods, the rules and actors, and the determination of price, to see whether it follows the rules of a standard market, as Frey and Pommerehne (1989) say, or a status market.

2.1.1 The Art Market

First, the art market and research related to the art market in general will be explored in order to define it. The art market refers to the place where the distribution of art works takes place (Savage, 1969). It consists of many players and the way they interact can differ according to country or art market. This research will be about the Dutch art market but there are many similarities globally seen. The literature used is often applicable to the Dutch market, unless otherwise stated.

The art market can be divided in several submarkets which are classified differently by academics. Towse (2010) makes the division in two submarkets and defines the primary market as where work by living artists is bought and sold. The primary market supply depends upon the number of artists and the individual artists' current output. The secondary market deals with works of art, almost always by deceased artists that are being sold on by an owner through a sale or auction by a private dealer. (Towse, 2010) This definition has a focus on the good sold.

Throsby (1994) divides the market in three parts where the primary market consists of local artists and small dealers, the secondary market of international recognized artists and dealers who also have work in stock made by popular dead artists and the tertiary market is the international art auction market. He focuses on the geographic scale and on the prices.

Singer and Lynch (1994) also use a division in three markets, but focus on the sale itself. They see the primary market as the place where artists sell to dealers and collectors, proceeding in the secondary market where dealers sell to collectors and the tertiary market where art coming from the secondary art market is resold at auctions. Robertson (2005) follows the division of Singer and Lynch (1994) but also adds a fourth level, the illicit trade.

Campos and Barbosa (2008) use an approach which can be seen as a combination between having a focus on the good sold and the sale itself. Their primary market consists of 'local art fairs, small dealers, private buyers and individual artists who supply works to galleries' (Campos & Barbosa, 2008). In the secondary market, public and private collectors buy art of established artists from dealers in the major art cities like New York, London, Paris and Tokyo. At the highest level,

there is an international market where auction houses like Sotheby's and Christie's are the main players and sell well known art works for high prices.

A completely different view, is a division according to the level of recognition an artist has (Moureau & Sagot-Duvauroux, 2010). This divides the art market in, first, a market for upcoming artists. They often operate on a local level and are trying to receive attention from galleries or win a prize to stand out of the crowd. A second market consists of emerging artists who are already recognized by the market (galleries) or institutions. The third group are the established artists, who are part of the art history and which works are very expensive.

In all the definitions it becomes clear that the art market is hierarchical and that the different levels can be closely linked (Campos & Barbosa, 2008). The distinctions made by the academics mentioned above differ in their focus and borders between submarkets. Some divide the primary market in local and international (Throsby, 1994) or add an international top to the secondary market (Gérard-Varet, 1995). For this thesis, a definition with a clear distinction between first time sales and second time sales is needed since it will focus on art works sold for the first time. Because of that, in this thesis a distinction will be made between only a primary and secondary market since it is the clearest definition for the primary market, the focus of this thesis and also used by Velthuis (2002), who conducted a research which will form the base for this research. This distinction is close to the one of Towse (2010), though it is not the case wether an artist is alive or dead, but whether the art work is sold for the first or second time. So, the focus in the used definition is on the moment or times an art work is sold.

Focus	Author
Good sold	Towse (2010)
Geographic scale and price	Throsby (1994), Gérard-Varet (1995)
Sale	Singer & Lynch (1994), Robertson (2005)
Good sold and sale	Campos and Barbosa (2008)
Level of recognition artist	Moureau & Sagot-Duvauroux (2010)
Moment or times an art work is sold	Velthuis (2002)

Table 2.1. Overview of the focus of art market classifications. (Source: own elaboration.)

Primary Market

As already said, by the primary market the part is meant where art is sold for the first time. This can happen in several ways. Artists can sell their work to galleries (or have another arrangement with

the gallery), directly to clients or use other canals, like a(n) (local) art fair[2]. The competition in the primary market is fierce since there are many suppliers and fewer buyers. Galleries play an important role by matching supply and demand but for beginning artists and galleries it can be difficult to stand out in the overload of information potential buyers receive. In the paragraphs about artists and galleries this will be explored in depth. If an artist is successful on the primary market, he or she will probably make it to the secondary market as well.

Secondary Market

The secondary market consists mainly of established artists who earned a reputation and whose works circulate on the secondary market to be sold for at least a second time[3]. On the secondary market there is still some inequality in supply and demand but it is far less than on the primary market. Dealers (which can also be galleries who are active on both the primary and secondary market), auction houses and wealthy collectors play an important role in the secondary market (Gérard-Varet, 1995). The secondary market operates in a different way than the primary market, but price remains an important point, if not more important. Many factors play a role here too but in another way than in the primary market. The search for the right price is solved by the buyers, who will determine the price in the auction room by bidding. Auctions are also meant to match sellers and buyers and to exchange a good and determine a price (Smith, 1989). According to Smith (1989*), 'the function of an auction is to establish values using whatever means it can'* (p. 164). To give an idea of the size, Rouget, Sagot-Duvauroux and Pflieger (1991, in Moureau, 2000) have estimated that public auctions make up for only 25 % of all the transactions in the art world in the 20th century.

2.2 Supply on the Primary Art Market

Since the primary market will be the focus of this study, it will be explored in more depth below. Important segments of the primary art market are artists, galleries, art fairs and of course the good itself; the art works. These segments will be characterized by using results of former research. Besides general information on the mechanism of the primary market, this part will focus on the Dutch market and figures about the Dutch market. First, the supply side will be explored and then the demand side. This division is made for more clarity, but as will become clear, all the segments and actors influence the supply as well the demand side since they are intertwined.

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[2] Art fairs are included in the primary market in this thesis since many galleries present new work on art fairs. However there are also galleries which combine their gallery and dealer activities and offer work on art fairs which is already well-known. This also differs per art fair, some art fairs, like TEFAF, are more dealer oriented instead of focusing on new art works.
[3] Recently, Damien Hirst showed that the secondary market can also be used to sell works for the first time but this is an exception.

2.2.1 Characterization of art works

Art works can be characterised in different ways, depending on the approach. In the neoclassical approach, the market is seen as the most 'efficient arbiter of value (economic and critical) and the optima device for allocating resources' (Horowitz, 2011, p. 21). An often cited neoclassical economist who made remarks about the art world, is William Grampp. He is in favour of the Nothing but theory, stating that the art world structure is the same as it is in every other sector. According to Grampp, the art economy is nothing but an ordinary business system where the law of price rules (Horowitz, 2011). Following this approach, Grammp thinks that art should be seen as a commodity (Robertson, 2005). Crane (1987) describes the art business as 'dealing in myths' and this may explain why people cannot always identify art works as commodities. This also depends on the used definition of commodity. Commodities can be seen as goods which are undifferentiable, where price is the only decisive factor. This differs per person, since some people take sustainability into account, other do not.

In the specific meaning of commodity, 'a product supplied without qualitative differentiation', art is not a commodity. In the wider sense of a commodity as a marketable product, art could be seen as a commodity. Art is a marketable good, but the seller and the quality are two very important aspects of selling art. For this thesis, it is important that art works are marketable goods and in that sense they could be seen as special commodities. Horowitz (2011) pleas to focus on how commodification takes place instead of whether art works are really commodities. This is an interesting point, especially for the lower part of the market which we focus on in this thesis. In this part, price could be an issue for potential buyers on which they base their decision, but because art is such a heterogeneous product the assumption is made that price is not the decisive factor.

Besides a commodity, art can be characterized more specifically, as a luxury good, as an experience good (a good that has to be tested or consumed before its true quality is revealed) or as an information good (a good which has much of its value tied to an idea) (Robertson, 2005, p. 3), like Towse (2003) and Barrere and Santagata (1999) argue. Different explanations exist in order to qualify an art work as one of these divisions. A lot of authors have written about distinguishing artistic goods from industrial goods (Grampp, 1989, Throsby, 1994, Moulin, 1967, Wijnberg, 1995 in Barrère & Santagata, 1999). In their article, Barrère and Santagata (1999) discuss several characteristics of art works and agree that a good cannot be defined as art only by its originality, whether manual labor was involved or whether it has functional utility. They use the definition of artistic semiotic goods and take the sign bearer function into account. According to Barrère and Santagata (1999), it is very difficult to formulate a rational pricing system, because of the semiotic

16

nature of artistic goods. However, they also mention that all dimensions of an artistic good (e.g. political, social, aesthetic) are subject to the economic dimension.

Another often used classification of art works is to call them a collective good. This can be argued for art works in museums or in public spaces, but for private art, as part of a private collection, it does not apply. A characteristic of a collective good is that it must be indivisible, which means that consumption by one person does not reduce the quantity available to other consumers. In the case of a private collection, the works of art are divisible, since buying an art work to put in a private space as a living room limits the availability of the art work to others (Greffe, 2002). Well-known art works can be seen as a public good but art works sold on the primary market often do not have this association yet.

Though art works can differ a great deal from each other, there are some general characteristics that differentiates them from other goods. Art works are very heterogeneous since there is often only one unique piece. Campos and Barbosa (2008) call them 'an extreme case of a heterogeneous commodity' (p. 31) since every piece is different. Besides unique pieces there also are art works in edition which are numbered in order to make them as unique as possible too. In principle, art works do not have substitutes, although works of the same artist or school could be regarded as substitutes.

One of the main challenges to the standard idea of a market is that an art work is not a homogenous product (Moureau, 2000). That every object is unique and that they do not have an equivalent nor concurrent means, according to Marshall, that the balanced price is mainly set by incident. Moulin (1987) argues that in an art market all products are different from one another and in essence not substitutable. Hence, competition in the economic sense is imperfect.

From all these characterizations, it becomes clear that art works are seen as heterogeneous goods. The competition is not based on price but on their unique characteristics, which challenges the economic mechanism of price setting. Quality is very important, which will be deepened in the next part, about the value of art.

2.2.2 Values of art

When evaluating an art work, the focus is often on the value and not on the price. They can be seen as two completely different things but the value, the price and the art work itself can have an interesting relationship with each other. This thesis is about the price but since the values of an art work can influence the price, different kind of values are discussed below. Academics have given art works different kind of values, like art historical value, intrinsic

Values of art
Fundamental value
Economic value
Critical value
Symbolic value
Aesthetic value

Table 2.2. Values of art.

17

value, financial value, social value, bequest value, economic value, critical value and symbolic value. (Horowitz, 2011) These values can influence the price but the price does not always reflect all the values, especially on the primary market where prices are relatively low.

Important to note is that the value of an art work cannot be attributed on the basis of production costs and only to a small extent to merchandising costs. According to Crane (1987), 'value is attributed entirely on the basis of evaluations of quality by experts like critics, curators and eminent collectors. These criteria can change, as style can change' (p. 112). This implies a dynamic process and a value that can change. Moulin (1994) mentions that the 'contemporary art world has an unlimited supply and the estimation of art values is ruled by uncertainty' (p. 6). Robertson (2005) also argues in the same way, according to him, the value is determined by internal and external forces. Some of them are fixed, like many of the internal forces as size, materials, date of creation, condition, provenance, subject matter and name of the artist. But others are subject to changes as the internal force reputation of the creator and external forces as macroeconomic and political forces often reflected in the stock market. Mirowski (1990, 1999 in Hutter & Throsby, 2008) follows the idea that the interaction on the art market is very important and argues that value is socially constructed. This means that determining value cannot be distinguished from the social context and that all values are social. The social aspect is also evident regarding the price setting, which will be discussed later on. This implies a dynamic process, which could complicate the valuation (and price setting) because of the importance of the right timing. Some often mentioned values which can be attributed to an art work are explained below.

Fundamental value

The fundamental value of a painting depends on the artistic recognition of the artist and his position in the art history (Moureau, 2000). The fundamental value of an art work is mainly determined by the interactions of experts in the field. The first network of actors who together come up with an opinion about a work or artist are often the basis for the fundamental value and create the first determination of quality or value. (Moureau, 2000) A couple of individuals determine the value in an interplay with each other (Moureau, 2000). The legitimizing authorities are actors who have a good knowledge of art history and know how to execute influence by creating small historical events which influence the notoriety of an artist, for example by a museum purchase, an exhibition or a monography. These actors can be conservators, collectors, critics and dealers. (Moureau, 2000) Thus value can be determined by a small amount of people who execute influence and therefore Moureau (2000) thinks this is a limited definition. It shows the difference with industrial objects

which are selected by the consumer while works of art are chosen by experts (Wijnberg, 1995). Or, more specifically, the reputation of an artist is made or broken by experts, not the public.

In this thesis, the art historical value will be included in the fundamental value, though art historical value could also be seen as the level of innovation or impact on new styles. However, art historical value is also determined by experts, so it is very close to the fundamental value. On the market, the price does not always reflect the fundamental value or artistic quality. One of the reasons can be the different or unclear signals sent by legitimizing institutions. It can be difficult for buyers to determine which signals they should attach more value on and it also takes time to gain recognition or become part of the art history. (Moureau, 2000)

Economic value

If an art work has economic value, it means it can be bought and sold for profit (or loss) (Horowitz, 2011, p. 21) and that it can be measured by economic indicators, or simply as the price when it is bought or sold (Hutter & Throsby, 2008). Hutter and Throsby (2008) call this the 'market test', implying that the fact of selling confirms the right price setting. In this thesis, the sale is a condition for an art work. Hobbes (in Robertson, 2005) even argues that 'art is only art when it has been exchanged for money' (p. 4). To a certain extent, this applies to this thesis, because only art works are included which are sold. However, the discussion whether art is only art when it is sold goes beyond the scope of this thesis. The economic value is the same as the market value; the amount of money involved in selling and buying art works (Abbing, 2002). To a great extent, this depends on the consumer's willingness to pay or his purchasing power. As pointed out earlier in this thesis, Barrère and Santagata (1999) argue that all other values of an artistic good are subject to the economic value. This is an interesting comment, since it says that the economic value could be the sum of the other parts, the other values.

Critical value

The critical value of an art work consists of those features that differentiate one piece from another. Because of the heterogeneous nature of art works, this consists of many aspects. However, it is important in a market where uniqueness is valued highly and it distinguishes art from the reproduction market. Because Lancaster says that products in one market should have some characteristics which are identifiable in an objective way, Moureau (2000) identifies three general characteristics of a painting: the support (material, as well as the base (wood, canvas) as the utensils (oil, crayon), combination of base and utensils, dimension), the composition and the signature. It is

remarkable that in the art world, these characteristics can assign art works to a certain category but also differentiate them from another piece, even within the same category.

Symbolic value

The symbolic value distinguishes the art economy from other markets, according to Horowitz (2011). Ideas are very important, it is not only about the object itself. Moulin (1994, in Jyrama & Ayvary, n.d.) emphasizes the social construction of the value of works of art, as will be explained more later in this thesis. It links to social status and prestige of ownership. The ideas and value people in the art world attach to an art work could influence the willingness of potential buyers to pay a certain price, regardless of their own taste. This is an extra factor influencing demand.

Aesthetic value

According to Greffe (2002), 'the primary function of any art work is to be beautiful. On the contrary, anyone having a proper artistic knowledge will judge the work according to artistic, and not aesthetic, criteria' (p. 55). Art works can be described in advance but the aesthetic experience differs per person and by seeing or experiencing it in real life or for a longer while. (Caves, 2000) So, opinions of other people can shape someone's opinion about an art work, but in the end art is an experience good and the effect can only be experienced individually, as aesthetic judgment differs per person.

Above we explored the characteristics of an art work and the values a work can have. Below the producers of the art works and important actors on the supply side will be discussed, the artists.

2.2.3 Artists

Like it is hard to define an art work, it is also hard to define an artist. Education or degree cannot be used as a criterion. Artists can have a degree of an art academy, followed courses in their discipline or are completely autodidact. Education is no guarantee for success. Research displays that experience has often more effect on the artist's income than years spent in education (Caves, 2000) and that education has a smaller positive effect on income than in other occupations (Frey & Pommerehne, 1989).

Stating that an artist is someone who makes art is also very vague, since the output can be as diverse as a painting or land art. Crane (1987) defines an artist as an individual who exhibits his work in a recognized gallery or exhibition space with a fair degree of regularity (at least once every five years). (Crane, 1987) This is a sensible definition, since it implies some sort of professionalism and collaboration with other actors in the field, which implies some notoriety and a certain position

in the art market. Frey and Pommerehne (1989) define an artist as somebody who is engaged in producing art. Then the question arises what art is. Frey and Pommerehne (1989) discern eight criteria that might be used in order to determine whether someone is an artist. These criteria consist of:

- the amount of time spent on artistic work

- the amount of income derived from artistic activities

- the reputation of an artist

- the recognition among other artists

- the quality of the produced work

- a membership of a group

- professional qualification's

- someone's self-evaluation of being an artist (p. 147)

Many criteria involve some sort of subjective evaluation. As was the case with the art works, the dataset implies that someone is an artist when he or she is selling work. This could be debated but because the dataset already exists and the focus is on the price, in this thesis there will be no discussion about the exact definition of an artist. Because artists are important players on the market, it is interesting to make some remarks.

After formal education, artists often proceed to develop themselves. It is very important to develop an own style and to get accepted and become well known. An artist has to get in touch with other artists, collectors, writers and dealers. Dealers dominate the intermediation between artist and collector. When looking for exposure, a well-established gallery is the most ideal option. Artists can put an exhibition together themselves but then there is often still a lack of commercial insight. A commercial gallery is a good option. Question is which gallery fits the style of the artist best. The example Caves (2000) gives where a gallery owner see the portfolio of a 1000 artists a year, visiting only 50 studios, putting a group show together with 5 of them and finally selecting 1 artist for his gallery, shows the competitiveness and difficulty for a young and unknown artist to become successful. Young artists also have to make economic choices between money and how much time they are able and want to invest in their artistic career. (Caves, 2000)

If an artist succeeded in becoming well known, he can influence prices by limiting or extending their supply. (Greffe, 2002) It depends on the business sense of an artist how dependent he or she is of the representing gallery and how much influence he or she has in the decision making. An artist can have an exclusive relationship with a gallery. But an artist can also sell work to dealers who want to resell them. This however creates difficulties with the promotion of the artist,

because of spillover problems, decreasing the motivation of galleries to promote an artist. It also diminishes the intention of a gallery to keep prices high, for example by joining bidding in an auction. Consequently, it are often established artist who choose to being represented by different galleries. (Caves, 2000)

Well known and recognized artists can earn a comfortable income but the majority has to complement his or her income. The image that every artist is poor, has to be refined however. Frey (1989) distinguishes different kinds of income, like market income, patronage (government, companies), prizes (publicity) and non-monetary income. Frey and Pommerehne (1989) make three remarks about the incomes of artists. First, the average income does not differ much from the total workforce but it is clearly lower on average than for other workers. Artists often derive their income from a couple of sources, like complementing it with teaching. And third, the income distribution is more unequal than in the workforce as a whole.

