DEVELOPER DECISIONS

A qualitative analysis of the choice's developers make that influence development speed

31 DECEMBER 2022

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Colophon

Title: Developer decisions
Subtitle: A qualitative analysis of the choice's developers make that influence development speed

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Word count: 21.336
Date: 31-12-2022

Preface

Before you lies my master thesis on project developers in the Netherlands. Specifically, it concerns the choices they make that influence the project speed. Such research with market parties on a subject that can be sensitive turned out to be quite difficult. It was difficult to ask the right questions to get answers for my research. In the end I am satisfied with the result.

Therefore, I would like to thank my thesis supervisor Huub Ploegmakers for supervision and guidance during my research. Huub helped me a lot with giving me the right literature and giving me a push every now and then when I was a bit stuck.

I would also like to thank my fellow students, Hugo van Peer and Jacco ter Horst, for drawing up the questionnaires together and collecting data.

Have fun reading my master thesis.

Summary

The Netherlands has been struggling with a housing crisis in recent years. House prices are rising unsustainably and there is a major shortage of homes. One of the reasons is that structurally too few new homes are being built to meet the urgent demand. This drives up the price and the demand remains invariably high. When there is a delay in an area development, it is referred to as a stalled site. There are several reasons why a site may experience delays. One of those reasons may be that developers are deliberately delaying projects to wait for better market conditions. In Great Britain it is certain to happen. In the Netherlands it is expected to happen, but to what extent is not clear. Therefore, the topic of stalled sites deserves more research. Hence the main question for this research:

"The research question of this study is: "How do developers make choices in different phases of project development? And do these choices influence the speed with which projects are delivered?"

To answer this question, project developers have been looked at from several economic perspectives. The first theory is the neoclassical theory. This perspective is, of the discussed theories, the most applied in real estate. The main concept of this theory is perfect competition of the market. When this is met, the market will function best. In addition, we look at New institutional economics where transaction costs are central. Finally, behavioral economics was discussed. This theory assumes that a market participant does not make fully rational decisions. A distinction can be made here between old behavioral economics and new behavioral economics. Old behavioral economics has been chosen for this study. Because relatively little research has been done into project developers along the lines of this economic theory.

Old behavioral economics mainly looks at the process that precedes a choice or an outcome. To investigate how developers arrive at a choice, developers were interviewed about the processes and information they use when making choices in the various phases of project development. An important finding is that many developers use the rule of thumb to phase projects when this is most likely not always necessary. Unnecessary phasing of projects can mean that houses are completed less quickly than is optimal. It is not clear when projects should or should not be phased.

Follow-up research can therefore look at when it is optimal to phase projects in order to achieve faster housing production.

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1. Problem statement

There is currently a housing crisis in the Netherlands. This crisis is fueled by unsustainable increases in house prices and the large housing shortage. In the last quarter of 2021, house prices rose by no less than 20.7% compared to the last quarter of 2020. This pushed the average sales price up to €438,000 (NVM, 2021). Previously, there were often clear regional differences in the price increases. Regions in and around the Randstad were the places where prices rose the fastest. In contrast, prices in Limburg and Twente rose little or not at all (Centraal bureau van statistiek, 2022). Nowadays, the differences are less far apart and every region has to contend with strong increases in house prices.

In addition to rising house prices, there is also a major housing shortage. This deficit was estimated at around 279,000 in 2021 (ABF research, 2021). This shortage of homes is also clearly reflected in the sales figures for homes in the last quarter. The number of homes sold fell by 23.3% compared to a year earlier. The supply of the number of homes has also fallen by 33.4% (NVM, 2021)

The housing shortage has been an issue in the Netherlands for some time. This problem was mainly caused by the structurally lagging new-build homes in response to urgent demand (van der Krabben, 2021). As a result, the shortage has increased every year except in the year 2020. In 2020, the housing shortage was reduced from 331,000 to 279,000 homes due to covid. This was mainly due to the slowdown in population growth, more deaths and less migration (ABF research, 2021) However, the year 2020 is an exception to the rule, because the projections for the coming years are that the deficit will increase again with a peak of 317.00 in 2024. After that, the housing shortage will gradually decrease, but the estimates until 2035 remain that there will be a structural shortage (Het Ministerie van Binnenlandse Zaken en Koninkrijksrelaties, 2021).

1.2 Causes of rising prices

The price of a product is often determined by its supply and demand. When demand rises and supply remains the same or falls, the price will generally rise. When supply rises and demand falls, the price will normally fall. This law of supply and demand applies to most consumer goods, but not to homes. The housing market is a stock market. There is a large stock of existing homes and a relatively small number of new homes that are added to the stock each year (van den Dam & Eskinasi, 2013; Verbruggen et al., 2005). Due to the longer construction time of a house and institutional obstacles such as objection procedures and policy in the field of spatial planning, the supply cannot quickly adapt to the demand in the short term (CPB, 2019; Verbruggen et al., 2005). In the longer run, too, it appears that the supply is very inelastic. When the supply is inelastic, it means that the supply hardly changes regardless of the price. In a stock market like the housing market, the price of a house is mainly determined by demand (Verbruggen et al., 2005).

Moreover, the housing market consists of several sub-markets, namely: the housing market, the financing and investment market, and the construction and land market. These markets combined determine the prices of the homes. In the housing market, consumers exert the demand for housing (van den Dam & Eskinasi, 2013). This question concerns both the size and the nature of housing. The size of the demand is mainly determined by the number of households in a region and its development. Demographic shrinkage leads to an oversupply of homes, which has a depressing effect on prices. Demographic growth leads to a greater demand for housing and therefore has a price-increasing effect (van den Dam & Eskinasi, 2013). In the Netherlands, we are therefore mainly faced with a price-increasing effect, because there is still demographic growth in the Netherlands (Centraal Bureau voor de Statistiek, 2021). On top of an effect on the price, the growth of the population also has an effect on the housing shortage, more people simply have to be accommodated, which means more homes are needed. In addition, there are economic factors of influence. In a booming economy, spending scope (income), the willingness to invest and the propensity to move are greater, which pushes up the price. In a slump there is less confidence, the need to move is less and less purchasing power, which has a depressing effect on prices (van den Dam & Eskinasi, 2013).

In the investment and financing market, the price of housing services is translated into the prices of real estate. Interest, lending and mortgage interest deduction in particular have an influence on the price (van den Dam & Eskinasi, 2013). When low interest rates are used, this is often immediately reflected in the price. At the moment there is a historically low interest rate, which is also reflected in house prices (Obbink, 2021). An expansion or limitation of credit can also play a role in the price. If banks are less likely to grant mortgages, this can have a lowering effect on housing prices (van den Dam & Eskinasi, 2013). The mortgage interest deduction also affects the price of a home. This form of subsidy results in higher house prices.

The last market segment is the land and construction market. In the past, municipalities had a monopoly position with regard to the purchase of building land. This position allowed the municipalities to appropriate the increase in the value of the land when it changed its destination (Segeren, 2007). This changed in the 1990s when project developers started purchasing raw building land for residential locations at an early stage in order to make more profit. Later on, investors, housing associations and builders also entered the land market. Due to the rise in house prices, the purchase of raw building land became more and more interesting, this was because there was an increasing increase in value due to the conversion of agricultural land to building land. As a result, the demand for raw building land also increased, driving up the price further. This increasing demand and rise in land prices had an immediate effect on the pricing of new-build homes (Segeren, 2007).

Many factors affect the price of a home. However, some factors such as the mortgage interest deduction are marginal compared to the macroeconomic supply and demand of the housing market in the Netherlands. For years there has been a great demand for homes in the Netherlands that the supply side cannot meet. This is because as mentioned before, the supply side is very inelastic. Causes for this inelasticity are therefore discussed in the next section.

1.3 Causes of the increasing housing shortage

As mentioned earlier, the main cause of the increasing housing shortage is the structural lag of new construction production in relation to the demand for housing. Area developments are often delayed. These delayed projects are also referred to as stalled sites (McAllister et al., 2016). These delayed areas will take longer than usual once the plan is approved. There are several reasons why there can be delays in an area development. Buitelaar and van Schie (2018) argue that policy and regulations can have a delaying effect. In the Netherlands, the development process, in which policy and regulations play a role, has three phases. The first phase is between the informal approval and legally binding zoning. In this phase, visions, master plans and programs of requirements are drawn up. Then comes the phase between the zoning plan and the building permit. Finally, there is the phase between the granting of the building permit and the completion of the construction. Particularly in the last two phases of this development process, there can be major delays due to objection procedures against, for example, a permit or the zoning plan (Buitelaar and van Schie, 2018). In addition, laws such as the Nature Conservation Act may require exemptions in certain areas. If certain limit values are exceeded, for example for nitrogen, mitigating measures will have to be taken, otherwise the development of the area may not continue.

Another cause mentioned by Buitelaar and van Schie (2018) are problems with the feasibility of a project. These problems are mainly financial in nature, which means that a destination or a permit cannot be realised. A good example of these feasibility problems can be seen in housing associations that are struggling with rising material and labor costs. Where construction costs have risen almost every year by about 7 percent, housing associations can only implement a limited rent increase to cover these costs (BNR Webredactie, 2021).