Artists in the Netherlands

According to a recent research on the visual arts sector in the Netherlands (OCW, 2011), there are 7.000 artists in the Netherlands. This figure is calculated based on a group called 'fine arts, language and others', so this group does not exist of artists only, but also of other creative professionals. However, this figure is the most precise amount known, since not all visual artists are registered yet (though it is obliged since 2008). The majority of them (59%) is women, in contrast to the data shown in the research by Velthuis (2002), where 75% is man. Many artists (percentage not mentioned) have a supplementary income which makes up about 36% of the total income. This means that many artist have another, part-time job. The income distribution of artists is more unequal than the general income distribution in the Netherlands, with an overrepresentation of low incomes, which is in line with the research of Frey and Pommerehne (1989). Based on figures from 2001, 66% of the artists had an income of less than 10.000 euro. Only 3% had an income of more than 50.000 euro. (see table 2.3.) These figures demonstrate once again that artists who are operating on the primary market often have a hard time making a living by their art. Caves (2000) gives the same picture of the American market, he also found that the dispersion of income is wider than in other professions and a lot of artists will not make it and leave for another career.

Turnover in €	Sales/turnover from visual arts (%)	Turnover visual arts minus artists' costs (%)	Total income minus artists' costs (%)
None or negative sales from visual arts	12	41	8
1 to 2500	13	12	6
2500 to 5000	10	10	13
5000 to 7500	11	10	16
7500 to 12500	17	10	27
12500 to 25000	21	12	21
25000 to 50000	9	4	7
50000 or more	6	2	3

Table 2.3. Income division of visual artists in 2001 (in %). (Source: Research voor beleid, 2011, p. 24)

2.2.4 Galleries

Tasks

In order to sell art works, potential buyers have to know about a certain artist and his or her work. As discussed above, it is quite a challenge to get noticed because of the huge amount of artists. Since marketing or public relations is not the core business of an artist, the gallery can bolster this need. Galleries often make the initial contacts with new artists and make it possible for them to reach a larger audience. (Crane, 1987) The main goal of a gallery is to promote the artist's career by explaining the art works and the creative process to the public, providing context, organizing shows, arranging loans to museums (in a later stadium) and representing the artist at befriended galleries in other cities (Caves, 2000). The dealer or gallery owner is very important for the career of an artist and in determining the quality or value of the art works.

The tasks of a gallery owner are both commercial and artistic, a challenging combination. The task are intertwined and can reinforce each other. For example, the role of a gallery owner is to discover promising artists and promote them. This can be done by artistic activities as organizing exhibitions and writing articles or catalogues. This contributes to the commercial goal of creating a demand as big as possible, which is in favor of the artists but of course also of the gallery.

Kind of galleries

Galleries can differ a great deal from each other. As the art market can be divided in different levels according to the good, way of sales, price level or geographical scale, there are also several divisions to make when it comes to galleries.

Robertson (2005) ranks galleries in four trading levels, from alpha to delta, combining the aspects of good and the price. The alpha and beta level are part of the secondary market, where old masters and 20th century high quality art respectively established contemporary art is sold. The third level is the primary market and consists of works whose quality is not yet proven. This is where art dealers work. The art works can increase in value and be resold on the secondary market in the future but they can also appear to be worthless. For this thesis, the gamma level is interesting. This is the level with a lot of uncertainty, which makes it hard to set a price. The last level consists of art without value, for example purely decorative 'art works', which are not relevant for this thesis. (Robertson, 2005)

Savage (1969) uses a categorization of three levels of dealers, based on the price. At the top are specialized dealers and they base their price on the demand rather than on costs. Smaller dealers with more general knowledge will add a profit margin which is open for negotiation and the lowest level consists of second hand dealers who often add a fixed percentage. Since demand is known, specialized dealers will often operate in the secondary market. In the primary market, there is often few information about demand and that leaves room for negotiation.

Bourdieu also distinguishes between commercial and genuine players. The first group is described as art dealers who act as ordinary businesspeople, for example art investment funds, this is in line with the 'nothing but' theory of Greffe (2002). On the other hand are elite dealers who see art and money as two distinct worlds and pretend to be only interested in the artistic value. (Horowitz, 2011) This relates to the motives for starting a gallery. Just as collectors have their own reasons for buying art, gallery owners also have their own reasons to enter the art world. 'Excitement of trading in a unique commodity, the intellectual appeal of art and the opportunity to privileged information' (Robertson, 2005, p. 24) are possible reasons. Whether the galleries in this research are commercial or genuine is not researched but as will become clear in the part below, it is hard to make a living as a gallery owner, which implies intrinsic motivation has to be high.

In this thesis, the focus is on galleries operating in the primary market and on the price setting. Because of this, there is one main distinction in galleries which is important to make. This is the distinction between brokers and dealers, which is also mentioned above. Dealers buy art from an artist and then try to sell it. This requires a lot of financial backup and is often done in the secondary market. In the primary market, most galleries could be classified as brokers. They

regularly operate on small margins and have little or no stock. They more often act as brokers instead of dealers, since they lack the financial funds to purchase works of art. (Robertson, 2005) In this case, they have an agreement with an artist, whose work they display and promote in their gallery. In the event of sales, the gallery and the artist both receive a percentage of the selling price. The percentage depends on the reputation of the gallery and the artist and how much they each can demand. In this thesis, the researched galleries are all brokers, although some of them might have some work in stock.

Success

The main issue of many galleries is that they have to compromise between their artistic ideals and making money. (Moureau & Sagot-Duvauroux, 2010) Being an authority in an artistic way doesn't mean the gallery is also successful in a financial way. In the eighties and nineties many galleries opened their doors in the Netherlands but not because of a positive economic climate. Several studies show that during the seventies and eighties, many galleries needed additional income to survive (Gubbels, 1999). Uncertainty is a main issue in the art world and galleries. Because financial return on investment can be variable, it is estimated that 75% of contemporary art galleries survive no longer than five years. (Caves, 2000) To recognize the quality of a work and determine its economic value is a slow process. (Greffe, 2002) For example, it took Pop Art twenty years to gain economic recognition, which means galleries have to have a long breath. (Greffe, 2002) So, the chance of succeeding as a gallery owner does not only depend on a reputation of discovering important artists, it also depends on the available marketing budget and network. (Moureau, 2000)

Since profits are uncertain, it can take a while before galleries will break even. Because it is necessary to have a long breath and short-term profits are rare, gallery owners often have a passion for art. Some galleries combine activities on both the primary and secondary market to stay financially vital. Galleries who also operate on the secondary market, often use those sales to finance upcoming or experimental art or to provide a historic context for the primary market sales. This is called the backroom business because it is sold behind closed doors, it is commercial, and the resale trade is not their core business. In contrast, front room business is present to the public, mostly yields break-even and/or is a symbolic investment in promotion of living artists' careers (Horowitz, 2011).

Strategies

Galleries are competing on their goods. Only galleries operating in local markets sometimes differentiate on price. Price intransparency and the difficult relationship between money and art

makes this a rare strategy. According to Crane (1987), three principal strategies are available to sellers. The first one is to increase differentiation between products. The second one is to increase visibility of products. The third and final one is to establish a leadership role in the market by the sheer fact of size or by the ability to represent the most prestigious and visible artists. (Crane, 1987)

According to economic theory, every profitable niche will be filled and every non profitable niche will be abandoned. The number of firms is dependent on the size of the market and the amount of fixed costs that each firm has to cover in order to survive and on how firms compete. If margins are high, more firms will join. Because the motivation of many gallery owners can be interpreted as art for art's sake, they probably accept less profit than commercial entrepreneurs. (Caves, 2000)

Galleries often use horizontal differentiation, they focus for example on a group of artists or innovative style (Caves, 2000). By focusing on one style or kind of art, like figurative or glass art, it is easier to market and distinguish themselves in the wide range of galleries. The choice for a certain style is an important one. Some galleries choose artists who make art works which are easy to sell, in other words: which are commercial. To make it more complicated, it can be commercial to pretend to be non-commercial because a commercial motive is often not appreciated. The market value of artists and dealers can increase because they are known as lacking a concern for money. Profit motives are present in the art world, but they are veiled. An example is the absence of price tags in a gallery. (Abbing, 2002) Other galleries would like to discover new artists and promote them, these can be considered the avant-garde galleries. Most galleries are small businesses, with one owner and a few assistants. (Crane, 1987)

Galleries often cluster in certain areas, in contrast to some economic models who advocate dispersion in order to avoid price competition with other dealers close by. This works a bit different with galleries. If galleries are located nearby each other, visitors can easily visit a couple of galleries on the same day or invest travel costs to a certain place. The proximity does not increase the price competition since galleries are often differentiated and show their own artists. (Caves, 2000) Adding to this, prices are often not very transparent, making it hard for buyers to compare art based on price. As said earlier, art works do not compete on basis of price but on the basis of quality within a certain style.

Increasing the visibility of themselves and the artists can be done in different ways. Galleries sell art works from their own gallery space, at art fairs or on the internet. This last option seems to increase in popularity but in the Netherlands its importance remains small. According to Van der Valk (2010) some galleries receive 10% of their income by internet sales but the amount of sales in general is small. A result from a research by Hollebeek (1987), which was confirmed by other studies

in the nineties, showed that the amount of regular buyers of a gallery was between twenty five and seventy five and the amount of irregular buyers between two hundred and five hundred. This implies some uncertainty in chances of selling an art work.

There is a limited number of leading galleries who are capable of introducing new work and, independent of other positive evaluations, are able to set a price (Moulin, 1994). Status and influence are very important in the art world, but also subject to complex social mechanisms. Since this research focuses on art works in the primary art market and in the lower to middle price range, not many highly influential galleries will be in it, especially since it are often the internationally active galleries who can really exert influence.

Dutch situation

In 2011 there were 555 galleries in the Netherlands (Research voor beleid, 2011). This number is based on figures of the Dutch Gallery Association (Nederlandse Galerie Associatie (NGA)). The Centraal Bureau voor Statistiek (CBS) counts 115 galleries, a big difference caused by stricter requirements about the amount of hours a gallery has to be open. The NGA does not have such a requirement.

Age	NGA members	Non-NGA members	Total amount of galleries in 2010	Total amount of galleries in 2010
In % of amount of galleries				
0 - 2 years	2	11	8	14
3 - 5 years	13	6	8	11
6- 10 years	12	23	20	20
11 - 15 years	13	17	16	12
16 - 20 years	18	12	14	24
21 - 25 years	21	14	16	8
> 25 years	21	17	18	11
Total (%)	100	100	100	100

Table 2.4. Average age of galleries. (Source: EIM, 2010 in Van der Valk, 2010)

As is clear by now, galleries come and go, many of them do not exist for a long time. It is hard for new galleries to obtain a good position in the art market and to sustain a financially viable gallery. This also implies that galleries can't play a huge role in supporting artists (financially) since they are having a hard time themselves too (Gubbels, 1999). The Dutch government seems to have played a

role in the economic position of galleries since they also provided subsidies or grants to artist. Because of this, artists were not only dependent on the market and behaved quite independent from the market.

Artists are not only clients but also competitors of galleries because they can also sell directly to collectors. Since January 2012 the WWIK[4] is cut, which could have an influence on the dependency of artists on galleries. Besides the relationship between artists and galleries, there is another reason for the economic situation of many galleries. They often still have difficulties combining their artistic ambitions with financial success. The artistic reputation is very important, but the trade of art works remains at the core of an art gallery. (Gubbels, 1999) As Gubbels (1999) said it: "galleries are in fact cultural bankers' (p. 171, translated).

The amount of artists a gallery represents can differ a lot. According to Caves (2000), an active contemporary gallery may have 18 – 25 artists, who get a show every year and a half. Data analysis will show how many artists the Dutch galleries represent. According to a recent research by Velthuis (2013), Amsterdam galleries represent on average 21.3 artists. Gubbels (1999) mentions some interesting figures about galleries, gathered by the Central Institute for Statistics (CBS, 1994 in Gubbels, 1999), which could be relevant for and compared to this research. In 1992, 400 Dutch galleries sold 52.000 art works. More than 25% of the sales took place in Amsterdam. Galleries sold, on average, eighty artworks of about 23 artists and fifty works from their stock. The total sum of sold works was almost seventy million guilders. This sum was not equally divided by the four hundred galleries, 78 (of the 400) galleries were responsible for 47 million guilders. Studies from subsequent years show similar results. It will be interesting to see how many galleries in this research are based in Amsterdam and how the sales distribution is.

	Visual arts museums		Galeries	
	SCP (2007)	CBS (2007)	SCP (2007)	NGA (2010)
Total amount of visitors (x million)	3	-	3,2	-
Frequence of visits	1,7	-	2,2	-
Total amount of visits (x million)	5,1	3,9	7	1,4

Table 2.5. Amount of visitors and visits. (Source: Research voor Beleid, 2011, p. 54)

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[4] The WWIK was a regulation which provided a basic income to artists. From January 2012, artists can not apply for this special regulation anymore, which means they rely on the basic income regulations from the Dutch government which includes more strict requirements.

2.2.5 Art Fairs

Art fairs play an important role in the art market since few people have the time or intention to visit many galleries spread over one city, country or even a continent. Art fairs provide an efficient environment where galleries can meet new clients and potential art buyers or collectors can meet new galleries and discover new works of art. There are doubts about the future of the gallery but few people doubt the future success of the art fair (Grassi, 2005), though some despise art fairs for their commercial and hasty character (Behrman, 2007). Art fairs do not promote themselves as commercial venues though their aim is to sell work to collectors (Behrman, 2007). Fairs are a part of the process of trying to sell an art work and because of this, the attendance and extent of attendance could have an influence on the price and sales of art. The financial crisis was also noticeable in the art world but dealers mainly changed their strategies a bit instead of not attending an art fair. They would choose smaller booths, smaller, more portable art works, known artists or works with comfortable subjects. (Kino, 2009)

Art fairs have gained importance over the last years and are now an important part of the selling strategies of galleries (Kino, 2009). This also becomes clear when looking at some figures. The average amount of visitors a week was 50 persons per gallery in 2010 (Van der Valk, 2010). This shows how important an art fair can be for the visibility. However, visitors of a gallery probably have more potential (focus) than all those people at an art fair.

Art fairs can play a role in an art market because they can divide or group galleries by their selection criteria, as arrangements like the *Kunstkoopregeling* also do. The KunstRAI in the Netherlands is a good example. It has been organised since 1985 and their way of selection made the social artistic networks clear or created them, also because the KunstRAI made other art fairs appear as response. The new art fair (Art Amsterdam) appeared because they did not agree with the selection criteria or vision of the KunstRAI. Galleries have to consider whether they want to be associated with a certain art fair, their reputation and the other attending galleries and what the influence will be on their own reputation by choosing to attend or not. So, the system of art fairs emphasizes the legitimization process of galleries. As a selection committee only accepts certain galleries, it creates a more or less formalized process for legitimization for galleries. (Jyrama & Ayvary, p. 10)

The more exposure an artist gets, the bigger chance other artists will consider him important. Belonging to a group of artists can also reduce uncertainty about the quality. More exposure means more chances of people recognizing an artist and, eventually, buying. (Moureau, 2000) This also explains why art fairs can be important, because it relates to the selling strategy of visibility. A gallery selects certain art works and artists to be on display in the booth and they can also influence each other. The supposed quality of some well known names can influence the ideas

about a lesser known artist, because the gallery apparently considers all the works as important enough to be on display. This also applies to exhibitions, whether or not initiated by artists themselves. It is important with who you are associated in the art world, be it other artists, a style, a gallery, or a museum. As Greffe (2002) points out, the label can be very important. If an artist belongs to a certain list, for example 'upcoming artists' or 'awardwinning artists', this can influence the price. It is a way of distinguishing an art work or artist from others and fairs contribute to this mechanism.

Art fairs in The Netherlands

In The Netherlands too, the amount of art fairs is increasing and so is the presence of Dutch galleries at art fairs. Figures show it has increased during the second part of the '00s. In 2005, 34% of the galleries took part in an art fair against 45% in 2009. Fairs most attended by NGA members are Art Amsterdam, Art Rotterdam and Open Art Fair Utrecht. The most important reasons for attending a fair are, according to galleries, to meet new clients, increase profit or improve their pr and marketing. (Van der Valk, 2010)

Art fair	Year	City
Art Amsterdam (changed into KunstRAI after 2011)	2006 - 2011	Amsterdam
PAN	1986 - now	Amsterdam
Affordable Art Fair Amsterdam	2007- now	Amsterdam
Realisme	2003 - now	Amsterdam
KunstRAI (changed into Art Amsterdam after 2005)	1994 - 2003, 2012 - now	Amsterdam
Art (& Antique) Fair Den Bosch	1967- now	Den Bosch
ARTI	2006- now	Den Haag
TEFAF	1988 - now	Maastricht
Art Rotterdam	2000 - now	Rotterdam
Art Antique Utrecht	2010 - now	Utrecht
Open Art Fair	2008- now	Utrecht

Table 2.6. Overview o important Dutch art fairs. The table shows that one art fair started in the 60s, two started in the 80s, one in the 90s and as many of six started in the 00s. There are a lot of galleries in Amsterdam and the same pattern shows with art fairs.

Being present at an art fair can be important but also expensive. For some galleries it is financially not possible to rent a booth at a fair. Van der Valk (2010) presented the average turnover of Dutch galleries, which was 216.000 euros in 2009[5]. Most of the galleries (39%) had a turnover of less than 75.000 euros, which confirms the ideas about the financial difficulties Dutch galleries have and the common practice of combining a gallery with another job.

Turnover in Euros	NGA members	Non-NGA members	Total over 2009 (%)
< 75.000	20	47	39
75.000 - 150.000	21	21	21
150.000 - 250.000	13	18	16
250.000 - 500.000	23	5	11
500.000 - 1.000.000	17	6	9
> 1.000.000	6	3	4
Total	100	100	100

Table 2.7. Turnover over 2009. (Source: EIM, 2010 in Van der Valk, 2010)

The attendance at art fairs made up for 16% of the total turnover of Dutch galleries in 2010 (Van der Valk, 2010) Using this percentage on the turnover, it would mean that on average, a Dutch gallery could spend 34.560 euros[6] on art fair attendance, though most galleries could only spend a maximum of 12.000 euros (0.16*75.000) on it to break even. This limits art fair possibilities to a great extent.

2.3   Demand on the Primary Market

After having discussed the supply side of the market, consisting of the artists and galleries, the demand side will be handled below. On the demand sides, there are also several factors that can influence the price. Central to demand are the potential buyers and the reasons for buying art. Art can be bought for several reasons. A buyer can appreciate the work of art but other reasons also occur, like interior decoration, as a status symbol (Savage, 1969) or as an investment. Also aspects people would not directly relate to art can play a role, like the amount of money a buyer is prepared

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[5] The modus was lower: 112.500 euros, which probably gives a more realistic idea since this figure is less influenced by outliers.