In addition to regulations and feasibility problems, problems can also arise at the location itself (Buitelaar and van Schie, 2018). Due to the soil investigation, there may still be more pollution than originally thought. Archaeological finds may be made and the project will have to be halted. The groundwater level may be too high or local residents and residents may turn against the plan.

Landowners can also choose not to develop their land or not to sell it on to other parties. Project developers, who own land themselves, often choose a strategy to delay land policy themselves or use the phenomenon of land banking (Buitelaar and Schie, 2018). Simply put,

land banking is holding a stock of land in reserve to secure construction output (McAllister et al., 2016). Land banking is not a strange phenomenon in the United Kingdom where developers keep an average of 2.8 years' worth of land stock. This is mainly done because land can yield a higher yield when it is developed gradually (Buitelaar and van Schie, 2018). A landowner can also consciously choose to delay a project. This strategy can be applied when more favorable market conditions are expected in the future, allowing the developer to make more profit. According to Buitelaar and Schie (2018), several parties have a share in the stalled sites in the Netherlands. The largest party is the municipalities, which own no less than 50% of these sites. In addition, natural persons and investors are the largest with a 20% share each. There are also housing associations and builders and developers with 6% and 4% respectively. It should be noted, however, that the proportion of builders and developers is probably higher than these figures indicate. This is because there is a building claim from builders and developers on part of the 50% of the municipality.

Developers often want to purchase agricultural land at an early stage in order to appropriate the increase in value of land when its use changes. This is also known as land speculation. In the Netherlands, it is not expected that land speculation will occur on a large scale, but because a lot of money can be earned with this strategy, it cannot be ruled out that it will occur (van der Krabben, 2021). In the Netherlands, approximately 14,100 hectares of land are owned by builders and developers. Assuming that 25 homes can be built per hectare, this equates to about 350,000 homes (van Schie et al., 2018). Much of this land is located just outside the urban area, where land use changes yield the most money.

1.4 Research aim and questions

This research will focus on the problem of the housing shortage in the Netherlands. The shortage in the Netherlands is inextricably linked to the high prices that prevail there at the moment. Although the problem is high on the political agenda, it remains to be seen in the coming years whether the measures that will be taken in the coming years will actually help. A problem that arises in the housing market, as mentioned earlier, is that parties who own land decide not to develop it and then earn more money from it.

The central objective of this research is as follows: To gain a better understanding of how property developers arrive at certain choices regarding area development, in order to create a better picture of how property developers work in the Netherlands. This may contribute to the exposure of the problems in housing construction and, moreover, may contribute to the acceleration of housing production.

The research question of this study is*: How do developers make choices in different phases of project development? And do these choices influence the speed with which projects are delivered?*

1.5 Scientific relevance

This research will contribute to the knowledge in the field of choices made by project developers regarding area development. It examines the procedures and information that developers use to decide whether or not to develop an area. This is done using a qualitative method by questioning property developers with semi-structured interviews.

Little research has been done in the Netherlands on stalled sites in relation to the project developers. Explanations for the housing shortage and rising house prices are mainly discussed from the perspective of neoclassical economics. From this angle, the inelastic supply side is mainly mentioned. In particular, land use regulations and plan permissions (Ball et al., 2010; Gyourko & Molloy, 2015; Hilber & Vermeulen, 2015; Ihlanfeldt, 2007; Jackson, 2016; Paciorek, 2013). For example, Ball et al. (2010) states that there is little international agreement on the value and measurement of price elasticity and that different problems are encountered at different spatial scales. Hilber and Vermeulen (2015) investigated the influence of the English planning system on house prices. This showed that especially the system significantly affects the volatility of house prices. This particularly affects people who want to buy their first home. This group does not yet have a large starting capital and are in a relatively low income bracket. Existing home owners are more or less protected by price fluctuations because the value of their own home is also rising. If this group wants to move into the market and buy a house at a high price, they will probably also be able to sell their house at a high price. Jackson (2016) indicates that in the US there is also a positive effect of land regulation on house prices. Jackson explains that people are willing to pay more for houses where stricter rules apply. In addition, he explains that these rules also affect the supply of new homes, resulting in fewer homes being built. Gyourko and Molloy (2015) looked at several studies on the effects of regulation on both house prices and the amount of new construction. The studies show that regulation reduces elasticity, the stock of houses is smaller, there are higher house prices, the volatility of house prices is higher and the volatility of the construction of new houses is lower. It should be noted, however, that many of these studies used cross-sectional research. As a result, these studies may be biased by omitting variables and reverse causality.

In the United Kingdom, studies have shown that developers exhibit strategic behavior when it comes to selling land. Landowners who agree to change the zoning of their land in question, without any intention of actually developing that land (McAllister et al., 2016). In addition, there are parties that purchase land with a view to a change of use of that land, in order to subsequently resell it. This is also known as 'banking a permission'.