6 Calculated by 0,16*216000. Of course this is a very rough calculation which is only used to give an indication of the financial possibilities of Dutch galleries. This percentage also does not take into account sales which result from contacts met/started at an art fair and is calculated on basis of turnover, not profit.

to spend, tax benefits and inflation (in case of investment) (Greffe, 2002). In short, motives for buying an art work can differ from personal, aesthetic to financial motivations. (Gérard-Varet, 1995)

Only a small part of the buyers is a well-known collector, most of the buyers buy art incidentally and the 'group' of buyers consists of very heterogeneous individuals who do not always have a lot of cultural capital. (Moureau, 2000) So, besides the elite group, consisting of people heavily involved and spending a lot of time and money on art and developments in the art world, a much bigger group is interested but less involved. (Caves, 2000) On the primary market incidental buyers with a limited budget can have a influence, especially if many people buy an art work of an upcoming artist, this can influence the exposure and success (Moureau, 2000). This group of incidental buyers can be important for the sales in the database of this research.

2.3.1 Influencers of demand

Economists assume that preferences will remain stable while making analyses. Art is often assumed to be related to taste. Alfred Marshall explains that concerning art, tastes do not change, but people acquire capital or an aptitude, which makes them appreciate another level or kind of art. This is called the capital-aptitude. (Greffe, 2002) It could explain the buying behaviour of different kinds of buyers but not completely. Following this reasoning, every collector should have started with the same kind of art and ends with the same kind of art. Besides levels or layers in art which people maybe can appreciate only after a while, there is also preference for a certain style. This doesn't have to be an easy or difficult style because levels can exist within a style too. Changes in behaviour or buyer preferences can be influenced by opportunities that come by. Constraints like income, relative price, time, distance or rules are important. (Frey & Pommerehne, 1989) As is the case with other creative goods, the consumption of art depends on tastes. These tastes can be influenced in different ways.

According to Moureau (2000), two kinds of signals exist on which buyers base their opinion and decisions. The first category consists of signals sent by the institutions of legitimation and are about (objective) artistic information. The second category is send by the media and price records and are blurred by rumours. (Moureau, 2000) Below, these signals will be outlined. First, it will be about cultural capital and critics, and second, about the media. Critics can be part of both signals. In the end, social context will be highlighted as this plays a role in all the signals.

Cultural capital

Cultural capital is most important in determining the aesthetic value of an art work (Abbing, 2002). The ability of potential consumers to 'interpret or understand the creative value or quality of the goods' (p. 44) is important for the demand for artistic goods (Greffe, 2002). To be able to evaluate an

oeuvre, it is necessary to know how to interpret it and know about the conditions in which it is created. (Moureau, 2000) To appreciate a contemporary art work it is necessary to have a good knowledge of the history of the well known contemporary figures and styles. Information to help interpret the good can be found by looking at the 'current market price, the label, the certification by critics and the existence of prior conventions' (Greffe, 2002, p. 44). These sources are far from objective and could even be used in a manipulative way. (Greffe, 2002), as will become clear below.

Critics

Because of the enormous supply and amount of time and money it takes to invest in knowledge about art, advise by certifiers plays a role. (Caves, 2000) So, critics play a major role in the visual arts, although they can have ambiguous interests, for example being a collector themselves (Greffe, 2002). Critics seem to be objective, experienced and independent but this is not always the case. Critics are not always the right way of gathering information since they may have a completely other taste, are committed to a certain gallery or artist or it is difficult or expensive to access the critic. (Caves, 2000)

Media

Because critics do have their own interests too and can be more difficult to access, people start searching somewhere else for their information. An accessible way to information is the media. (Moureau, 2000) Art that generates a lot of media attention attracts new buyers who normally do not buy art (often) and are less informed than traditional collectors. This attention can be stimulated by an outspoken personality or the death of an artist. Media can create a dynamic and speculation which could make it possible for art works to appear earlier on the secondary market than normally would be the case. (Moureau, 2000) This does not happen very often on the primary market, but media attention for a certain upcoming artist can influence the demand and hence, the price. Robertson (2005) makes the remark that 'it is a curious feature of the art market, that levels of demand do not impact on price as much as rarity and market approval' (p. 18). According to him, the influence of the media should be put in perspective.

Social context

The overarching influencer of demand could be called the social context. As with auctions (Smith, 1989), social factors play a role in the primary market. It can be important who is buying or for what reason, for example to complement a collection. Potential buyers not only decide on their opinion about an artwork based on their own taste or emotions. As discussed above, this taste is also

influenced by experience, by articles and opinions of other people. These other people are not only the critics but also collectors or famous people. The decisions of other buyers influences people in making a decision about buying art. Not only the fact that other people bought a work has an influence, also people recommending an artist helps in creating preferences.

As became clear in the part above, all actors influence each other and it is often difficult to see who has influenced who or who made the first acquisition. Even though a lot of decisions are taken simultaneously and the quality is not always fixed, as the model of Orléan says, it is possible that a dominant opinion rises in a group. (Moureau, 2000) It is about the dynamic of the whole group. General price movements in the art market categories are determined by externalities, but sectoral or art type rises and falls are to a great extent manipulated by a consensus of opinion with art markets. Commercial and public institutions determine shifts in the value of art works. (Robertson, 2005) This makes the art world very unpredictable (Moureau, 2000). The amount of mimetism depends on the trust people have in the flows of information and whether they have more faith in opinions from institutions or the commercial market. (Moureau, 2000) In the end, it is all about reducing uncertainty.

Demand on the Dutch market

Above, general influences on demand are discussed. Since this thesis focuses on the Dutch market, it is relevant to know more about the demand in the Netherlands. This research only covers a part of the market since it focuses on sales supported by the *Kunstkoopregeling*, but it is important to know more about the turnover of the complete market. Research commissioned by the Ministery of Education, Culture and Science (OCW, 2011) shows that the total demand for fine art is 329 million euro. This can be divided in brokering (58 million, for example sale from the artist to the gallery) and sale to end users (271 million, individuals, companies and governmental institutions), where individuals and companies are by far the most important buyers. For comparison: the turnover of the *Kunstkoopregeling* in 2003-2007 was 11,4 million euros. (IJdens & Mariën, 2009) From that amount artists received 7,8 million euros. This shows that the *Kunstkoopregeling* only makes up for a small part of the total demand, which makes sense since it aims at first time buyers with a limited budget.

It is remarkable that direct sales by artists are higher than the sales by galleries. Artists sold for 47% of the 271 million in comparison to 43% by galleries[7]. Artists receive more turnover from their own sales than from what they sell to intermediaries. Galleries are an important distribution channel (Research voor beleid, 2011) though they have to take direct sales from artists to buyers

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[7] The remaining 10% is sold by organizations that lend art.

into serious consideration. In other countries artists are sometimes more dependent on galleries, while in the Netherlands galleries are one source of income, besides own sales and subsidies.

It is assumed that there are 50.000 people who lent art in the Netherlands but how many people buy art is unknown. The only known figures about art buyers are from the *Kunstkoopregeling*. However, there has been done some research on art buyers, to be divided in collector (40%) and non-collector (60%). Art is often bought via a gallery, followed by directly via the artist and at an art fair. It is remarkable that art fairs are seen as a distinct category since it could also be shared under galleries, but apparently art fairs are important enough to be distinguished as a sole category. The same research showed that paintings are the most popular category followed by sculptures, drawings and photographs. It will be interesting to compare these data, collected by Motivaction (2010) with the dataset from the *Kunstkoopregeling*. Since those data represent the lower part of the market, focusing on the price, it could be expected that works in edition, like prints and photographs are the best sold works but these result doubt that simple assumption.

Amount of time	Other individual buyers	Collectors	Total
1-2 times	51%	19%	38%
3-5 times	33%	37%	35%
6 or more times	16%	44%	27%
Total	100%	100%	100%

Table 2.8. Frequence of buying an artwork during 2007 - 2010. (Source: Motivaction, 2010 in Research voor Beleid, 2011, p. 51)

Gallery	82%
Directly via the artist/atelier	55%
Art fair	45%
Auction	20%
Art handel	17%
Art or antique market	11%

Table 2.9. Places of buying an art work during the past three years (2010). (Source: Motivaction, 2010 in Research voor Beleid, 2011, p. 52)

Many grants focus on the supply side of the art market, but the importance of arrangements on the demand side like the *Kunstkoopregeling* is apparent from the figures. They show that individuals are being responsible for most of the sales of a gallery and that incidental buyers play an important role besides collectors. Especially for the group of incidental buyers, the *Kunstkoopregeling* can be a

stimulus. In 2010, 10% of the turnover of Dutch galleries was stimulated because of the *Kunstkoopregeling.* (Van der Valk, 2010).

2.4 Price setting by galleries

By now, the important players on the art market are identified and the context for the research is provided. The focus is on the price and besides factors influencing the price, the price setting itself is a specific process in the art world. This will be the topic of the following paragraphs.

One of the central themes in economics is to determine the price of a good. (Greffe, 2002) Setting the right price of a product is important, both for consumers and producers. There are different ideas on how the right price can be chosen and which determinants should be included. (Diamantopoulos & Mathews, 1995). The different theories about pricing differ according to the goal of the theory. These goals can be, for example, making profit or sales growth maximization. (Diamantopoulos & Mathews, 1995). Three determinants have to be considered when setting a price and the pricing method must be in line with the goals. At first, the production costs are important. However, the focus shouldn't be on costs alone; demand and competition also have to be taken into account. (Diamantopoulos & Mathews, 1995). This already gives three important starting points for determining a price. In order to do that, there exist several pricing methods, like cost-based, competition-based or demand-based methods. Indounas (2006) developed another method, which takes all three into account and is based on reflecting the value a product has, according to the value customers attach to the product. In this fourth approach, called the contribution margin analysis approach, several prices are considered by predicting how customers will react on certain prices and a mathematical formulae is used. Indounas (2006) argues that 'managers need to understand the value that customers attach to their products' (p. 419). Apparently, value is not only an issue in the art world, but appears to be a challenge in other markets too.

Since this research is about the primary market, theories about pricing new products could be important because art works of artists who appear for the first time are often hard to compare and can be seen as a heterogenous product (in case of the art work). This makes it more complicated because 'the most difficult new product pricing problem occurs when the product is unique' (Monroe & Della Bitta, 1978, p. 414 in: Diamantopoulos & Mathews, 1995, p. 99). Besides the uniqueness, two other factors make it difficult to establish a price on the primary market, because in the beginning of a career there is not much known yet about the demand and there is often no fixed economic pattern yet (Savage, 1969). The next part will be about how gallery owner deal with these difficulties and how they set a price despite these challenges.

2.4.1 Rules of thumb

Even for commodities, which are assumed to originate in objective determinants as production costs, price determination can be difficult, especially for new products (O'Neill, 2008), let alone unique art works. Although many galleries pretend to focus on quality instead of price, they have to set a price. As already mentioned, the price can influence ideas on quality. Therefore, setting the right price is crucial. Since new artist often haven't received any critic yet, the galleries have to establish a price without much referents. (Crane, 1987)

So instead of using strict calculations, entrepreneurs often have their rules of thumb (O'Neil, 2008), and so do gallery owners. Velthuis (2002) called them *pricing scripts* which differ for new or more established artists. The price for new artists is generally set low and compared to comparable artists. More established artists are priced based on past prices and the price increases when demand is high, reviews are good or simply every year. The price can increase because of increasing demand, but also if an artist has been with a gallery for a long time. It is common that the price increases when there is success, but often by no than more by 20%. (Moureau, 2000) The price never decreases, or the gallery gets rid of the artist. Other rules of thumb are standard prices related to certain sizes or mediums. (Velthuis, 2002)

Robertson (2005) names three common methods, implying objectivity, to determine the price but remarks that none captures all the value. So these methods could also be seen as rules of thumb. He names the double sale method, which compares past prices. This is hard for a new artist, but past prices of other artists at the same gallery could be compared. A second method is the average price method, where different artists are weighted in a sample. The third method uses an index with close substitutes of the work and is called the representative painting method, which seems less random but also includes more subjectivity.

2.4.2 Price setting in earlier times

As the rules of thumb show, the price of a painting can be decided on in different ways. Even since the 17th century certain guidelines are used. Pacheco (1649, in Greffe, 2002), for example, distinguished two types of nobility. Intrinsic nobility determined the basic price and divided painters in different levels of the use of themes, colors, proportion and contrast. This could be seen as the technique or handling of materials. The extrinsic nobility was about taste and could only be decided by the buyer, which in the end determined the final price. (Greffe , 2002) This could be seen as the aesthetic value. Apparently, the buyer had a lot of influence on the price, which is less these days, especially for incidental buyers. The distinctions however, relates to a distinction which emerged during a interview O'Neil (2008) conducted for her research. The interviewed gallery owner talked

about real and perceived value, real value being based on production costs and perceived value being based on reputation and matters in the art world.

As the idea of Pacheco illustrates, craftsmanship was very important. Since the 20th century, the idea behind an art work became more important. In the first part of the nineteenth century the price was determined according to an academic convention, taking into account type, subject and style of the painting. The convention was based on originality and had no order of other criteria. (Greffe, 2002) This is not very helpful, since it doesn't create an objective base for evaluation of quality. Quality remains hard to describe. Savage (1969) defines it as 'the degree of excellence in design, craftsmanship, and materials, in that order' (p. 37). All these parts were used in the criteria above, but apparently the importance can differ per period. When it comes to contemporary art, this could get problematic sometimes because a (recognizable) subject matter or craftsmanship can be absent.

To become part of the art history, it is not sufficient to paint something innovative. It is also important to get enough exposure, especially under a small circle of influent people. (Moureau, 2000) This brings us, again, to the social context which is so important in the art world.

2.4.3 Social context

Determining the price based on the design, craftsmanship or materials incorporated in the art work appears already to be difficult, but two other factors have to be taken into account, as Diamantopoulos and Mathews (1995) pointed out: demand and competition. For example, scarcity plays an important role in the art world. (Frey & Pommerehne, 1989) The production of a work of art requires resources as labour, material and originality, which are restricted. (Frey & Pommerehne, 1989) But probably more important is the environment where art is traded.

Several authors (Uzzi & Lancaster, 2004; Diamantopolous & Matthews, 1995 in O'Neill, 2008) stress the importance of the interaction between art world players for the price setting. It is likely that the pricing decisions of artists vary and that art pricing is influenced by organizational context, social relationships, and status concerns. Status had influence, since a price often signals a firm's market niche (Podolny, 2005). A good example of this is the common habit that a gallery owner will be very reluctant to decrease a price because of the signal it gives and the signal in general that expensive art will inhabit aesthetic quality (Moulin 1987, Velthuis 2002). Besides the market environment (Diamantopolous & Matthews, 1995 in O'Neill, 2008) it is argued that the price is the outcome of interaction between players in the art world. (Robertson,2005) This sounds logical but since it is often not traceable, people, especially outsiders, call it 'non-transparant', though it could also be seen as the common mechanism in the art world.

The question remains why this social interaction would make the art world different from other markets. Like Zelizer (1988, in O'Neil, 2005) says, markets are 'an interaction of economic, structural, and cultural factors'(p.95) and economic activity is connected to other social interactions and not apart from it. O'Neil (2008) states that, based on literature on pricing in general, it will be likely that the price of art is also influenced by context and social relationships. Moulin (1994) affirms this by stating that 'asymmetry of information and its eventual manipulation are at the centre of price setting' (p.11).

2.5   Conclusions about the art market

A lot of information about the art market has passed in this chapter. It became clear that the art market has an internal logic (Abbing, 2002) which can be difficult to get a grip on because of the interwoven artistic and market motives. Artists, art dealers and art lovers pretend to disapprove the connection between money and the arts but they are well aware of it. Even though they deny the economy, as Abbing (2002) puts it, art works are sold in a market. Several authors (Abbing, 2002) have given arguments on why the art market is different from other markets but when examined closely, the differences are not always that big.

The three common problems in a market are also apparent in the art market. First of all, it is hard to define the good traded, since art works are very heterogeneous goods who vary a lot. Second, the ruling manners are hard to get a grip on for a new comer but they are very important for the way of doing business. And lastly, the problem which is seen as the most problematic in the art world, the determination of the price. These are all challenges, but the art world solves them according to its own logic.

It doesn't make it easier that these three problems are interpreted slightly differently by the different parts of the art world. The focus in this thesis is on the lower to middle range of the primary market. This has an influence on the selling strategies used by the galleries. Taking a leadership role is often hard for them because of their limited period of existence and financial restraints. Therefore, they focus on differentiation and their visibility. This results in selling artists who work in a certain style or being present at art fairs or on the internet.

The conclusion of all the information above is that the art market should not be defined as a market which is different than all other markets, but as a status market. The art market is not a standard market where competition is mainly on price but a status market, which is dynamic and where the actors are important. This seems to explain a lot of the common practices in the art world. Moureau (2000) and Caves (2000) list some points which characterize the art world, like the role of experts, insecurity, group dynamics, speculation, infinite variety and the importance of status and reputation. These are characteristics of a status market. The problem with the art market is that

the uncertainty seems bigger than in other markets and the mechanisms to reduce this seem subjective and random. However, when looking at the features of a status market, it appears the art market is not that extraordinary.

2.6 Factors influencing the price

After having demystified the art market, the next part will be about the main problem of determining the price of an art work. Which rules of thumb galleries use to set prices is already explained but the next sector is about the factors influencing the price and former research on this specific topic. As identified, there are several factors influencing the demand and supply and it is already shortly mentioned that the price can be influenced by a lot of determinants too. Does a higher price also mean more exhibitions, being represented by a different gallery, or simply a longer tenure as an artist? In order to choose which determinants will be included in this research, the next part will be about results from earlier studies on the price of art. After having elaborated the options, the way of measuring the chosen determinants will be explained in the next methodology chapter.

As said earlier, research on the primary market is, in comparison to research on the secondary market, scarce. Studies on the price of art using data from the secondary market can provide useful insights, as the studies below will show. Though scholars are trying to find objective determinants for the price of art, not everybody is convinced about that idea and a lot of discussion is about which factors are decisive. Since all studies use different sets of data and focus on different determinants it is interesting to examine on which determinants they agree or not.

Before former research will be discussed arranged by determinant, the research by Velthuis (2002) will be outlined since his study forms the basis for this research and the results of this will be compared with the research done by Velthuis (2002). The research by Velthuis (2002) was the first extensive study on the Dutch primary market. It provided a base for new studies and new information. This study also has a very comprehensive database, which is a rare situation. To make the most out of this study, a comparison will be made in order to see trends or contradictions.