Speculative home builders have also been researched in the United Kingdom (Adams et al., 2009). Builders like this are largely responsible for the construction of houses in these countries. The research focuses on how these types of developers determine the speed at which homes are built. This showed that when there is a change in demand the developer

reacts with price changes. Furthermore, the planning system, which does play an important role in the British system, has only indirect influence on the speed at which construction takes place. So when more land issuances are made, the production rate will not increase significantly. In the Netherlands there are no hard figures when it comes to speculative home builders.

Developers also sometimes choose to postpone projects because projects are difficult to phase. This is because projects that are difficult to build in phases carry more risk. McAllister et al. (2016) found this in the United Kingdom. It is especially difficult to phase in buildings with a high density, such as in an apartment complex, because apartments simply cannot be delivered one by one. On the other hand, projects with a low building density, such as separate houses, can be phased more easily. The advantage here is that it is easier to respond to the market. A developer can therefore postpone a project because the market is not favourable. Research from the United States shows that several factors influence the phasing of a development. These are economies of scale, bearing costs and market volatility (Ott et al., 2011). In the Netherlands, however, little or no research has been done into why developers choose to phase projects. It can therefore be scientifically relevant to look at how and why developers decide to phase projects in the Netherlands

1.6 Societal relevance

The social relevance of this topic has already been mentioned in the introduction. Both the unsustainable price increases and the tightness of the housing market are problems that affect society and therefore need to be solved. When project developers make certain choices to delay certain developments, this affects society in terms of both the price rise of homes and the continuing shortage on the housing market. It is therefore socially relevant to investigate which choices property developers make that delay housing construction.

In addition, actors such as municipalities, landowners, investors and other developers, who are involved in area development and therefore have to deal with developers, can gain better insights into how developers work. A better understanding of developers can promote the relationship and cooperation of these parties. Besides promoting the relationship and cooperation, the municipality can also respond better in terms of policy.

2. Theoretical framework

In order to create a picture of why developers make certain choices, this section highlights several angles of economic theory. These theories could be used to explain the choices made by developers.

2.1 Economic theories

There are several theories in the field of economics to describe the explanations of the market. The three most important ones for the real estate market are discussed below.

2.2. Neoclassical theory

Neoclassical economists are mainly concerned with how a price is established by the supply and demand mechanism. The most important concept for this theory is the perfect competition of the market. When a market is able to meet these conditions, the market will work best. Individuals or companies entering this market make rational choices, individuals seek the maximum utility and companies seek the maximum profit and individuals behave independently because they have full access to information (Weintraub, 2002.). When a market functions perfectly, it must fulfil several criteria. One important criterion for the research that takes place here is information. Neoclassical theory assumes that, when a market functions perfectly, buyers and sellers have full access to information and can use it to make rational decisions. An important concept here is what Simon (1990) calls substantive rationality. This form of rationality looks primarily at the outcome of a process and not at the process itself. For the neoclassical theory, it does not matter how this outcome is achieved. It can be said that the end justifies the means. The picture painted here of a perfect market is only a theoretical reality. In practice, a market will never be perfect. Looking at the current housing market and land market in which property developers operate, information is very important. From a neo-classical point of view, a property developer will have all the right information at his disposal and will know how to apply it correctly. If this were the case, then all land positions that developers manage to acquire should be secure and all houses that are developed should be sold at the best possible price. In reality, however, it is not the case that every land position is designated for future house building and house prices are often determined by estate agents who have some bias in determining house prices. Despite the fact that the housing market is far from perfect, the body of thought is still widely used. This is because the theory is still easy to apply. For example, when there are few houses for sale and there is a high demand, prices will simply rise quickly.

2.2.1 Q theory

Looking at the behavior of a developer with the neo-classical theory as a starting point, theories are often used to determine investments. The q theory is also part of the neo-classical theory. Tobin (1969) came up with the idea that the investment rate should be related to q, where q is the ratio of capital to its replacement cost. Tobin's theory was then further developed by Hayashi (1982). He figured out that theoretically there was no uniform q but that there is a marginal q and an average q. The marginal q expresses the ratio between

the market value of an additional capital unit and the adjustment costs. This does involve some uncertainty, because these are transactions based on the future, and this uncertainty is difficult to apply within the q ratio.

For that reason, the average q is often used in the empirical field to make investments. The average q is observable and reflects the ratio of the market value and the capital units. These capital units are observable because they are measured by the average return on capital (Bulan, 2005). However, the problem that arises here is that estimating the future cost of investment is difficult because only the marginal q can capture the future price.