2.6.1 Research by Velthuis

In 2002 Velthuis wrote an article together with Rengers about the price of an art work, which was a part of the research he did on the art market. This is an exploratory but extensive study that has not been done before on the primary market in the Netherlands and provides a good base for further research. Velthuis (2002) got access to data concerning the period 1992-1998 from the *Mondrian Foundation*, which has a database with information about every art work sold with help of the *Kunstkoopregeling*. Considering the lower and upper limit of the loan, these data represent the

middle segment of the Dutch art market (Rengers & Velthuis, 2002). According to Velthuis (2002) the possible determinants of the price can be classified in three levels: the work of art, the artist and the gallery. Interesting results were that the variance in price is explained more by the factors on the artwork level than on the level of the artist and secondly, that the price level is not determined by gallery characteristics but by the characteristics of the represented artist (Rengers & Velthuis, 2002). This outcome challenges the importance of the gallery (Velthuis, 2005a).

A finding which contradicts previous qualitative (Moulin, 1987) and quantitative (Frey & Pommerehne, 1989) results is that Velthuis (2005a) did not find a monopoly effect, 'according to which artists who sell at fewer galleries receive higher prices because of reduced competition between galleries' (p. 106). Another remark made by Velthuis (2005a) which could be important for the comparison of the results of this research is that: 'The model does not satisfactorily answer the question of how the strong correlation between price on the one hand, and size and material on the other, is caused. Nevertheless, it casts doubt on the claim, which has frequently been made by other sociologists, that art is one of the few commodities where the relationship between production costs and price is practically nonexistent.' (p. 104) This is an important reason to include size and material as determinants.

The study by Velthuis (2002) is very important for this study because of the possibilities for comparison. There are of course many other studies on the price of art and the ones which could be useful for the understanding or comparison of this research will be discussed below, arranged by possible determinant. Not all of these studies are about the primary market, many of them use data from the secondary market but their findings can be related to this research. Some determinants are researched a lot and to give a better overview, the paragraphs are ordered per determinant.

2.6.2 Art work determinants: Medium, Size & Style

According to Greffe (2002), there is no doubt that the costs of production are a base for the price determination. Medium, style and materials do have an influence on new works. Though 'the price will ultimately depend on aesthetic satisfaction that is not necessarily linked to the conditions of production' (Greffe, 2002, p. 169) factors related to the production appear to be important. Two of the most objective determinants of an art work are medium and size. Almost every study on the price of art includes determinants like medium and size and though the strength of the relationship differs, it is apparent in every study. For example, Velthuis (2002) found a strong correlation but others, like Moureau (2000), were not very convinced though she did find that medium and technique had some influence on the price.

Medium and technique

Medium and technique are two different determinants but often taken together. Medium is about the support, the material which is the basis for the artwork. The technique refers to the application process of, for example, oil paint, on panel. Some mediums or techniques require more expensive materials, influencing the price. As other studies (Agnello & Pierce, 1996) have showed too, Valsan (2002) found that oil on canvas paintings fetch higher prices than other mediums. Nahm (2010) showed that oil paintings in general, without specifying the medium, fetch the highest price. Mixed media and acrylic paintings are on the second and third place. The support also has some influence, wood and canvas receive the highest prices, leaving paper and fabric behind (Nahm, 2010). Higgs and Worthington (2005) focused on the Australian secondary art market. Their results show, among others, that art works in the mediums oil and acrylic fetch higher prices. Frey and Pommerehne (1989) included sculptures in his research and showed that medium and materials matters since sculptures are more expensive than paintings and graphic works of art.

Some artists always use the same medium, others work in different mediums. Greffe (2002) showed that working in several mediums is one of the two main determining factors influencing the price. So, if an artist works in different mediums, this could affect the price of all the art works of the certain artist.

Size

Concerning size, Higgs and Worthington (2005) confirm other studies (Velthuis & Rengers, 2002; Agnello & Pierce, 1996; de la Barre, Docclo & Ginsburgh, 1994; Ursprung & Wiermann, 2008) that prices increase with size until the paintings become too large. They indicate 6,70 m2 as the price-maximizing size after which the price decreases by size. The price-maximizing size differs per study and range from 1.70 m2 for modern and contemporary European works to 5.89 and 6.53 m2 for old masters (resp. de la Barre et al., 1994; Agnello & Pierce, 1996). Ursprung and Wiermann (2008) found that the price of oil paintings increases until a size of about 2,5 x 4 metres is reached, whereas the optimal size for works on paper is 3,2 x 3,8 metres. If works are larger, the price will decrease.

Nahm (2010) did research to price determinants of art works sold on Korean auctions. In Korea, galleries used a *modified unit pricing system* where the price relied on the size of an art work (measured in ho's, the traditional measure of size in the Korean art market), resulting in the size as a very important factor in pricing. In general, size has a significant effect (Frey & Pommerehne, 1989) and the larger a painting, the higher the price (Valsan, 2002). As the focus in this research is on first time or incidental, individual buyers, the expectation is that the paintings often will have sizes

suitable for an average living room and will not hit the sizes mentioned above after which the price decreases.

Style

One of the determinants often included in studies (a.o. Greffe, 2002; Nahm, 2010) is the style to which an artwork (or artist) can be attributed. In contrast to medium and size, this determinant can be quite subjective, especially if the researcher has to qualify the art works or artists. Researchers handled the style determinant in different ways. Crane (1987) used exhibitions, schools and publications about styles to identify which artists belonged to a certain style. Greenfeld (1989) divided the painters in her research in seven styles, but in a simplified way, she could divide them in figurative and abstract styles (p. 44). To avoid many categories or –isms, especially since it is hard to distinguish different –isms in contemporary art, researchers often use the dichotomy of abstract and figurative. In abstract works, the subject is unrecognizable, 'without any specific reference to observed nature' (Greenfeld, 1989, p. 42), while in figurative works there is a reference to observations.

The style can have a significant effect on the price (Valsan, 2002), but also on other aspects, like the career of an artist. Greenfeld (1989) even argues that different styles can create different art worlds, with different mechanisms of factors affecting formation of taste and patterns of success. In an abstract style, artists have more freedom, while figurative painters have more professional requirements to meet. Research (Greenfeld, 1989) shows that the success differs between styles who have more professional requirements (figurative) than styles with no or less strict professional requirements (abstract). Success in figurative styles appears to be more difficult to attain, it takes longer before an artist becomes successful and depends more on the individual than abstract styles. In general, artists working in an abstract style, become successful in a shorter time and receive more support, for example they are exhibited more often in galleries. However, it can change per decade and kind of gallery (non-commercial or commercial) which kind of style is better represented in galleries. For example, conceptualists (abstract) were better represented in non-commercial galleries and surrealists (figurative) in commercial galleries (Greenfeld, 1989).

2.6.3   Artist determinants: Age, Gender and Nationality
Age

Many studies related to the topic of the price of art focus on one determinant, like age. Hodgson (2011), for example, studied the age-price profiles of Canadian painters at auctions. He identified three groups (born before 1880, between 1880 and 1920, and after 1920) and the idea behind this research was that the quality of an art work can depend on the age of the artist. His main result was

that artists who are born more recently are likely to peak earlier in their careers than those of earlier generations. In similar research age is related to art historical movements in the 19th and 20th century (Galenson & Weinberg (2000, 2001) in Hogdson, 2011) and, for example, to the difference in experimental and conceptual art (Hodgson, 2011, p. 288). Those studies also show that younger generations fetch higher prices earlier in their career. In this research, art historical movements will not be taken into account since the period range of data is 2000-2010. However, it would be interesting to see whether there is a correlation between the age of a painter and price.

Related to age, is the death of an artist. Especially in the secondary market, there are significant differences between alive and dead artists, a difference explained by the fixed supply of a dead artist (Nahm 2010; Crane, 1987). In the primary market it will happen less often that work is sold of a death artist, but it could increase the price because of the fixed supply and more certainty about his or her career.

Gender

In business, it is often emphasized that women would earn less than their male equals. Research in the art world (Frey & Pommerehne, 1989) also shows that female artists get a lower income than male artists, even when other characteristics like education are the same. It will be interesting to see whether there is a correlation between gender and price.

Nationality

In former research by Frey and Pommerehne (1989) the hypothesis that nationality had an influence on price was rejected, because the fact that an artist is an American citizen had no effect on the price. Valsan (2002) however saw differences in the valuation of art by Canadian and American painters as he compared auction data. Concerning the nationality, work by Americans was valued higher, which could have something to do with preferences of artists as well as buyers in America and Canada.

Greenfeld (1989) also looked at the country of origin of painters in her research focused on painters currently living in Israel. From her research it appeared that Easter European painters prefer a figurative style while among Western European painters the division was more or less equal. Painters from Israel and North America preferred an abstract style. This implies that nationality could have an indirect effect on the price because it could influence the style.

In general it is clear that the results concerning nationality as a determinant vary and could be influenced by the country the research focuses on. In recent research by Velthuis (2013), the

results show the presence of a strong home bias. Of the researched artists represented by Amsterdam dealers, 39.1% was born in The Netherlands.[8]

2.6.3 Gallery & artist determinants: Location and reputation

Location, both of artist and gallery, can be very important, especially for non-established artists and galleries. Among others, this is caused by the importance of social networks in the art world. In a study[9], While (2003, in Velthuis, 2013) emphasizes the 'density of social networks and associations between local artists, gallery spaces and collectors as a prerequisite for their success' (p. 300). Although the economy is becoming more global, face to face contact remains important, among others because trust and informal contact are essential in the art world. When galleries and artists are clustered, it is easier to interact. This interaction could influence the price since the opinion of others can influence the valuation of artists. (Velthuis, 2013) As is discussed earlier, it is often not clear who exactly influences who, but it is clear that all of a sudden, a certain preference can arise from a social network. Frey and Pommerehne (1989) found that reputations of artists and valuations of works of art are stable, so the first process of creating reputation could be very important. Among others, Moulin (1987) found that location influences the price. From the results, it will be interesting to see whether galleries and artists are clustered.

A lot is written about the importance of reputation and in the art world reputation is of vital importance. It is a possible determinant which is hard to include in research since it is subjective en difficult to transform into quantitative analysis. Some researchers tried to objectify reputation. For example, Beckert and Rössel (2004) whose research focuses on the reputation of artists and galleries in the primary market. For their research they used auction data, gallery data and surveys among expert (gallery owners, professors in art, curators and journalists) to measure the reputation of the artist and gallery. The design of their survey shows that in order to be able to say something about reputation, a lot of people were consulted and had to agree, otherwise data would not be reliable. Their main result was that reputation does play an important role in the determination of the price.

Research by Schönfeld and Reinstaller (2007) builds on the results from earlier studies (Beckert & Rössel, 2004; Rengers & Velthuis, 2002) stating that the reputation of an artist has more influence on the price than that of a gallery. This is a very interesting statement, especially related to the fair amount of direct sales in comparison to gallery sales in the Netherlands. It casts doubt on whether artists need galleries. However, the result that the reputation of an artist has more influence does not state that the reputation of a gallery has no influence at all and whether the first

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[8] Of the 1234 artists represented by Amsterdam dealers of whom the nationality was known, 39.1% was born in The Netherlands.(Velthuis, 2013)
[9] On the Young British Artists (YBA) in London in the 1990s.

influenced the latter or the other way round is difficult to tell. The same question pops up regularly in research on the secondary market and in particular the law of one price. There it is questioned whether the reputation of a location of an auction house influences the price of an art work or whether more expensive art works are brought to better known locations of auction houses.

Despite the difficulty of researching reputation, many researchers (Ursprung & Wiermann, 2008; Moulin, 1987; Moureau, 2000; Frey, 1989) found that reputation is a crucial determinant. Nahm (2010), even argues that, besides size, the most important factor in pricing is the name of an artist because it is related to reputation and quality.

2.6.4   Overview of the studies on determinants

All the studies below used a dataset with information on sales from auction houses or galleries but O'Neil (2008) studied the price of art in a different way. Instead of focusing on the price in the context of galleries (Velthuis, 2005), at auctions (Smith, 1989) or the influence of auctions on dealer prices (Candela & Scorcu, 2001) she explored the pricing of contemporary art from the perspective of artists. In taking this perspective she wants to connect the production and distribution side, which is a refreshing view.

She concluded that size, expenses (production and sale), status (reputation), market factors and the perception of estimated value by the artists are determinants for the price. Not all artists use all these factors but most of them do at least use three factors, which results in many different pricing strategies. Within the oeuvre of an artist they take into account the medium they used, where oil is more expensive than watercolor. It is interesting to see that artists take market factors into account when they price their work. Many take demand into account, although they are also reluctant to decrease prices when demand decreases, just like galleries. Another remarkable factor is their own valuation of work, works which they see as better (higher quality) are priced higher, even if they are as large as other works. Not all artists agree on doing this because they think that beginning artists will see their latest work as the best they ever made and think pricing based on own aesthetic valuation is a beginners mistake.

The study of O'Neil (2008) differs a lot in approach from the other studies. Although they all differ slightly in approach or method, it is important to compare their findings, so they can be debated in the discussion chapter.

Authors	Variables included in research	Results: important variables	Method	Country	Period analysed	Size database (new/existing)	Art market segment
Agnello and Pierce (1996)	Year of birth and dead Subject matter characteristics Price Date of sale Size (height, width) Technique (1 for oil, 0 for others) Age of the artist at the time of sale Auction house at which it was sold Characteristics of a painting (color, style) Market environment	Technique (Oil paintings) Size	Hedonic	America	1971-1992	15216 auction sales, 66 artists. Sampled from the annual art sales index (Hislop).	Auctions
Beckert and Rössel (2004)	Price Size Painting, print, photo, drawing Career length artist Reputation artist (by gallery) Whether artist has a chair Solo exhibitions Publicity Awards Gender Securities return	Reputation artist	Multilevel analysis. (Multivariate analysis/ hierarchical linear models)	German gallery data, international artists	1974-2000 (auction) 2000-2001 (gallery)	2 databases: auction (1047 sales, 21 artists) and gallery (30 artists, 446 sales) data. From Kunstkompass and artprice.com.	Auctions and gallery
Campos and Barbosa (2008)	Price Nationality Year of birth (dummy for 0 alive, 1 dead). Dimension Medium (oil, watercolour, gouache, other) Category (still-life, landscape, portrait, composition) Origin of the work	Reputation artist (more important than size or medium) Origin art work	Hedonic	Latin American paintings	1995-2002	1633 sales. Information from Sotheby's catalogues.	Auctions

	Reputation (whether it is included in an artbook, catalogue raisonné or exhibition)						
Chanel (1995)	Financial markets Width Height Squares Surface painting Place of sale Painter (dummy)	Financial markets influence art market with a lag of about one year	Hedonic Vector Auto Regressive (VAR) model	International	1963-1993	25300 sales, 82 artists. From Mayer Compendia.	Auctions (investment in modern or contemporary paintings)
Frey and Pommerehne (1989)	Supply Demand Nationality Number of available works Cost of an additional painting or print Size Style Advertising activities of gallery Effect of price expectations on future selling prices Income of buyers Rate of return on alternative investments Opinion of experts Reputation of the gallery Death of an artist Income of the buyer Opportunity costs	Medium Materials (sculptures > paintings and graphic works) Size Gender (on income)		International			
Greffe (2002)	Production costs (only in the short run) Medium Style Materials Participation in group show Time since first exhibition	Aesthetic satisfaction 1. # different mediums artist works in 2. Award Style (abstract, pop art, etc) Importance earlier					

		work artist (# exhibitions, awards) Latest sale (price level)					
Higgs and Worthington (2005)	*Artist/physical/sale chrc level.* Name Living status of the artist Size Medium (acrylic, charcoal, crayon, etching, gouache, mixed media, oil, pastel, pencil or watercolour), Auction house and year in which the painting was sold	Medium (oil and acrylic)	Hedonic	Australian art market	1973-2003	37605 sales, 60 painters. Information from Australian Art Auction Records.	Auctions
Hodgson (2011)	*Mainly painting specific characteristics.* Age Genre of picture Mentioned in art historical overviews, Identity artist, Size (height, width) Medium/support (Oil and acrylic paintings) Auction house Date of sale Date of execution painting Hammer prices	Age (younger, peek earlier) Creative environment (place of residence)	Hedonic regression	Canadian	1968-2010	200 artists Data from auction houses (Campbell, Sotheby's, Westbridge).	Auctions
Moulin (1987)	Labour hour Cost of material Location sale Prestige artist and gallery Extent of supply Interaction Characteristics of artists and galleries	Location sale Prestige artist and gallery Extent of supply Interaction	Qualitative study	French	-	-	All segments
Moureau (2000)	Medium Technique	1. Name artist Some influence:	Hedonic	International	1963-1992	9204 transactions. From Mayer	Auctions

		medium/size				Compendia.	
Nahm (2010)	*Artist/physical chrc/sale level.* *Chrc of the art work* Size Name artist Subject matter Style Condition of the work Support Death artists Medium Auction house Year of sale	Oil paintings (followed by mixed media and acrylic paintings), wood and canvas (support) Death artists Size Name artist – reputation	Hedonic	Korean	1998-2008	2500 sales, 41 artists. Data from 2 largest Korean auction houses.	Auctions
O'Neil (2008)	Size Expenses (production and sale) Status (reputation) Market factors (demand) Perception of estimated value by the artists Medium Demand Organizational context Social relationships Status concerns	Size Expenses (production and sale) Status (reputation) Market factors (demand) Perception of estimated value by the artists	Qualitative, interviews, QCA (comparative analysis)	USA	2004-2005	53 artists, 10 local galleries	Galleries, artists (primary)
Rengers and Velthuis (2002)	*Art work/artist./gallery level* Year of sale Material Size Sale characteristics Age Gender Place of residence Career characteristics Location gallery Age gallery Affiliation gallery	Art work level > artist level Characteristics artist > characteristics galler. Medium Size	Multilevel analysis, hedonic regression	The Netherlands	1992-1998	11.869 entries, 2.089 artists, 203 galleries. Mondrian Fund.	Primary art market

Schonfeld and Reinstaller (2007)	Reputation gallery Reputation artist	Reputation artist	Undercut proof equilibrium (UPE) model	See Beckert & Rosel.	Idem	Use of database Beckert & Rosel.	Idem
Ursprung and Wiermann (2008)	Artist's death (or alive) Reputation Age Size Medium Auction house & country of sale Supply artist 1 year Date of creation Year of sale Signature Genre/style	Death Reputation See p. 11> for exact influences of Medium (Oil on canvas highest price) Size Signature Country of sale & auction house Genre	Hedonic	Works sold in US, Western Europe or Japan	1980-2005	146575 sales by 262 artists (Hislop's Art sale index) (print, work on paper, oil painting)	Auctions
Valsan (2002)	Nationality artist Medium Size Art style Date of auctioning Price Auction house Place of auctioning.	Nationality Size (larger paintings) Medium (oil on canvas) Style (compositions higher price than other subject)	Hedonic	Canadian and American painters	1987-1996	887 paintings by 29 artists (Art Price Annual International)	Auctions
Seckin Aylin (2010)	Medium Support Signature Genre of the picture Technique Identity artist Height Width Auction House Date of sale Date of creation	Medium Support (Oil on canvas most expensive) Style (genre) Dated Height & width (though extreme size has a negative effect)	Hedonic	Canadian market	1968-2008	25003 sales by 43 auction houses and 275 painters (Data from auction houses. Database of Hodgson & Vorkink (2004), updated till 2008)	Auctions

Table 2.10. Overview studies. Variables, results, method, country, period, size database incl. source, art market segment.