Donald Jud & Winkler (2003), conducted a study in which they applied the q ratio to investing in housing. In this study, investment was measured by building permits, housing starts and housing investment expenditure. This shows that the housing market does indeed function as the q theory suggests. The result is that house builders build more houses when the new houses are relatively cheap compared to the existing ones.

2.2.2 Options theory

Another theory, which also falls under the neoclassical stream of economics, is the options theory. This theory aims to calculate the probability that an option will be exercised. These options can be, for example, investing or waiting to invest because better prices are expected. The prices of these options are determined by the function of a number of variables. These variables are time until the option is exercised, the final price paid for the asset, the current price of the asset and the risk-free interest rate. Furthermore, there is another variable that is unobservable namely the variance of the investment return of the gain. It was first applied to the stock market by Black and Scholes (1973). They used it to estimate the equilibrium price of a share. However, they assumed ideal market conditions with no transaction costs.

Titman (1985) was the first to apply the option theory to the real estate market. His research focused on vacant land. He used the theory to explain why some landowners deliberately chose to leave land fallow or why they underused it. His model showed that postponing investments in land is financially profitable. Uncertainty is central to the model. Uncertainty about what type of building is considered optimal on the land. After all, the value of the land largely depends on what can be built on it. This uncertainty is determined by a number of factors. These factors are price volatility and rental rates. The higher these amounts are combined, the higher the value of the land becomes. With high uncertainty, development activity eventually decreases.

Williams (1991) built further on Titman's model. He added a number of parameters, allowing the owner of undeveloped property to determine both the date and density of development. In addition, there is also the option to refrain from developing the project. The value of these options is determined by the stochastic evolution over time of the construction costs of

developed property and operating income. In the model, cash flows could also be negative, which was not previously possible in Titman's model.

2.3 New Institutional Economics

Ronald Coase can be seen as the founder of new institutional economics (Coase, 1937, 1960). In his first work, 'The Nature of the Firm', Coase described the origin of firms. He did this by looking at the conditions under which an entrepreneur starts hiring people or outsourcing work. According to traditional economics, outsourcing is always better because the market works efficiently and therefore a person or company already provides a good or service in the cheapest way. According to this theory, it would then be cheaper to always outsource work. However, Coase concluded that using the market involves transaction costs. These transaction costs are the costs in addition to the price of a product, such as searching for information and negotiating contracts. Because of these transaction costs, companies are faced with a choice. Coase also calls this choice the 'make or buy' principle. In this case, an actor can make a product himself, creating or expanding a company, or the actor can buy the product. The choice the actor makes is based on the size of the transaction costs. According to Coase, when the transaction costs are so high, it would be more logical to start a new enterprise in order to lower the transaction costs. Because of this theory of Coase, the theory of vertical integration of firms was born. Vertical integration means that a company manages to combine several facets of the production process within one company (Meijer & Buitelaar, 2022). An important economist Williamson has devoted much research to transaction costs and especially the boundaries between the firm and the market that influence the vertical integration of firms (Wiliamson, 1975, 1985). The neoclassical theory of vertical integration mainly looks at mitigating inefficiencies caused by multi-level market power. Wiliamson's transaction cost theory of vertical integration mainly looks at incomplete contracts, incomplete information, the costs and benefits of internal organisation and opportunistic behaviour. Ultimately, Wiliamson has devised several strategies around his theory of vertical integration. The first falls under the 'make' principle and is called vertical ownership. This means that the company manages to combine several parts of the production process within the company. In addition, there are two strategies when it comes to the 'buy' principle. The first of these is called "spot-market trading" and is a market transaction where the relationship between the buyer and seller is one-off and transient in nature and where the price is determined by the price mechanism. The second is a strategy where the buyer and seller enter into a long-term contract and multiple transactions take place. Here experience and trust are important mechanisms, this is also called long-term vertical contracting.

To make the transactions run as smoothly as possible, there are institutions that set the rules. Among these rules, property rights are the most important. Ultimately, institutions must ensure that transaction costs are minimised and that human uncertainty is kept to a minimum (Adams & Tiesdell, 2013). In 'The Problems of Social Costs', Coase described how this can be achieved. In it, he explains that without transaction costs and alternative modes of property

rights, externalities can be remedied. Coase argues that market failures are not only caused by externalities but also by high transaction costs (Adams & Tiesdell, 2013). According to him, the government should address these market failures. A government can do this by using a system where property rights are better established in order to internalise externalities.

The theory of transaction costs can be applied to situations that occur today. For example, policies and regulations can increase transaction costs for developers because delays can occur (Dawkins, 2000).

2.4 Behavioral economics

Behavioral economics disputes that market participants can always make rational decisions that might be beneficial in their own self-interest. Economists have looked at psychological insights and implemented them in economics. These insights showed that people act out of emotion and that this influences decisions. Because of these emotions, it turned out that people often do not act rationally. This psychological angle of looking at the economy can be divided into two camps, namely the old behavioural economics and the new behavioural economics (Sent, 2004).