Several authors (Agnello and Pierce, 1996; Campos & Barbosa, 2008; Crane, 1987; Frey & Pommerehne, 1989; Higgs & Worthington, 2005; Nahm, 2010; Ursprung & Wiermann, 2008) have researched whether the death of an artist influenced the price. Because the death of an artist limits the supply, this is often the case. In this research, it is not possible to include this variable. One of the requirements of the Kunstkoopregeling is that the art work is made by a living artist. Some artists died in the period 2000-2010 but this makes up for a very small amount, not substantial enough for statistical analysis.

Ursprung & Wiermann (2008) included the date of creation. According to them, this variable can contain information on genre and style. The period of their research is longer and therefore they see decade dummies as providing information on style and genre. (p. 9) They include the year of sale variable in order to control for macroeconomic changes.

Some of the studies above (Seckin, 2006; Worthington & Higgs, 2003) look at the interplay between financial markets or economic changes and the art market. Since this study covers a relatively short period, this is not done. The focus is on the art works and related factors as artist and gallery, but no information   is   researched   related   to   wider,   macro   economic   factors.

2.6.5 Conclusion determinants

The table shows the diversity in approaches, some studies are quite narrow, others take broader variables into account, like demand or rate of return on other investments. Some studies made a division in levels, others analyzed all the characteristics at once. All studies take art work characteristics into account, like medium and size and some add style or genre to it. Although this seems one of the objective determinants, not all studies agree on the influence. Rengers and Velthuis (2002) state that size and medium are important determinants while Moureau (2000) states that the medium and technique have some influence and Campos and Barbosa (2008) suggest that the reputation of the artist and origin of the art work are more important.

The nationality or age is taken into account by a couple of authors but an often named factor is reputation and it is seen as a very important factor. Even though this is a determinant which is difficult to research, authors agree it is an important one. Whether an artist is death (by the time of sale) is also incorporated quite a couple of times.

Including characteristics of galleries or auction houses does not seem to happen often, but some studies do. Because most of the studies are on the secondary market, they often included auction house characteristics, like location or name. Sometimes variables are included that relate indirectly to galleries, like being named in a catalogue, having joined an exhibition or when the market environment is taken into account.

Most studies did focus on the secondary market, which could have had implications for the used determinants. For example, none of the studies names art fair participation, not even when they did incorporate exhibition participation or group shows. This should be taken into account when deciding on the determinants included in this research with a focus on the primary market. The next chapter, methodology, will explain which determinants will be included in this research and how they will be operationalised.

3.   Methodology

The previous chapters explained the focus of this research, the main research question, how the art market works and which factors could influence the price of an art work. This chapter explains how the research will be conducted. First, the general design will be outlined. Second, the different ways of data collection will be addressed, including a critical review of the data. The final section will be about the ordering and statistical analysis of the data.

3.1   Design

The aim of this research is to examine to what extent certain factors influence the price of an art work. To answer this question, a quantitative research will be conducted. The choice for a quantitative research relies on several reasons. The first and main reason is the kind of research question. By doing statistical analysis, it is possible to discern the most important factors on a variable and also see how they relate to each other. Second, this research will make a comparison with another research, also conducted in a quantitative way. Comparison is easier by adopting the same approach. Third, the topic and context are not very suitable for qualitative research. As is shown by other researchers (a.o. Coslor, 2010; Velthuis, 2002; Greenfeld, 1989) people in the art world, especially gallerists, are often reluctant to talk about the price of art. To get reliable data based on interviews would be very hard. And finally, by doing quantitative research it is possible to analyse a big amount of data, instead of interviewing a couple of gallerists. Because the amount of research on the primary market is limited, a quantitative research has the potential to add relatively a lot of knowledge.

This research has a cross-sectional design, which means that data are measured at a single point in time (each art work is sold once so there are no repeated sales measure points), it concerns quantitative data and relations between variables are examined (Bryman, 2008). Though relations are examined, it has to be pointed out that in a cross-sectional design is not possible to be sure about causality. To be able to do that, longitudinal research is necessary, which is not feasible for a master thesis study.

This study will analyze secondary quantitative data, which has several advantages, especially in this case where it is difficult to obtain data about sold art works because it is a delicate topic for art dealers. The secondary data provides an extensive basis and the dataset is much larger than could ever be obtained by a master student herself. The reason that the Netherlands is the focus of this study is in the first place that the database of the Mondrian Fund only contains information about the Dutch art market. Other reasons are the possibility to compare the findings with those of

Velthuis (2002) and the option to visit galleries if that appeared to be necessary. The following section will explain more about the data.

3.2 Data

3.2.1 Data collection

The data collection happened in two phases. The first phase consisted of obtaining the secondary data. The secondary data comes from a database of the Mondrian Fund, which is in charge of the *Kunstkoopregeling*. In order to obtain this data, a confidentiality agreement had to be signed, saying that no galleries, artists or art works would be traceable in the thesis or related publications. This also shows how delicate the topic 'price of art' is in the art world.

The original dataset from the Mondrian Fund contains information per art work about the selling price, the loan, the selling gallery, the artist, the technique or materials used, title of the art work, the date of creation, the size and the date of administration. Not every entry has all this information, sometimes information is missing. This is already a lot of information which is normally not accessible. Based on literature, there were however other interesting characteristics to be taken into account. These characteristics, on artist and gallery level, required more research and were manually registered. This was the second phase. On the artist level, the variables age, birthyear, place of birth, place of residence and style (non-figurative or figurative) were looked up. On the gallery level, the variables location, age and art fair participation were considered important.

It took a lot of time to manually add this extra information since information about more than 1500 artists and 140 galleries had to be extracted from different sources. To restrict the amount of time involved some choices were made. The most important choice was to only include artists who have sold 5 art works or more. Other authors also used a minimum amount of entries (Hodgson, 2011; Valsan, 2002). One reason for this choice was because sometimes data about size or medium were missing. When information about other works of the artist was available, it was possible to calculate an average.

The information on artist and gallery level is based on sources like the online RKD[10] archive (www.rkd.nl), www.galeries.nl and additional searches in Google if the first two sources did not provide (enough) information. Since the RKD is an official institution, this source was seen as the most reliable source, in case the two sources provided different facts. However, sometimes the information on www.galeries.nl was more up to date. Websites of galleries often also provided a lot of information on themselves, but especially on the represented artists.

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[10] RKD stands for Rijksdienst Kunsthistorische Documentatie (National Institute of Art Historical Documentation).

The idea to add information on art fair participation took, proportionally, a lot of time. Galleries often don't have a clear overview of their own art fair participation and were not willing to look it up. As sources, to look up participant lists among others, the RKD archive (on- and offline) and the websites www.galeries.nl and www.artifacts.net were used. The offline RKD archive in The Hague was very helpful, since they have a lot of participant lists/brochures in their archive. The problem with these sources was the same as above, they are all incomplete, there is no archive or website which has all the information and some information is contradictory. However, combined they gave quite a complete overview of the required information.

3.2.2   Characteristics and critical review of the data

The data from the Mondrian Fund is a very important basis for this research. Therefore, the characteristics and drawbacks of this data will be discussed below. This research will study the last decade 2000-2010. By using recent data, a comparison can be made to results from the past decade. Velthuis (2002), who conducted the research which will be compared with the results from this research, used the same database for his research but he analyzed data acquired in the period 1992-1998. Since January 2011 the Mondrian Fund does not include the variables size and medium of the art work anymore which means that the years from 2011 on will not be analyzed since the literature shows that these two variables are important determinants. In the data regarding 2000-2010 these variables are included.

The dataset has a selection bias since only sales are included which are bought using the *Kunstkoopregeling* by the Mondrian Fund. The upper end of the market is excluded by this and the focus is on the lower and middle range of the sold art works in the Netherlands since there is a lower and upper limit for the loan[11]. However this dataset is the most extensive one at this moment and there is, as far as we know, no better substitute. Every study has a selection bias, this also counts for studies on the secondary market. They are biased by the selected sales, the demand at that moment en the decision to sell based on increased art prices. By using/selecting repeat-sales more bias is added because this could be paintings with expected high values, which could have triggered the owner to sell while paintings with a lower expected value were not offered on the market again. (Agnello & Pierce, 1996) In this research, no repeated sales are included, so this selection bias is not applicable. Concerning the selection bias of this dataset, it is important to keep in mind that the results could be only applied to the lower and middle range of the Dutch art market.

Besides the selection bias based on the data collected by the Mondrian Fund, the results could also be influenced by the data added by the researcher. Though the extra variables are

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[11] See Introduction, paragraph 1.5.

selected based on former studies, it is a selection which excludes variables which could have caused different results. The coding and categorization are also based on other studies and commonalities in the art world, but it is important to realise that the researcher's decision always influences the study in some way. Because of this, these decisions are explained in this thesis as clearly as possible.

3.3   Analysis

The focus of this research is the statistical analysis of the data about sold art works in order to rank the factors and the influence they have on the price. The basis for the analysis are the variables. Since the aim is to decompose the price, the price of an art work is the dependent variable. The independent variables are the variables which could have an influence on the establishment of the price and they are derived from earlier studies. Below the independent variables are listed.

Overview independent variables per level		
Art work	Artist	Gallery
Size (Log) Category Technique Medium	Age Birth year Gender Nationality Place of residence Number of works sold Number of representing galleries Style	Age Location Number of works sold Number of artists represented Dutch art fair participation International art fair participation

Table 3.1. Overview independent variables per level. (Source: own elaboration.)

The dataset will include different types of variables. The variables location and place of residence are nominal but could be seen as an ordinal variable if, for example, the locations will be ranked according to size or importance in the art world. Nationality, style, category, technique and medium are nominal variables. The variables price, age, size, amounts of works sold, number of representing galleries and number of artists represented are all ratio variables, which creates many opportunities for the data analysis. Gender is a dichotomous variable, as is art fair participation, which measures whether a gallery has participated in (inter)national art fairs or not. (Bryman, 2008)

As is done in other studies on the art market, the hedonic pricing method will be used. This function takes into account all the characteristics of a good. This kind of analysis decomposes a work of art into its characteristics like size and subject matter, and calculates the value for each of these components. (Arora & Vermeylen, 2013, p. 5) A limitation is that hedonic price functions do not explain whether a price-determining factor is related to the demand or supply side of the market (Velthuis, 2002). To account for the hierarchy in the data (art work – artist – gallery), a multilevel analysis is executed instead of a linear regression. This is done because one artist can sell more art

works whereby the art works are nested in the higher level of the artist. And the artist can be nested in the level of the gallery. It is possible that one artist is represented by more than one gallery, this has to be taken into account when running the tests. Before running a multilevel analysis, other techniques from the analysis of variance will be used to check whether the nesting structure in the dataset needs a multilevel analysis (Snijders & Bosker, 1999). It is assumed that the multilevel analysis is needed since the data will have a similar structure to those of Velthuis (2002) but it has to be clear that the multilevel analysis is the right one. To execute the analysis, the statistical program Matlab is used. Some time will be needed to get familiar with the data and to be able to use them in the right way especially because the analysis will be complex and assumes a hierarchy in the data. (Bryman, 2008). The program Matlab is chosen because in this research, multilevel analyses will be executed. Matlab is a powerful program to execute this kind of analysis and used worldwide in the academic environment.

3.3.1   Operationalisation of the variables

To be able to execute the statistical analysis, the variables have to be operationalised. The way of operationalisation could have an effect on the results and is therefore very important. Because the data are spread over a period of 10 years, different measures can be used with certain variables, like the average over 10 years or average per year. Below the operationalisation of the independent variables is explained per level. The independent variable, the price, is measured in euro's. For the analysis, the log will be used.

Variables on art work level

Size is given as height times width in centimeters, in the dataset of the Mondrian Fund. To be able to compare the sizes of art works and use them in an analysis, the measure square meters will be used, as is done by other researchers too (Crane, 1987; Velthuis, 2002). So height and width will be multiplied by each other. In the case of three dimensional objects, the cubic meters will be used. In all cases, the value will be transformed in log.

The category, technique and medium are divided in different categories. These categories are based on the amount of entries per category and commonalities in the art world. These categories are to be found in the codebook (see appendix I). For certain tests, different categories can be taken together, if the amount of entries per category appears to be too small.

Variables on artist level

The most independent variables are measured on artist level. Concerning age, the birth year of the artist will be used. Because of the amount of different birth years, they will be clustered per five years. For example; artists born in 1950-1955 form one category. By using the birth year, it does not

58

matter in which year the analysis is run or in which art works were sold. Concerning gender there are two options: male or female. Nationality has a couple of options. Most of the artists are Dutch, but also quite some artists are from other countries in Europe or America. Some artists will be coded according to their specific nationality (like Belgian, German, French or English) since they are neighbouring countries and are often occurring. The other nationalities will be coded according to their continent. The used continents are Europe, North America, South America, Asia, Oceania and Africa. Double nationalities are not taken into account. If someone has two nationalities, but one of them is Dutch, the person is counted as Dutch.

Place of residence follows a similar logic. Dutch places which will be discerned are Amsterdam, Amsterdam and a city abroad, Unknown, Arnhem, Den Haag, Rotterdam, Eindhoven, Den Bosch, Utrecht and Other. Besides these Dutch categories, places abroad will be grouped in Europe or the World. The number of art works sold and number of representing galleries will be calculated from the dataset and used as a figure.

Style will be operationalized in two categories: non-figurative or figurative. Style could be a very subjective variable. Some studies (Agnello and Pierce, 1996; Nahm, 2010; Ursprung & Wiermann, 2008; Seckin Aylin, 2010) looked at the subject of the painting or genre. The art works in this research are contemporary, so grouping them according to genre will often be difficult. A well known distinction in the art world is between figurative and non-figurative works. Other studies (a.o. Candela & Scorcu, 2001; Valsan, 2002) have shown that there could be a difference between those two categories in price and buyers. To limit the amount of categories, this distinction is chosen. To define the style of the artist, the same sources are used as mentioned in paragraph 2.1 (data collection). Sometimes the RKD mentions whether an artist has a figurative or non-figurative style. In other cases, works of art by the artist in the period 2000-2010 were examined and classified. Some artists work in both styles or it was not possible to trace whether the sold art works belonged to one of their specific periods. In that case, they are classified in the category Figurative/Non-figurative.

Variables on gallery level

The age of gallery levels will be indicated by their year of creation and calculated using the year 2010. Some galleries closed their doors during 2000-2010, this will be indicated. All the galleries are located in the Netherlands, so there will be fewer options than is the case with the artists. The best represented cities will be indicated and will follow the logic of the place of residence of artists. So the categories will be Amsterdam, Arnhem, Den Haag, Rotterdam, Eindhoven, Den Bosch, Utrecht, Unknown and Other. Number of works sold and number of artists represented can be calculated from the dataset and are used as a figure. Art fair participation is a dichotomous variable and it will

be indicated whether a gallery has joined national or international art fairs during the period 2000-2010. This will categorized by yes or no.

3.3.2 Multilevel analysis

As indicated before, the results will be based on multilevel analysis. Many studies on price determinants use least square regression analysis (Velthuis, 2002). This study, following the study by Velthuis (2002), will use multilevel analysis. There are a couple of reasons for multilevel analysis.

The most important one is that multilevel analysis recognizes the nesting of data. This means that entries are part of a group, which is nested in a higher group. The entries clustered in a group are expected to be similar in certain ways. So, 'if the clustering is ignored, it is likely that bias will be introduced in estimating the coefficients and their standard errors.' (Heck, 2013, p. 85) With multilevel analysis, 'changes in explained variance can be measured across different levels of analysis' (Velthuis, 2002, p. 47), which makes it more suitable than ordinary regressions. So, single level analyses are not suitable for this study because of the interest in influences on different levels (Heck, 2013).

4. Results

4.1 Descriptives database

Before discussing the results of the multilevel analysis, the database will first be explored. The initial database was received from the Mondrian Fund and contained information per art work about the selling price, the loan, the selling gallery, the artist, the technique or materials used, title of the art work, the date of creation, the size and the date of administration. Based on literature, new variables on the more than 1500 artists and about 200 galleries were added manually. On the artist level, the variables age, birth year, place of birth, place of residence and style (non-figurative or figurative) were added. On the gallery level, the variables location, age and art fair participation were retrieved. After all the information was added in the database, data normalisation and categorization actions were executed, like the calculation of average numbers to account for missing information and assigning categories based on the descriptions of art works.

To collect and order all the information, almost 30.000 entries, was an enormous process. Therefore, some choices were made due to time limitations and to increase the reliability of the database. First, only artists who sold more than 5 artworks during 2000 - 2010 by the *Kunstkoopregeling*, are included. Second, the year 2011 could not be included since the descriptions were lacking in the Mondrian Fund database and this would mean too much missing information on important variables. So, the focus is on the first decade of the twenty first century. See the Methodology chapter for more information on these decisions. The database covered in this chapter is the adjusted database which was used for the statistical analysis.

4.1.1 Characteristics of artworks sold on the Dutch market

The current database contains 29.330 entries. This means 29.330 art works have been sold between 2000 and 2010, using the *Kunstkoopregeling*. Paintings accounted for more than half of the sales, followed by sculptures with 21%. The total amount of sales during the 10 years sums up to € 117,9 million, or about 11,7 million a year. The average price paid for an art work is €4.064,19. As appears from the standard deviation, the price, as well as the size, can differ a lot.

Variable	Mean	Standard deviation	Material	%
Selling price (euro)	4064,19	3546,93	Painting	51%
			Sculpture	21%
Size (cm2)	6936,06	8248,32	Other	9%
			Unknown	6%
Price per cm2	0,59		Photo	6%
			Drawing	4%
N	29.330		Print	3%

Table 4.1. Variables from this dataset: average selling price, mean and price per cm2, division of materials.

4.1.2 Characteristics of artists selling on the Dutch market

The 29.330 artworks sold were made by 1453 artists. On average, an artist sold 20,19 art works over the 10 years, for a total price of €81.202,60. This indicates that on average, an artist has a turnover of €8.120,60 per year, resulting from the *Kunstkoopregeling*. The number of works sold has a high standard deviation, indicating that it can differ a lot per artist how many works he or she sold. Artists use on average about 2 galleries to sell their work and they work in about 2 mediums. The average artist is born in 1953 and is male. About three quarter is male, only 27% is female in this dataset. 31% has a foreign nationality and one fifth of the artists lives in Amsterdam, about the same amount lives abroad.

Variable	Mean	Standard deviation
Total sales per artist (euro)	81.202,60	13.4055,41
Sale characteristics		
Number of works sold	20,19	26,93
Number of different galleries	2,16	1,53
Number of different mediums	2,48	1,30
Demographics		
Birth year	1953	13,66
Female	27%	
Foreign	31%	
Place of residence		
Amsterdam	20%	
Rotterdam	13%	
Abroad	22%	
Other	45%	
N	1453	

Table 4.2. Descriptives of artist level variables.

4.1.3 Characteristics of galleries selling on the Dutch market

The 29.330 art works were sold by 197 galleries, leading to an average of about 149 artworks per gallery. As the standard deviations of both the total sales and the number of works sold shows, it differs enormously how much artworks a gallery did sell, ranging from 1 to 3.296 in 10 years. Only 4 galleries sold more than 1000 art works, in 10 years. It should also be taken into account that not every gallery existed during the whole period. From the 126 galleries of which years of start or closing are known, 12 galleries closed their doors between 2000 and 2010, both young and long established galleries. Six others closed their doors during the subsequent years 2011 and 2012. Galleries represent on average almost 16 artists and about a quarter is located in Amsterdam.

Variable	Mean	Standard deviation
Total sales per gallery (euro)	598.920,68	1.242.551,60
Sale characteristics		
Number of works sold	148,88	301,96
Number of artists	15,96	16,83
Location		
Amsterdam	27%	
Rotterdam	4%	
The Hague	6%	
Other	27%	
Age of gallery (year of start)	1986	12,54
N	197	

Table 4.3. Descriptives of gallery level variables.

4.2 Outcomes of the multilevel analysis

To account for the hierarchy in the data, a multilevel analysis is executed, as explained in the Methodology chapter. The results of this analysis can be found below, table # provides an overview of the effects of the variables per level. Model 1, the baseline model, has no explanatory power but is the point of reference. Per model, a subsequent level is included in the analysis. The models 2 until 4 are fixed-effects models. In every model, another level (art work, artist and gallery) is added, until all levels are included. In model 2, the variables on the level of the works of art are included, in model 3 the variables of artists are added and in model 4, all levels are represented, including the variables on the level of galleries. The determinants will be discussed per level and after these paragraphs, the overall influences and explanatory power of the models will be discussed. The results discussed are the ones listed under model 4.

	Model 1 Baseline			Model 2 artworks			Model 3 artworks and artists			Model 4 artworks, artists and galleries		
	Coefficient (B)	Standard deviation	*p*	Coefficient (B)	Standard deviation	*p*	Coefficient (B)	Standard deviation	*p*	Coefficient (B)	Standard deviation	*p*
Constant	6234	236	<0.01	5880	187	<0.01	1950,823	185,2525	<0.01	1820,655	185,302	<0.01
Characteristics of works of art (1)												
Year of sale												
2000				0	0		0	0		0	0	
2001				818	86	<0.01	811,3184	82,63745	<0.01	808,998	80,12947	<0.01
2002				-2339	84	<0.01	-2288,28	80,83352	<0.01	-2273,28	78,47894	<0.01
2003				-2981	85	<0.01	-2929,47	82,01382	<0.01	-3004,67	79,87349	<0.01
2004				-2933	85	<0.01	-2824,13	81,88812	<0.01	-2983,43	79,98753	<0.01
2005				-2765	86	<0.01	-2692,02	82,78547	<0.01	-2876,47	80,95088	<0.01
2006				-2554	89	<0.01	-2523,85	85,22331	<0.01	-2715,62	83,4729	<0.01
2007				-2458	88	<0.01	-2358,82	84,83372	<0.01	-2588,38	83,63409	<0.01
2008				-2258	91	<0.01	-2113,66	87,62294	<0.01	-2364,04	86,42704	<0.01
2009				-2401	96	<0.01	-2206,74	92,88431	<0.01	-2417,65	91,56838	<0.01

2010	-2137	101	<0.01	-1971,39	97,08106	<0.01	-2215,25	95,49803	<0.01
Category									
Painting	0	0		0	0		0	0	
Drawing	-1339	165	<0.01	-1289,76	160,2608	<0.01	-1556,24	155,7651	<0.01
Print	-1449	263	<0.01	-1303,57	252,7454	<0.01	-1496,91	245,0025	<0.01
Photography	-182	155		212,4332	152,5194		-297,531	150,4919	<0.05
Sculpture	-789	195	<0.01	-541,124	188,0317	<0.01	-736,809	182,6724	<0.01
Other	-526	238	<0.05	-134,535	229,4257		-234,898	222,519	
Unknown	-610	119	<0.01	-362,419	115,8879	<0.01	-511,321	112,7655	<0.01
Technique									
Paint	0	0		0	0		0	0	
Other paint	467	379		303,5188	367,7568		150,1024	357,115	
Pastel	-248	321		-27,1964	308,7957		-78,8236	299,757	
Ink	155	289		122,686	279,3345		168,2038	271,0812	
Pencil	-248	284		17,83348	278,335		35,91009	270,8818	
Charcoal	1161	386	<0.01	1365,968	373,3174	<0.01	1670,9	361,9744	<0.01
Other drawing	-1022	848		-1341,26	813,9671		-862,136	788,5282	
Litho	-585	360		-2405,08	348,6201	<0.01	-2653,51	338,4448	<0.01
Etching	-1279	342	<0.01	-1900,68	329,8187	<0.01	-1694,85	320,5428	<0.01
Woodcut	-1265	420	<0.01	-1933,06	406,3427	<0.01	-1677,14	394,5364	<0.01
Silkscreen	-972	406	<0.05	-1505,11	390,1954	<0.01	-1472,28	378,4536	<0.01
Oil, Other	-637	234	<0.01	-711,812	226,4112	<0.01	-576,424	220,5446	<0.01
Other Print	-846	589		-2073,46	566,4238	<0.01	-2451,68	548,6379	<0.01
Enduraprint	235	578		413,3442	555,568		700,4279	539,8822	
Gelatin Silver	-1216	740		-2726,77	720,4391	<0.01	-1823,07	698,5651	<0.01
Lambda	246	500		775,9443	483,7659		505,7052	469,0363	
C-print	389	282		465,1444	271,8901		677,9804	265,7643	<0.05
Cibachrome	857	306	<0.01	501,3077	297,4591		202,5903	291,142	
Other Photo	-1196	850		-1946,26	820,9803	<0.05	-2162,63	795,2052	<0.01
Collage	-851	437		-1411,43	421,2086	<0.01	-1493,63	408,2652	<0.01

Other	-707	197	<0.01	-740,725	191,4013	<0.01	-635,216	186,5062	<0.01
Grail technique	2551	476	<0.01	2814,84	465,3666	<0.01	1579,37	453,2535	<0.01
Acrylic	-658	76	<0.01	-530,083	74,29283	<0.01	-385,177	72,79062	<0.01
Relief	962	524		388,2371	505,3722		304,4772	490,3731	
Mix	48	91		-196,759	91,4591	<0.05	-242,579	90,09785	<0.01
Unknown	348	130	<0.01	138,2822	126,4524		44,2914	123,4457	
Acrylic, Other	-1079	285	<0.01	-797,773	273,9816	<0.01	-884,388	265,7904	<0.01
Tempera	140	223		260,294	218,8893		114,3881	212,8614	
Watercolor	-925	176	<0.01	-948,312	169,7007	<0.01	-875,038	166,1918	<0.01
Gouache	-1120	178	<0.01	-2306,1	175,4868	<0.01	-2307	172,1373	<0.01
Wax	-1890	525	<0.01	-1751,76	506,5928	<0.01	-2060,62	493,4087	<0.01
Wax, Other	-1607	300	<0.01	-1285,09	306,9453	<0.01	-1088,75	303,8439	<0.01
Medium									
Acrylate	0	0		0	0		0	0	
Glass	1745	435	<0.01	1100,439	420,3926	<0.01	-341,151	410,3967	
Glass, Other	-628	626		-472,069	600,4962		-780,187	581,9817	
Granite	1355	524	<0.01	1438,296	503,8181	<0.01	1558,934	488,4612	<0.01
Iron	-431	553		-629,748	530,4605		-743,418	514,0036	
Mixed	1408	468	<0.01	583,446	450,3754		491,3803	436,5109	
Other	33	440		-232,027	422,7928		-349,986	409,6808	
Panel	220	374		83,68909	360,1895		-261,417	349,4655	
Paper	212	382		-64,8667	367,5023		-467,992	356,1231	
Porcelain	-1156	526	<0.05	-1250,19	505,6316	<0.05	-1721,91	490,4135	<0.01
Steel	318	428		151,7409	412,1153		-274,368	399,3297	
Aluminium	729	442		396,3149	424,6123		21,67248	412,0664	
Stone	575	424		366,3855	407,0835		181,1974	394,5393	
Wood	767	515		756,3784	494,6585		161,9123	479,8723	
Wood, Other	17	535		-471,691	514,3315		-424,739	498,1236	
Metal (Other than Iron, Bronze, Aluminium)	-322	498		-653,163	477,9226		-691,406	462,9047	

Pottery	-1247	641		-1631,87	616,8151	<0.01	-1776,58	597,6286	<0.01
Unknown	353	366		72,69627	352,1416		-148,483	341,3323	
Plastic	809	584		418,4938	560,5309		636,1892	543,1102	
Bronze	460	395		467,9993	382,7033		597,4593	370,9917	
Bronze, Other	1027	547		1140,422	527,7886	<0.05	1184,564	511,3053	<0.05
Canvas	914	370	<0.05	733,703	356,1288	<0.05	291,8905	345,3733	
Cardboard	-342	522		-965,337	501,5545		-1181,81	485,8853	<0.05
Ceramic	-1293	440	<0.01	-1341,15	423,889	<0.01	-1427,9	410,973	<0.01
Ceramic, Other	-1741	605	<0.01	-1952,03	580,8504	<0.01	-1855,87	562,7984	<0.01
Dibond	-13	445		89,36209	429,8535		190,2497	417,003	
Characteristics of artists (2)									
Gender									
Female				0	0		0	0	
Male				361,4215	47,04354	<0.01	257,9923	45,82788	<0.01
Unknown				-1031,53	190,4513	<0.01	-1136,49	186,7903	<0.01
Place of residence									
Amsterdam				0	0		0	0	
World				291,6811	148,5826	<0.05	219,3023	144,6844	
Amsterdam, Europe				2287,887	146,8734	<0.01	2032,708	142,8568	<0.01
Amsterdam, Utrecht				-225,555	550,9875		428,9855	537,554	
Amsterdam, World				364,9367	236,9547		246,6653	230,8703	
Den Haag, Europe				-473,238	255,9274		-64,2216	249,5656	
Den Haag, World				1162,322	637,9376		1020,082	621,3544	
Eindhoven, Europe				432,0354	778,1772		512,9835	754,0363	
Netherlands (Other), Europe				-695,427	1390,9		-26,827	1352,835	
Netherlands (Other), World				502,8276	319,8056		773,0627	311,079	<0.05
Rotterdam, Europe				-558,168	419,6741		222,1731	409,2209	

Rotterdam	-256,227	108,6054	<0.05	-144,7	107,1511	
Utrecht, Europe	2164,066	644,2045	<0.01	2133,219	625,3813	<0.01
Unknown	76,28678	95,67442		181,634	94,85211	
Den Haag	-364,005	89,01833	<0.01	-131,468	89,96511	
Utrecht	-75,7073	192,7303		-153,875	188,6077	
Den Bosch	-1111,51	161,6599	<0.01	-523,596	162,1855	<0.01
Eindhoven	-237,343	144,7142		177,7547	142,452	
Arnhem	-1074,65	160,2924	<0.01	-996,782	156,114	<0.01
Netherlands (Other)	-269,862	56,40206	<0.01	13,83102	56,17901	
Europe (incl Russia)	1160,417	84,38958	<0.01	1329,78	83,03912	<0.01
Nationality						
Dutch	0	0		0	0	
Asian	1238,344	182,7529	<0.01	898,409	177,985	<0.01
Australian	-486,353	764,0219		-1087,31	741,4546	
African	1211,889	324,5546	<0.01	1278,496	315,5673	<0.01
Middle East	-1122,29	223,6829	<0.01	-1100	217,615	<0.01
Russian	1672,655	225,8227	<0.01	799,6855	223,5564	<0.01
Unknown	2339,995	293,4881	<0.01	2223,736	287,6897	<0.01
Belgian	61,7878	119,4105		18,49261	117,3879	
German	-216,751	108,6994	<0.05	-317,466	106,1066	<0.01
French	616,125	198,6838	<0.01	158,1457	193,6954	
English	-55,2601	128,2473		62,04689	125,616	
European East	586,1443	94,93669	<0.01	116,1432	93,79794	
American	1815,266	149,9338	<0.01	1718,139	145,8955	<0.01
South American	1515,557	330,9404	<0.01	1166,439	322,3729	<0.01
Age						
Age of artist	14,2158	1,466493	<0.01	14,07559	1,437564	<0.01
Sale characteristics of artist						

Nr of different galleries	76,62429	10,86079	<0.01	82,60249	10,9756	<0.01
Nr of works sold by artist (squared)	-0,0308	0,00277	<0.01	-0,02743	0,002781	<0.01
Nr of works sold by artist	7,540063	0,874085	<0.01	6,715005	0,916015	<0.01
Nr of medium by artist	138,0391	14,77697	<0.01	105,2498	14,7016	<0.01
Style						
Figurative	0	0		0	0	
Non-figurative	-176,739	51,36289	<0.01	-177,942	50,13902	<0.01
Both styles	652,6775	98,50581	<0.01	346,8007	96,38225	<0.01
Unknown	-312,755	270,5371		-31,44	265,67	
Characteristics galleries (3)						
Nr of sold works by gallery				1,713768	0,201102	<0.01
Age of gallery				20,8078	1,774929	<0.01
Nr of represented Artists				-22,1874	2,747813	<0.01
Location						
Amsterdam				0	0	
Rotterdam				-780,614	118,0496	<0.01
Utrecht				385,4609	141,9862	<0.01
Utrecht, Amsterdam				-653,267	154,1634	<0.01
Unknown				1099,121	94,49748	<0.01
Den Bosch				-721,653	109,0251	<0.01
Den Haag				428,3536	81,09834	<0.01
Den Haag, Amsterdam				-5242,82	424,3159	<0.01
Eindhoven				488,7508	122,6189	<0.01

Harlingen	-1275,21	148,7736	<0.01
Laren	-408,748	140,0583	<0.01
Oisterwijk	1276,629	175,2901	<0.01
Other	-521,878	65,07658	<0.01
Art fair participation			
Fair international	758,9435	53,37867	<0.01
Fair Dutch	477,4658	71,30075	<0.01

Table 4.4. Multilevel hedonic price functions for contemporary art in Dutch galleries. Results indicated as, are not significant.

4.2.1 Determinants of prices on the level of works of art

As table 4.4 shows, the reference category for the year of sale is 2000. All of the data points are significant, so they will all be taken into account. Only in 2001, prices were significantly higher. In the other years, the prices were significantly lower than in 2000. This is an interesting result, since the financial crisis only started in 2007/2008. The reference category for the category is paintings. The table shows that this is the most expensive category. All other categories have lower prices. One category, other, doesn't have significant results and won't be taken into account. From the other categories, it appears that photography is the second most expensive category, followed by sculptures and prints. A drawing is on average €1.556,24 cheaper than a painting. Besides categories, the analysis also included material and medium of art works. The reference categories for technique and medium are respectively paint and acrylate. It appears that, in ascending order, C-print, grail technique and charcoal are more expensive than paint. All other techniques are less expensive than paint, with litho being the least expensive because on average it will cost €2.653,51 less than an art work made with paint. Only a few results related to medium were significant. Taking only the significant results into account, the most expensive mediums are granite and bronze combined with other mediums, while the least expensive mediums are ceramic (also in combination with other mediums), pottery and porcelain.

Most expensive categories		
1. Paintings		
2. Photography	-297,531	150,4919
3. Unknown	-511,321	112,7655
4. Sculptures	-736,809	182,6724
5. Print	-1496,91	245,0025
6. Drawing	-1556,24	155,7651

Table 4.5. Most expensive categories. (Source: own elaboration.)

Technique		
Paint	0	0
Litho	-2653,51	338,4448
Other Print	-2451,68	548,6379
Gouache	-2307	172,1373
Other Photo	-2162,63	795,2052
Wax	-2060,62	493,4087
Gelatin Silver	-1823,07	698,5651
Etching	-1694,85	320,5428
Woodcut	-1677,14	394,5364
Collage	-1493,63	408,2652
Silkscreen	-1472,28	378,4536
Wax, Other	-1088,75	303,8439
Acrylic, Other	-884,388	265,7904
Watercolor	-875,038	166,1918
Other	-635,216	186,5062

Oil, Other	-576,424	220,5446
Acrylic	-385,177	72,79062
Mix	-242,579	90,09785
C-print	677,9804	265,7643
Grail technique	1579,37	453,2535
Charcoal	1670,9	361,9744

Table 4.6. Technique. (Source: own elaboration.)

Medium		
Acrylate	0	0
Ceramic, Other	-1855,87	562,7984
Pottery	-1776,58	597,6286
Porcelain	-1721,91	490,4135
Ceramic	-1427,9	410,973
Cardboard	-1181,81	485,8853
Bronze, Other	1184,564	511,3053
Granite	1558,934	488,4612

Table 4.7. Medium. (Source: own elaboration.)

Including variables of the art work level in the second model resulted in a large decrease of unexplained variance at the level of art works as well as a decrease at the level of artists, as tabel 4.12 shows. The unexplained variance at the level of galleries increases. This indicates that year of sale, category, technique and medium, do account for differences in price between art works. These variables also explain a part of the price differences between artists. However, they don't provide an explanation for price differences between galleries.

4.2.2 Determinants of prices on the level of artists

Being represented at more galleries than one has a positive effect on the price. In the research by Velthuis (2002) this variable was not significant, in this study it is significant. It is likely that when an artist is represented at several galleries, he or she is well known. Upcoming artists often have one gallery. It has also something to do with the supply, being represented by more galleries could mean producing more artworks. The more works an artist sells, the higher the price will be. This is the same conclusion as Velthuis (2002) found and which he related to the Veblen effect, which means that price is seen as a indication of quality. However, as the negative effect of the squared number of works sold indicates, selling too many works of art will even out the positive effect. When more than 245 works of art are sold, the positive effect evens out. Some demographic variables do have a significant influence on the price. Age has a positive influence, meaning that older artists sell for a higher price. This is also a conclusion found by Velthuis (2002). Age is often related with experience and reputation, although some artists may start in a later stadium of their life and this reasoning doesn't apply anymore. Every year of age can increase the price by about 14 euros. Besides age, gender also influences the price. Being a male increases the price with 258 euros. The results related to the variables place of residence and nationality were not all significant. Place of residence does

seem to have an influence concerning some cities. Living in a Dutch city like Arnhem or Den Bosch decreases the price with a couple of hundreds of euros. However, living both in the Netherlands and abroad does have a positive increase on the price. Most of the artists are Dutch, which is the reference category of the variable nationality. Having another nationality means an increase in the price in most cases, only artists from Germany and the Middle East see their price decreasing compared to Dutch artists.