Economists who subscribe to the old behavioural economics mainly wanted to distance themselves from mainstream economics. They wanted to move away from the general focus on profit and utility maximisation and equilibrium (Sent, 2004). They wanted to develop an alternative with insights from psychology. They focused on discovering laws in empirics that described behaviour as accurately as possible. Whereas mainstream economics assumes rational thinking in combination with profit and utility maximisation, old behavioural economics assumes deviations within neoclassical behaviour. And where mainstream economics looks at alternatives the option theory and consequences (q-theory), old behavioural economics looks at the form and content of utility function (Sent, 2004). An important concept in old behavioural economics is the concept of bounded rationality. This concept takes into account people's cognitive limitations, which limit their ability to reach the optimal decision. These limitations are, for example, the person's computing capacity and knowledge (Simon, 1990). Bounded rationality mainly looks at ways in which the process of decision-making can influence the final decision. According to Herbert Simon, one of the founders of the old behavioural economics, these decisions cannot be predicted in advance without the knowledge that led to the decision (Simon, 1976). Simon distinguishes between substantive and procedural rationality. In substantive rationality, the outcome of a decision is important. It is about profit or utility maximisation, as in mainstream economics. Procedural rationality is about the process that led to a particular decision. Whereas old behavioural economics wanted to isolate itself from mainstream economics, new behavioural economics is more within the mainstream.

New behavioural economics, like mainstream economics, is based on maximum utility maximisation. From this point of view, the founders of this theory, Tversky and Kahneman, added a number of deviations. These can be divided into three groups: heuristics and biases, framing effects and prospect theory (Kahneman & Tversky, 1979; Tversky & Kahneman, 1974, 1981). Heuristics and biases revolve around shortcuts that are made in reasoning. Representativeness, availability and anchoring are central. When these are used, they can lead to systematic and predictable facts. Framing is about the formulation of a decision problem that can influence a person's choice. The prospect theory is generally the best known. This theory describes that the preference of decision in case of uncertainty depends on the circumstances. Kahneman and Tversky make three generalisations: Profit is treated differently from loss, outcomes that have certainty outweigh uncertain outcomes and the structure of the problem can influence choices.

In the real estate market, behavioral economics is applied to both the consumer and the developer. On the consumer side, Pryce and Levin (2008) find that behavioral economics focuses on social, cognitive and emotional biases that influence economic decisions. For example, a transaction may be framed in a certain way. That is, information that affects a transaction is shared in a certain way. For example, in today's market, real estate agents say that people have to outbid each other to have any chance of actually buying the house.

2.4.1 Behavioral economics on developer behavior

Bounded rationality plays a role in making decisions for a developer. Due to limited knowledge and limited capacity to process this knowledge, people go for a choice which is satisfactory for them and which has been arrived at by using simple decision rules. Simon (1979) calls this phenomenon satisficing. Mohamed (2006) argues that a person's ability and the difficulty of a solution influence the maximization of the usefulness of a decision and therefore people fall back on these decision rules more quickly and are therefore more likely to satisfice. Mohamed (2006) states that not only bounded rationality is a cause of satisficing but that there are multiple causes for setting suboptimal goals. He provides explanations for this that are more in line with the new behavioral aspect. These are: the endowment effect and loss aversion, mental accounting, and narrow bracketing.

In addition to developers satisfying. Developers often also choose to adopt a certain investment vision (Guy et al., 2002) This vision goes hand in hand with how developers look at a city. As a result, developers will not easily deviate from areas they know. They limit their activities to cities and areas they are familiar with. They stick to these areas because they want to avoid risk.

Research in the United Kingdom shows that, when acquiring land, developers make extensive use of networks (Adams et al., 2011). These networks are necessary because the land is not openly marketed. In the United Kingdom, land is often only offered to a limited number of developers. In addition, corporate hierarchy plays an important role in land acquisition. Bids for land often have to be approved by a higher management level in the company. Networks are important in this regard in order to purchase land relatively cheaply. When a high bid must be made on the market in order to outbid other parties, this bid may be vetoed internally. Finally, the use of a network is the best way to obtain land. Obtaining land through the market is very inefficient.

2.5 Application on this study

The choice to be made for this research is between the three economic perspectives outlined above. The theory of new institutional economics where transaction costs are central is well applicable for the vertical integration of a company. This theory is especially useful to identify different types of developers as Meijer and Buitelaar (2022) have done. The use of vertical integration will also be used in this study to identify the different types of developers. Williamson (1985) describes that transaction costs, are costs such as negotiating or retrieving information, which developers have to deal with a lot. Therefore, this theory will not be addressed outside of vertical integration. The Neoclassical theory is the most widely used theory when it comes to developers. This theory is mainly applied to explain supply. Studies mainly focus on the elasticity of this supply. This study does look at the supply side, but not specifically how it can become more elastic, but at decisions that affect the supply. Like whether or not to develop a certain location. Therefore, this research will mainly focus on the behavioral aspect of developers.