Place of residence		
Amsterdam	0	0
Arnhem	-996,782	156,114
Den Bosch	-523,596	162,1855
Unknown	181,634	94,85211
Netherlands (Other), World	773,0627	311,079
Europe (incl Russia)	1329,78	83,03912
Amsterdam, Europe	2032,708	142,8568
Utrecht, Europe	2133,219	625,3813

Table 4.8. Place of residence. (Source: own elaboration.)

Characteristics artists		
Nationality		
Dutch	0	0
Middle East	-1100	217,615
German	-317,466	106,1066
Russian	799,6855	223,5564
Asian	898,409	177,985
South American	1166,439	322,3729
African	1278,496	315,5673
American	1718,139	145,8955
Unknown	2223,736	287,6897

Table 4.9. Characteristics artists. (Source: own elaboration.)

When taking the overall influence of artist related variables into account, it appears that they do add explanatory power to the model. However, the influence is more apparent at the level of galleries. At the level of works of art it decreases the variance among works of art, which makes sense because the characteristics of works art will be influenced and clustered by the artists.

4.2.3   Determinants of prices on the level of galleries

When a gallery sells more art works, the price of an art work increases with about 2 euros. However, the number of represented artists has a negative effect on the price of 22 euros. The age of a gallery does influence the price positively, every year a gallery exists, prices go up by €20,80. This could be proof of the quality or reputation of a gallery. It is difficult to stay in the business but once a gallery does, it pays off. As Velthuis (2002) stressed, Amsterdam is seen as an expensive location, though galleries located in Eindhoven, Utrecht, Den Haag and Oisterwijk seem to sell higher priced art. If a gallery participates in art fairs, it increases the price. The dataset shows that if a gallery joins an art

fair, it often attends more than one art fair. Dutch art fairs attended by galleries in this dataset range from the Affordable Art Fair and Art Amsterdam to PAN and TEFAF. International art fair participation has a bigger positive influence on the price than Dutch art fair participation. This could be explained by the higher costs of attending an art fair abroad (BRON) or because an art fair abroad might attract or only select galleries with an excellent reputation and, consequently, higher prices. Attended art fairs by galleries in this dataset are often within Europe, like Art Brussels or ARCO Madrid, but also further away, like Art Basel Miami Beach or The Armory Show in New York. Overall, when adding gallery characteristics to the model, it does increase the explanatory power, especially concerning the gallery level. However, when considering the total variance, variables on gallery level only make up for a small part of the price explanation.

Location		
Amsterdam	0	0
Den Haag, Amsterdam	-5242,82	424,3159
Harlingen	-1275,21	148,7736
Rotterdam	-780,614	118,0496
Den Bosch	-721,653	109,0251
Utrecht, Amsterdam	-653,267	154,1634
Other	-521,878	65,07658
Laren	-408,748	140,0583
Utrecht	385,4609	141,9862
Den Haag	428,3536	81,09834
Eindhoven	488,7508	122,6189
Unknown	1099,121	94,49748
Oisterwijk	1276,629	175,2901

Table 4.10. Location. (Source: own elaboration.)

Art fair participation		
Fair international	758,9435	53,37867
Fair Dutch	477,4658	71,30075

Table 4.11. Art fair participation. (Source: own elaboration.)

4.2.4 Explained variance

Table 4.12 shows the explanatory power of the 4 models. In the baseline model, the initial variance is shown at the three levels. Two-thirds (66%) of the total variance can be attributed to works of art, 24 per cent to artists and 10 percent to galleries. When the characteristics of works of art are included in the model (model 2), it explains 26% of the total variance. More specifically, the variance among works of art decreases by 38%, the variance among artists drops by 8% and the variance among galleries increases by 10%. This means that, by controlling for the art work characteristics, the differences between artists are smaller and the differences between galleries are bigger than without controlling for art work characteristics.

In the third model, characteristics of artists are included. The overall unexplained variance drops with 6%, which can be explained by the reduced variance among galleries. The variance among artists changes with 10% and the variance at the level of galleries even drops with 45%. When gallery characteristics are included too in model 4, the explanatory power on the gallery level improves with 26%. It seems that art work characteristics are a strong predictor of price differences among art works and artists. Artists characteristics do have some influence on the differences between galleries, but gallery characteristics appear to be a very strong predictor of price differences among galleries.

In model 4, 64% of the remaining variance is at the level of works of art, 30% is at the level of the artist and a small percentage of 6% occurs on the gallery level. In general, the data account for 37% of the variance in this dataset. Looking at the different levels and the explained variance, the model performs best on the gallery level while the variance on the artist level seems most difficult to explain, though a percentage of 30 is accounted for.

	Baseline model (%)	Change model 2	Change model 3	Change model 4	Model 4 (%)
Total variance	14191403,14 (100%)	-26%	-32%	-37%	8988460 (100%)
e0ijk (works of art)	9344098,911 (66%)	-38%	-37%	-38%	5762668 (64%)
u0jk (artists)	2433354,328 (24%))	-8%	-18%	-23%	2685392 (30%)
v0k (galleries)	1377080 (10%)	10%	-35%	-61%	540399,6 (6%)

Table 4.12. Changes in (un)explained variance across the models. All changes in variance are relative to the baseline model. (Source: own elaboration.)

5.   Conclusion

In the theoretical framework, the art market was explored and the theory led to several determinants which were included in the huge dataset analysed in this study. The results from the data collection and statistical analysis were described in the previous chapter. In this chapter, the information mentioned before will be combined to answer the research questions. After these conclusions, including the comparison with the results by Velthuis (2002), limitations of this study and further research will be discussed.

5.1   Which variables belong to, respectively, the level of the art work, the artist and the gallery?

As explained in the theoretical framework, many variables have been discerned during the research on the art market in the last decades. Because of the possibility to compare this research with the research by Velthuis (2002), many of his variables were used. However, also new variables were added, including separate categories for technique and medium, style of the artist and art fair participation. The only variable not included in the final analysis was size, due to statistical reasons.

Overview independent variables per level		
Art work	Artist	Gallery
Size (Log)	Age	Age
Category	Birth year	Location
Technique	Gender	Number of works sold
Medium	Nationality	Number of artists represented
	Place of residence	Dutch art fair participation
	Number of works sold	International art fair participation
	Number of representing galleries	
	Style	

Table 5.1. Overview independent variables per level. (Source: own elaboration.)

From the results it became clear that it is very important to which level a variable is ascribed, because it can influence the explained variance per level to a great extent. This can influence the explanatory power of a model to a great extent.

5.2   Which variables explain the price most on each level?

Because the variables were not tested on macro level, it is difficult to define which variable explain the price most. However, the level of significance and degree of influence on the price give an indication of importance. On art work level, technique and medium showed a lot of different influences on the price, however many results were not significant. Category is the most important variable, but also the year in which an art work is sold can have a significant influence on the price level.

On artist level, important variables are age and gender. Gender could increase the price for

about 258 euros, if you are a male artist, and age also has a significant influence of about 14 euros per year. Place of residence and nationality seem to be able to make a difference but because of many not significant results, they don't explain the price most, though living in Utrecht and somewhere in Europe could, for example, increase the price of an art work with 2133 euros. From the sales characteristics, number of different galleries, number of mediums and style do have some effect but the effects are less important than age or gender.

The location of a gallery and the art fair participation explains the price most on gallery level. The age of a gallery is also important, especially when it is an old gallery, then the years will add up to a bigger impact.

5.3   Which level has the most influence on the price?

The variables of all three levels together explain a total variance of 37%. The reason why it is interesting to know which level has the most influence, is because it could indicate what people value when they buy art or which level can have the most influence when trying to influence demand. If the art work level is most important, it could indicate that people buy an art work because they appreciate the subject matter or technique. An important artist level could indicate that people value the reputation or style of a certain artists. And finally, a big influence on gallery level could tell that the reputation of a gallery or the information provided by the gallery owners to potential buyers could influence sales a lot.

The results show that of the total variance explained, 64% is accounted for by the art work level. So, two third of the explained variance is accounted for by artwork characteristics. In a market where reputation and trends can be important, it is interesting to see that the art work itself, in other words its category, medium and technique, appears to be the most important factor in the determination of the price. On the other side, it provides a solid basis since some categories use more expensive materials than others, which could provides a clear relation between price and work of art. One third of the total variance explained is attributable to the artist. Only 6% is explained by the gallery level. Though gallery characteristics explain a lot of the variance among galleries, overall they do explain a small part of the price. These results indicate that the good which has to be sold is very important for the price, followed by the creator and in the third place, the seller or intermediary.

5.4   Which similarities and differences can be found (on determinants of the price) when comparing the periods 1992-1998 and 2000-2010?

Before comparing the findings on the determinants of the price, it is important to compare the two datasets. First of all, the period covered by Velthuis is 6 years, while the period covered by this

dataset is 10 years. Other clear differences are the amount of entries included and the total amount of sales, while the amount of artists decreased. The amount of galleries involved stayed at the same level. It is remarkable that the amount of sold works of art is much higher, while the amount of galleries stayed about the same and the amount of artists decreased a lot. This indicates that less artists are represented by galleries joining the *Kunstkoopregeling*, while per artist, more works were sold. One of the reasons could be that galleries are focusing more on commercially attractive artists. The increase in the amount of works and sales is very interesting. The *Kunstkoopregeling* is intended to make buying art more accessible and it seems to reach its goal. It is in line with the increasing amount of art fairs, especially fairs focused on the lower segment like the Affordable Art Fair.

	Velthuis (2002)	This dataset
N (works of art)	11.869	29.330
Period	1992-1998	2000-2010
Total amount of sales	34 million (almost 5 million annually)	117,9 million[12], (11,7 million annually)
Artists	2089	1453
Galleries	203	197

Table 5.2. Comparing descriptives. (Source: own elaboration.)

However, the mean price is higher in the current dataset, though it still fluctuates a lot as the standard deviation shows. Since the average size decreased, this leads to a higher average price per cm2. The categories are not identical to the categories of Velthuis (2002). Watercolor is included in the painting category and photo is added as category because of the amount of sold photographs and the increase in attention for photography as part of the art market (Petterson & Engelbrecht, 2012). Many categories have about the same market share as earlier on, which indicates that trends do not have a heavy impact the market share of certain categories over a decade.

Art works	Velthuis (2002)		This dataset	
Variable	**Mean**	**Standard deviation**	**Mean**	**Standard deviation**
Selling price (euro)	2.227,69	1.613,81	4.064,19	3.546,93
Size – surface (cm2)	8161,15	8069,27	6936,06	8248,32
Price per cm2	0,28		0,59	
Material				
Painting	50%		Painting	51%
Print	7%		Print	3%
Sculpture	21%		Sculpture	21%
Drawing	4%		Drawing	4%
Watercolor	6%		Photo	6%
Glass, ceramic	9%		Other	9%

[12] No inflation adjustment or currency appreciation is executed on these figures.

Other	3%			Unknown	6%	
N	11.869			29.330		

Table 5.3. Comparing descriptives art work. (Source: own elaboration.)

The total sales per artists increased a lot. However, some artists sell a lot, while others only sell some art works. They do use more galleries to sell their work and also work in more different mediums. During the period 2000-2010, the artists were, respectively, on average 47-57 years old, which is about the same age as the artists in Velthuis' research. The percentages per place of residence are about the same, only the popularity of Rotterdam increased.

The percentage of female artists is only 2% higher in this dataset. Apparently, the participation of female artists in this arrangement did not change much in two decades. In this dataset, there are more foreign artists, which could indicate more foreign artists living in the Netherlands or more galleries who look abroad for artists.

Artists	Velthuis		This dataset	
Variable	Mean	Standard deviation	Mean	Standard deviation
Total sales per artist (euro)	12.657	30.351	81.203	134.055
Sale characteristics				
Number of works sold	5,68	11,70	20,19	26,93
Number of different galleries	1,44	1,09	2,16	1,53
Number of different mediums	1,36	0,70	2,48	1,30
Demographics				
Age	50,03	11,92	1953	13,66
Female	25%		27%	
Foreign	20%		31%	
Place of residence				
Amsterdam	21%		20%	
Rotterdam	4%		13%	
Abroad	22%		22%	
Other	53%		45%	
N	2089		1453	

Table 5.4. Comparing descriptives artists.(Source: own elaboration.)

Galleries sold on average for about 4,6 times more euros between 2000-2010 than between 1992-1998. Even when the longer period is taken into account, it is a much higher amount. This could be partly explained by the amount of works sold, which is 2,5 times as much in the zeros decade than in the nineties. The number of represented artists stayed practically the same. Amsterdam is still a popular location for galleries which can be explained by the clustering of galleries.

Galleries	Velthuis		This dataset	
Variable	**Mean**	**Standard deviation**	**Mean**	**Standard deviation**
Total sales per gallery (euro)	130.248	217.389	598.920,68	1.242.551,61
Sale characteristics				
Number of works sold	58,47	80,18	148,88	301,96
Number of artists	15,33	13,69	15,96	16,83
Location				
Amsterdam	32%		27%	
Rotterdam	6%		4%	
The Hague	8%		6%	
Other	54%		27%	
Demographics				
Age of gallery	14,95	9,69	1986	12,54
N	203		197	

Table 5.5. Comparing descriptives gallery. (Source: own elaboration.)

5.4.1 Multilevel analysis

The analysis is done as much in the same way as Velthuis and Rengers (2002) did, to be able to compare the two studies. After having compared the descriptives, the results of the multilevel analysis will be compared below. It will be interesting to see which conclusion remain valid.

Looking at the baseline model and at model 4, the percentages are much alike between the two studies. Taking model 4 into account; Velthuis (2002) had a division of 63% accounted for by the level of artworks, 30% by artist level and 7% by gallery level. In this dataset the division is 64%, 30% and 6%. However, the total amount of variance explained differs. Model 4 of Velthuis (2002) explained a total variance of 27%. The model 4 in this dataset explains for a total of 37%, 10% more. This still means that 63% can be attributed to factors outside the research scope. However, a 10% increase is quite a lot and adds new knowledge to this field of research.

On art work level, this model explains 9% more variance among works of art. This could be caused by the division in categories, since this division slightly differed. The explanation of the variance on artist level increased the most when comparing the two studies. It could be caused by the addition of a new variable on artist level: style, which is an important attribute of an artist. Finally, in both models, a lot of variance among galleries is explained. The addition of the new variable art fair participation could explain the increase in explained variance.

It is interesting to analyse the effect of including another level of variables. The explained variance between art works stays practically the same in all models, indicating that variables on artist and gallery level don't have much influence on the explained variance between art works. The difference on artist level is the most interesting difference, as touched on above. While in the model

of Velthuis (2002), there is no change on the artist level when gallery variables are added, in this study there is. Adding gallery variables increases the explained variance between artists. This could be attributed to the art fair participation, since art fairs can have a influence on the exposure and media attention for artists and since art fair participation could indicate that the price level increases of those artists exhibited on fairs. This is a difference which imposes new questions about where and how the gallery can add economic value, especially since Velthuis (2002) casted a lot of doubt on the assumption that a gallery adds economic value. Finally, the changes on gallery level show the same pattern in both studies. They also both show that artist variables explain more variance between galleries than gallery variables themselves do.

	Baseline model (%)		Change model 2		Change model 3		Change model 4		Model 4 (%)	
	Velthuis	**This dataset**	Velthuis	**This dataset**	Velthuis	**This data set**	Velthuis	**This data set**	Velthuis	**This dataset**
Total variance	2555,103 (100%)	**14191403,14 (100%)**	-15%	**-26%**	-24%	**-32%**	-27%	**-37%**	1873,186 (100%)	**8988460 (100%)**
e0ijk (works of art)	1654,307 (65%)	**9344098,911 (66%)**	-29%	**-38%**	-29%	**-37%**	-29%	**-38%**	1175,816 (63%)	**5762668 (64%)**
u0jk (artists)	608,083 (24%)	**2433354,328 (24%)**	+14%	**-8%**	-7%	**-18%**	-7%	**-23%**	564,252 (30%)	**2685392 (30%)**
v0k (galleries)	292,713 (11%)	**1377080 (10%)**	+5%	**10%**	-34%	**-35%**	-55%	**-61%**	133,116 (7%)	**540399,6 (6%)**

Table 5.6. Changes in (un)explained) variance across the models. All changes in variance are relative to the baseline model. (Source: own elaboration.)

5.4.2   Comparing the specific variables and results

Some results affirm the results by Velthuis (2002). Both studies have found that paintings are the most expensive category. They also both found that prints are a relatively affordable category, though in this study they are not the most inexpensive category. Drawings are, which is remarkable because drawings are often one of a kind, while prints are often sold in editions. It could by caused by the categorization or by other contextual factors, like the appreciation of a certain category on the market. The reason that photography is included as a separate category, is because of the increased attention for photography[13]. Photography is a relative expensive category, especially compared to prints. Both are often sold in edition, though differences exist within photography for size and the edition number of a specific work.

Besides the fact that only a quarter of the artists is female, there is also a gender gap in price, as both studies show. Female artists receive on average 138 euro less for their work, according to

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[13] As shows the appearance of the first art fair focusessed on photography, Unseen, which held its first edition in 2012.

Velthuis (2002). This studies show that male artists receive on average 258 euro more per artwork, which means that the gender gap has evidently increased. Velthuis (2002) pointed out that women often had different career paths and are on average younger, which could influence the price.

This study confirms the result that works of older artists are more expensive than the works of their younger colleagues. The price gap increased a bit, from 11 euro between artists on average per year, to 14 euro per year of age difference. The objective variable is age but it could be correlated with experience, reputation or network, since older artists will have had more time to submerge in the art world. These parts can explain the small price gap.

Other results are completely different. Velthuis (2002) concluded that the number of different techniques does not have a significant effect on the price. This study did find a significant effect concerning working with different mediums. Mediums and techniques are not fully the same, however they both indicate how versatile an artist is in his or her art works. Working in different mediums had an influence on the price of 105,25 euro. This could be influenced by some kind of risk diversification: working in mediums that sell for high prices as well as working in mediums which generally sell for lower prices.

Most characteristics of galleries did not have a significant effect in the study by Velthuis (2002). However, in this study, the included gallery variables are significant, which casts some doubt on the statement (Velthuis, 2002) that galleries are not able to add economic value themselves. It also creates a stronger basis for further research on these variables. The magnitude of influence differs, but whether a variable has a positive or negative influence on the price, is the same in both studies. There is still a small positive effect for the amount of works a gallery has sold and it is even smaller in this study. This could indicate a smaller influence of the gallery on the price, or at least a smaller influence on the price related to the quantity sold. This study doesn't mention the reputation or assumed quality of a gallery, so no conclusions can be drawn on that plan. The effect of representing more or less artists increased. According to Velthuis (2002), there was a marginal effect for galleries that focus their sales efforts on a small number of artists, because they sell works for a higher price level than galleries that sell works of a larger group of artists. That effect increased, which could indicate that focusing on some artists positions a gallery in a firmer way than choosing to rely on more (and maybe a too varied range of) artists.

Age was one of the few significant variables on gallery level in the study by Velthuis (2002). The effect of age increased, according to this study. Every year a gallery exists, it accounts for a price increase of about 21 euro, compared with other galleries. The influence of the age of a gallery has increased, which could be due to the fact that many galleries don't survive their first 5 (Caves, 2000) years, so every extra year a gallery exists, can add up to their reputation and is a proof of the quality of the work they sell and of course of their business sense, which means some reliability when it

comes to doing business with the gallery.

According to Velthuis (2002), the three most reliable predictors of price are the size, technique and price level of art works sold to museums. Other strong overall predictors are the age and place of residence of the artist. Because of the very different sizes of the art works, size could not be included as a reliable variable in this study. The price level of art works sold to museums is also a not included variable. Therefore, it is obvious that three other predictors are the most reliable ones. From this study, the most reliable predictors of price would be the date of sale, category and location of the gallery. Other strong predictors are the age and gender of an artist and art fair participation of the gallery.

	Model 1 Baseline			Model 2 artworks			Model 3 artworks and artists			Model 4 artworks, artists and galleries		
	Coefficient (B)	Std.	p	Coefficient (B)	Std.	p	Coefficient (B)	Std	p	Coefficient (B)	Std	p
Constant Velthuis	1978	48	<0.01	2131	72	<0.01	1268	156	<0.01	791	189	<0.01
Constant this dataset	6234	236	<0.01	5880	187	<0.01	1950,823	185,2525	<0.01	1820,655	185,302	<0.01

Table 5.7. Comparing multilevel hedonic price functions for contemporary art in Dutch galleries. (Source: own elaboration.)

	Velthuis			Model 4 artworks, artists and galleries	
	Coefficient (B)	Standard deviation		Coefficient (B)	Standard deviation
Characteristics of works of art					
Year of sale			*Year of sale*		
1992	0	0	**2000**	0	0
1993	-164	59	**2001**	808,998	80,12947
1994	-118	63	**2002**	-2273,28	78,47894
1995	-13	63	**2003**	-3004,67	79,87349
1996	-73	67	**2004**	-2983,43	79,98753
1997	259	63	**2005**	-2876,47	80,95088
1998	371	63	**2006**	-2715,62	83,4729
			2007	-2588,38	83,63409
			2008	-2364,04	86,42704
			2009	-2417,65	91,56838
			2010	-2215,25	95,49803
Category					
Painting	0	0		0	0
Drawing	-725	67		-1556,24	155,7651
Print	-1991	63		-1496,91	245,0025
Photography				-297,531	150,4919
Sculpture	-318	43		-736,809	182,6724

Other	-329	83	-234,898	222,519
Watercolour	-683	59		
Glass	-425	64		
Unknown			-511,321	112,7655
Characteristics of artists				
Gender				
Female	-138	48	0	0
Male	0	0	257,9923	45,82788
Place of residence				
Amsterdam	138	55	0	0
Rotterdam	-200	106	219,3023	144,6844
Abroad	525	99	2032,708	142,8568
Other	0	0	428,9855	537,554
World			246,6653	230,8703
Amsterdam, Europe			-64,2216	249,5656
Amsterdam, Utrecht			1020,082	621,3544
Amsterdam, World			512,9835	754,0363
Den Haag, Europe			-26,827	1352,835
Den Haag, World			773,0627	311,079
Eindhoven, Europe			222,1731	409,2209
Netherlands (Other), Europe			-144,7	107,1511
Netherlands (Other), World			2133,219	625,3813
Rotterdam, Europe			181,634	94,85211
Utrecht, Europe			-131,468	89,96511
Unknown			-153,875	188,6077
Den Haag			-523,596	162,1855
Utrecht			177,7547	142,452
Den Bosch			-996,782	156,114
Eindhoven			13,83102	56,17901
Arnhem			1329,78	83,03912
Netherlands (Other)			219,3023	144,6844
Europe (incl Russia)			2032,708	142,8568
Nationality				
Dutch	0	0	0	0
Foreign nationality	268	105	898,409	177,985
Asian			-1087,31	741,4546
Australian			1278,496	315,5673
African			-1100	217,615
Middle East			799,6855	223,5564
Russian			2223,736	287,6897
Unknown			18,49261	117,3879
Belgian			-317,466	106,1066

German			158,1457	193,6954
French			62,04689	125,616
English			116,1432	93,79794
European East			1718,139	145,8955
American			1166,439	322,3729
South American			898,409	177,985
Age				
Age of the Artist	10,89	2,61	14,07559	1,437564
Sale characteristics of artists				
Number of different galleries	30,69	17,16	82,60249	10,9756
Number of works Sold (Artistsquared)	-0,033	0,010	-0,02743	0,002781
Number of works Sold (Artist)	7,64	2,45	6,715005	0,916015
Number of different mediums	-0,75	27,3	105,2498	14,7016
Style				
Figurative			0	0
Non-figurative			-177,942	50,13902
Both styles			346,8007	96,38225
Unknown			-31,44	265,67
Characteristics galleries				
Sale characteristics of galleries				
Number of works sold by Gallery	2,98	0,71	1,713768	0,201102
Number of represented Artists	-7,87	4,59	-22,1874	2,747813
Age				
Age of the gallery	7,98	4,84	20,8078	1,774929
Location				
Amsterdam	181	98	0	0
Rotterdam	95	162	-780,614	118,0496
Utrecht			385,4609	141,9862
Utrecht, Amsterdam			-653,267	154,1634
Unknown			1099,121	94,49748
Den Bosch			-721,653	109,0251
Den Haag	99	133	428,3536	81,09834
Den Haag, Amsterdam			-5242,82	424,3159
Eindhoven			488,7508	122,6189

Harlingen			-1275,21	148,7736
Laren			-408,748	140,0583
Oisterwijk			1276,629	175,2901
Other	0	0	-521,878	65,07658
Art fair participation				
Dutch art fairs			477,4658	71,30075
International art fairs			758,9435	53,37867

Table 5.8. Comparing variables within multilevel hedonic price functions. (Source: own elaboration.)

5.5 To what extent do variables on the three levels of art work, artist and gallery, explain the price of art works sold in the primary art market in the Netherlands during the years 2000 till 2010 with the support of the *Kunstkoopregeling*?

This question can be answered by combining the answers on the subquestions above. In total, the included variables account for a total explained variance of 37%. This means that with this dataset, almost 40% of the price of art on the primary market can be explained. The remaining 60% is explained by other determinants. Of the explained 40%, art work characteristics determine the price to the largest extent, which is 64%. This is a big influence, especially when taking into account that this level had the least amount of different variables. Especially year of sale and category are important variables. Artist characteristics account for 30%, of which gender and age determine the price to an great extent. And to conclude, gallery characteristics account for 6%, having location of the gallery and art fair participation as most important determinants.

5.6 Reflection: limitations, added value and future research

This study provided a second extensive research on the Dutch primary art market. It created more clarity on which factors determine the price of art, casted doubt on earlier assumptions and provides a basis for future research. As mentioned in the paragraph on relevance, besides the scientific relevance, the results are also relevant to gallery owners and (starting) artists who would like to get more insights in art price determination and compare it with their own practices.

Doing a quantitative research on this specific market, added new knowledge to the field and paves the way for more quantitative research on the primary market. Because of the limited amount of quantitative studies on the primary market, a convinced choice was made to this type of scientific research. However, a qualitative research, based on the results, could provide a context to the figures and provide more insights in pricing decisions or possible correlations between variables.

Besides this second suggestion, a third suggestion is related to the angle of research. This dataset is based on selling prices, which provides a certain angle. Information on the costs of running a gallery or the costs incurred by artists (e.g. material and labour costs) could provide another

interesting angle in the economics of the art world.

Based on the existing literature, some variables were selected to be added to the dataset. Even though such a selection is based on earlier research, it means a selection, which influences the results and is a constraint. A specific set of variables was included and they were allocated to the level of art work, artist and gallery. After the first multilevel analysis, more analyses could have been done on a macro level, which are left out in this study due to time constraints. This would be a first suggestion for further research. Many other suggestions can be done on the variables to include, some of them will be discussed below.

The importance of defining variables and always being clear about the goals and delineations is the most important lesson learned during this research. The results showed the importance of defining and including the right variables, since this selection influences the results. For a similar study, I would focus even more on this. Especially with a huge database, it is important to have clear definitions and categories from the beginning on. An example is the variable size. An important variable but due to statistical reasons, it could not be included. More clarity on beforehand on how to include size into the model maybe could have prevented it from being excluded. The more categories one variable has, the more difficult it often is to obtain significant results. This also suggests to do more, smaller studies to test different combinations of variables and then use those results to start the extensive research.

One of the new variables added in this research was the art fair participation of galleries, both within the Netherlands as well as abroad. Participating in an art fair indeed seems to have a positive influence on the price. Research on art fairs is an upcoming field, as are art fairs themselves. Since more and more art fairs are organized every year, more research on the effectiveness of art fairs would be interesting. Are the expensive booths paying themselves back? Is it only the case at certain art fairs? Or could there be an indirect effect: that the high costs of participating in an art fair do not influence the average price of an art work at a certain gallery but that participating in a prestigious art fair influences the reputation of a gallery, which does influence the price? These are interesting questions to be investigated in further research. Art fair participation can be seen as an indicator of the quality of a gallery. In another study, more variables about the reputation or affiliation of the gallery too could be included. Velthuis (2002) did include the affiliation of the gallery, while this study included the style of the artist. It would be interesting to combine these two variables and see whether a gallery who focuses on a certain style or niche can profit from a strong profile instead of following a strategy of diversification.

Reputation is one of the variables not included in this research because of the scope. Many variables were added manually and reputation would include different variables (for example; acquisitions by museums, amount of exhibitions, amount of publications), which would make the

research too extensive. However, it would be interesting to see how reputation influences prices, as suggested in relation to art fairs. To include reputation, new variables could be considered. Reputation does not only consist anymore of institutional affiliation. Independent blogs or websites like welikeart.com write about art and advice people on art. Besides traditional critics, critics can be everywhere these days, giving short impressions on Twitter or Facebook. The 'democratization' of the art world, and possibly the influence on the transparency of prices or influence of critics or galleries, could also be an interesting starting point for research in the future. Especially considering the fact that galleries only account for a small part of the variance. This validates many research questions on the future of intermediaries, galleries, art fairs and related ways of doing sales, connecting with the public and influencing both supply and demand.

Age and gender are variables which artists themselves can't influence and therefore seem to provide an unsatisfactory explanation for price differences. However, a parallel with the labour market could be drawn. In other sectors, it is still a common fact that women earn less than men and that men hold more senior positions than women do. More research into the gender issue would be interesting, assuming that people don't buy an art work because it is made by a men or a women. Variables like the style or category could possibly explain a part of the difference. If drawings are often made by women and paintings by men, the price difference is obvious. However, reasons could also be that men are better in negotiating with the gallery or that men more often have someone who supports them financially, so they can pursue a serious fulltime artistic career. Many variables could have an influence in this case, but it would be interesting to be able to define the gender gap more specifically.

Besides the suggestions on variables, future research should also have a careful look at the focus of the research. This study focused on the Dutch primary market. Many studies (a.o. Nahm 2010; Valsan, 2002; Moulin, 1987) focus on the art market in one or a couple of countries. A comparison between more countries could be interesting, also because this could provide new insights on the influence of nationality, place of residence and the extent of globalisation in the art world. The focus consideration does not only apply to countries but also to specific submarkets, like photography. Photography has their own logic of determining the price including specifics like the edition number, which makes it an interesting sub research field.

The comparison with Velthuis (2002) provided a reliable baseline and opportunity to draw interesting conclusions. Although it is not a longitudinal research, the ability to compare results with earlier, similar research, made it possible to give more insights in art market tendencies than would have been possible with another cross sectional study. Many results of Velthuis (2002) were confirmed and some were questioned. I am very curious to what a third similar study on the Dutch

primary art market, with data from the current decade, will be able to add, taken the limitations and research suggestions above into account.

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Appendix I

Codebook

1. Variables

Dependent variable: Price (ratio).

Overview independent variables per level		
Art work	Artist	Gallery
Size (Height, width, depth) Category Technique Medium Year of creation	Birthyear Gender Nationality Place of residence Number of works sold Number of representing galleries Style	Age Location Number of works sold Number of artists represented Dutch art fair participation International art fair participation

Level 1: Art work

Variable 1.1: Size
1.1a: Height
Notation: in cm, 0 – 1000
Variable sort: Ratio
Available in data.

1.1b: Width
Notation: in cm, 0 – 1000
Variable sort: Ratio
Available in data.

1.1c: Depth
Notation: in cm, 0 – 1000
Variable sort: Ratio
Available in data.

From these variables (1.1a t/m 1.1c) size is calculated:

Variable 1.1d: Size (square centimeters (paintings etc)/cubic centimeters (sculptures)
Notation: in cm, 0 – 1000
Variable sort: Ratio
To be calculated from 1a and 1b in data.

Variable 1.2a: Category

Variable sort: Nominal
Notation:

       1 = Painting
       2 = Drawing
       3 = Print
       4 = Photograph
       5 = Sculpture
       6 = Other
       7 = Unknown

Variable 1.2b: Technique/material used
Variable sort: Nominal
Notation, possible options:
Painting (includes:)

       1 = Oil
       2 = Oil, Other
       3 = Acrylic
       4 = Acrylic, Other
       5 = Tempera
       6 = Watercolor
       7 = Gouache
       8 = Wax
       9 = Wax, Other
       10 = Other Paint
Drawing (includes:)

       11 = Pastel
       12 = Ink
       13 = Pencil
       14 = Charcoal
       15 = Other Drawing
Print (includes:)

       16 = Litho
       17 = Etching
       18 = Woodcut
       19 = Silkscreen
       20 = Other Print
Photograph (includes:)

       21 = Enduraprint
       22 = Gelatin Silver
       23 = Lambda
       24 = C-print
       25 = Cibachrome
       26 = Other Photo
Other

       27 = Collage
       28 = Other
       29 = Grail technique
       30 = Relief
       31 = Mixed
32 = Unknown

Variable 1.2c: Medium (support)

Variable sort: Nominal
Notation, possible options:

      1 = Acrylate
      2 = Aluminium
      3 = Bronze
      4 = Bronze, Other
      5 = Canvas
      6 = Cardboard
      7 = Ceramic
      8 = Ceramic, Other
      9 = Dibond
      10 = Glass
      11 = Glass, Other
      12 = Granite
      13 = Iron
      14 = Mixed
      15 = Other
      16 = Panel
      17 = Paper
      18 = Porcelain
      19 = Steel
      20 = Stone
      21 = Wood
      22 = Wood, Other
      23 = Metal (Other than Iron, Bronze, Aluminium)
      24 = Pottery
      25 = Unknown
      26 = Plastic

Variable 1.3: Year of creation
Notation: in years
Variable sort: Ratio
Available in data.
This variable is not part of the initial analysis but could be taken into account to see trends over the years.

Level 2: Artist

Variable 2.1: Birthyear
Sort: Ratio
Notation: In years (1900-2000)
Most people are born between 1920-1985, clustered per 5 years.

      1 = 1931 – 1935
      2 = 1936 – 1940
      3 = 1941 – 1945
      4 = 1946 – 1950
      5 = 1951 – 1955
      6 = 1956 – 1960
      7 = 1961 – 1965
      8 = 1966 – 1970
      9 =1971 – 1975
      10 = 1976 – 1980
      11 = 1981 – 1986

12 = 1921 – 1925
13 = 1926 - 1930
14 = < 1920
15 = Unknown/Missing

Variable 2.2: Gender
Sort: dichotomous
Notation: 1 = Female
                   2 = Male

Variable 2.3: Nationality
Sort: Nominal
Notation, possible options:
          1 = Dutch
          2 = Belgian
          3 = German
          4 = French
          5 = English
          6 = European (other than above)
          7 = European East
          8 = American
          9 = South American
          10 = Asian
          11 = Australian
          12 = African
          13 = Middle East
          14 = Russian
          15 = Unknown

Variable 2.4: Place of residence
Sort: Nominal
Notation, possible options:
          1 = Amsterdam
          2 = Rotterdam
          3 = Den Haag
          4 = Utrecht
          5 = Den Bosch
          6 = Eindhoven
          7 = Arnhem
          8 = Netherlands (Other)
          9 = Europe (incl Russia)
          10 = World
The following categories could be added to the categories above, if necessary for certain analyses.
          11 = Amsterdam, Europe
          12 = Amsterdam, Utrecht
          13 = Amsterdam, World
          14 = Den Haag, Europe
          15 = Den Haag, World
          16 = Eindhoven, Europe
          17 = Netherlands (Other), Europe
          18 = Netherlands (Other), World
          19 = Rotterdam, Europe

20 = Utrecht, Europe

Variable 2.4: Number of works sold (calculate from this dataset)
Sort: Ratio
Notation: In numbers (1 +- 375)

Variable 2.5: Number of representing galleries (calculate from this dataset)
Sort: Ratio
Notation: In numbers (1 +- 6)

Variable 2.6: Style (Non-figurative or figurative)
Since style is very broad and it will be too time consuming to classify per school or –ism and this is
difficult in contemporary art, the division in non-figurative and figurative will be made.
Sort: dichotomous
Notation: 1 = F (Figurative)
                 2 = N-F (Non-figurative)
                 3 = F/N-F (artist is active in both styles, does not have a clear focus on F or N-F)
                 4 = Unknown

Level 3: Gallery

Variable 3.1: Age
Sort: Ratio
Notation: In years (0-100)

Variable 3.2: Location
Sort: Nominal
Notation, possible options:
        1 = Amsterdam
        2 = Den Bosch
        3 = Den Haag
        4 = Den Haag, Amsterdam
        5 = Eindhoven
        6 = Harlingen
        7 = Laren
        8 = Oisterwijk
        9 = Other
        10 = Rotterdam
        11 = Utrecht
        12 = Utrecht, Amsterdam

Variable 3.3: Number of works sold (to be calculated from dataset)
Sort: Ratio
Notation: In years (0-100)

Variable 3.4: Number of artists represented (to be calculated from dataset)
Sort: Ratio
Notation: In years (0-100)

Variable 3.5: Dutch Art fair participation
Sort: Dichotomous

Notation, possible options:
      1 = Yes

Variable 3.6: International art fair participation
Sort: Dichotomous
Notation, possible options:
      1 = Yes