Then a choice has to be made between the two perspectives of behavioral economics. Jackson and Watkins (2005) chose the old behavioral side for their research. They argue that developers are unlikely to be completely rational when it comes to making decisions. Moreover, it is not clear whether these decisions can be understood in the sense of bounded rationality arising from information limitation (Jackson and Watkins, 2005). They believe that decisions are not only made on the basis of codifiable information, but that competences and cognitive capacities also play a role in the decision-making process. They argue that rules of thumb and experiences provide shortcuts and that decisions are shaped by perceptions, beliefs, habits, social and cultural norms and emotions (Jackson and Watkins, 2005, p.2326). These shortcuts also occur in new behavioral economics. This research examines how a decision has been reached, and the process is examined. That is why the theory of the old behavioral economics is more in line with this research, where procedural rationality is used.

3. Contextual frame work

In the theoretical framework, the theories that explain the behavior of developers have been discussed in particular. Because the planning and development process differs per country, this chapter will explain the Dutch context. This is important because important choices are made during these phases as to whether or not an area will be developed. In addition, it is important to know what kind of information and procedures developers use during these phases. Moreover, there are several types of developers who also behave differently because they have different business strategies through vertical integration processes. Therefore, this section will also categorize different types of project developers.

3.1 The development process

The development process can be divided into four phases: acquisition, development, construction and ownership or long-term investment. The first two phases often run parallel and interact with each other (Buitelaar & Meijer, 2022, de Leve & de Geuting, 2018). In these phases, there are several steps that developers go through in order to eventually realize new construction (For the acquisition phase these are: Establishing a design for a policy document, land acquisition, feasibility study. In the development phase, elaborating the housing plan, changing the zoning plan and obtaining a building permit are the steps that a developer often has to go through. Of course, this does not apply to areas where no zoning change is required. The steps in the construction phase are first to sell the required percentage of homes and then to start construction work until the final home is completed. For this research, only the first three phases will be considered, because it is precisely in these phases that important decisions have to be made that influence the development process. In addition, these first three phases are connected with housing production, where the last phase of housing only affects yield or ownership.

3.1.1 The acquisition phase

Before land can be purchased, the demand for housing in the area must be examined and the potential of certain pieces of land must be assessed. For information on demand, one often falls back on national surveys such as the WoON survey or data from CBS or PBL (Michielsen et al., 2019). Whereas in the past no information about demand was needed in more expensive regions, such as the Randstad, because it was already clear in advance that there was enough demand, this now applies to almost the whole of the Netherlands. That is why we are now mainly looking at what type of home is needed. To see if there is potential in certain pieces of land, developers often look at the structure visions of the municipality. On the basis of these structural visions, developers try to estimate where possible house construction will take place. The municipality often does not mention any concrete locations to prevent speculation. Developers also look at the zoning plan, where, for example, roads that lead to a dead end in a certain area are examined. This could be an omen that this area will become available for housing in the future. In addition, developers also try to obtain information at official level about new housing locations, but this is hardly ever successful.

When it is already clear that in the coming years, certain pieces of land will be changed from, for example, agricultural land to building land, this is called 'warm land'. This warm land is very attractive to developers because they can then be sure that housing can be built on it. Developers know when they own warm land if the municipality applies the Municipal Preferential Rights Act. The owner of the land must then offer the land to the municipality first if he or she wishes to sell it. The municipality may only apply the rights to non-agricultural zones and areas with new zoning, so people who own the land know that the municipality wants to build houses on it.

Farmers and municipalities usually own pieces of land in the Netherlands. When land is purchased, it is usually from these parties. When the municipality owns the land and wants to sell it for housing, this is often done through tenders (Michielsen et al., 2019).

3.1.2 The development phase

When land has been purchased or was already in the possession of the developer or municipality, the development phase can begin. This phase, as mentioned earlier, usually runs parallel to the acquisition phase. This is when the plan starts with an initiative from the municipality or the developer to realise housing somewhere. The municipality plays an important role in this phase. When a municipality owns land, it can take on the role of project developer. This is also referred to as active land policy. In this case, the municipality draws up its own plan for developing the area, prepares the land for building and provides the infrastructure and other facilities. When the zoning plan is ready, building plots are sold to market parties who then build houses according to the municipality's wishes. The homes can also be sold to private individuals for self-building (Michielsen et al., 2019).

If the land is owned by the developer, facilitating land policy is chosen more quickly. In this case, the municipality makes agreements with the developer about how the area should look. The municipality may also be responsible for preparing the land for construction. The development of a plan is done by a private party. When the construction claim model is used, the land is often owned by several owners. In this case, the municipality buys the land from these persons or parties, who then receive a building claim in return. The municipality prepares the land for construction and the persons or parties with a building claim can buy the building plots back at market prices. This model is used so that the municipality can better coordinate the process.

It is also possible that the municipality and the developer set up a land development company together. In this joint venture, both the municipality and market parties contribute land and capital on a pro rata basis. In this form of collaboration, the profit of the project is shared (Michielsen et al., 2019).

During this phase, the cooperation of the municipality is very important because they have to assign the zoning change. That is why the developer can check in advance whether the initiative already fits into the structural vision. When the developer develops a plan that already fits well with the vision of the municipality, the municipality is more likely to adopt a sympathetic attitude towards the plan.

If the municipality wants to participate in the plan, a phase begins in which the developer and the municipality have many discussions with each other. The plan will be worked out in more detail with the aim of seeing exactly how many houses need to be built and what type of houses need to be built. In the municipality, several departments are often involved in this process. These projects are therefore more difficult to coordinate with larger municipalities than with smaller municipalities, where the lines are often shorter. This elaboration phase of the project usually lasts the longest of the entire project development. This is because of the broad scope on which agreements must be made. (Michielsen et al., 2019). Usually these negotiations go quite smoothly and the developers know what to expect from the municipality and vice versa. However, the negotiation game is quite complex and takes a lot of time. Sometimes it is necessary to take a step back when, for example, it appears that a different insight has arisen about an already discussed subject, which means that it has to be dealt with again. Large inner-city projects in particular are time-consuming. In these projects there are often many stakeholders in the area and the current owners in the area have to be bought out. With expansion locations, the development process is usually many times faster. Here there are fewer stakeholders and fewer landowners to be bought out. With these projects there is only discussion about whether the location should remain green or not.

3.1.3 Construction phase

Only when the zoning plan is irrevocable and the urban development plan has been adopted, a developer knows with certainty that he is allowed to build and how many and which homes. To this end, developers have often been in contact with construction companies whether the filling in of an area is technically feasible and at what cost. Developers rarely start building before 70% of the homes have been sold. This is an agreement that developers make with guarantee providers such as Stichting Waarborgfonds Koopwoningen, Woningborg and Bouwgarant (Michielsen et all., 2019). This guarantee is necessary to qualify for the national mortgage guarantee.

Some developers also have a construction branch and can therefore realize the construction under their own management. If this is not the case, a developer will have to engage a contractor to realize the construction. Developers who have their own construction branch in the company have the advantage that they can estimate costs more easily and can better evaluate the actual costs of the projects during construction.

3.2 Types of developers

There are several ways to classify developers. For example, one can look at the size of the company in terms of turnover or the number of houses produced. Or it is possible to look at a geographical basis, where the project developer operates, such as the local, regional or national level. Another way to look at the different types of developers is to look at a developer's vertical integration. This classification is based on the multiple phase of project development. Where the 'make or buy' principle can be applied. A requirement to be called a 'project developer' is that a developer is involved in the development phase, so it cannot be outsourced. Furthermore, the soil cannot be made either. But there is a difference between land that was strategically purchased a long time ago and where there was no certainty that development could take place there in the future. And land that has been purchased where it can already be said with certainty that development is allowed there. The first form will be allocated to the 'make' principle and the last form will be allocated to the 'buy' principle. Ultimately, in theory, with the development phase as a fixed factor, eight possible combinations are possible for project developers. However, Buitelaar and Meijer (2022) have empirically concluded that only six of these combinations occur in the Netherlands. The combination developer-builder-investor and developer does not occur in the Netherlands. The table below shows the eight combinations.

Table 1: Vertical integration of real estate developers (Buitelaar & Meijer, 2022)

Type	The land development process			
	Land acquisition	Plan development	Construction	Ownership
1. Developer		■		
2.Land-owning developer	■	■		
3.Integrated land developer	■	■	■	
4.Developer-builder		■	■	
5.Integrated land developer and investor	■	■	■	■
6.Developer-builder-investor		■	■	■
7.Developer-investor		■		■
8.Land-owning developer-investor	■	■		■

4. Methodological framework

This chapter discusses the methods and techniques used for the research. The philosophy of the research will first be discussed, after which it will be explained on the basis of procedural rationality which research strategy has been chosen. Subsequently, both reliability and validity are discussed. Finally, it is described how the data was collected and will be analysed.

4.1 Research Philosophy

Since this research is carried out on the basis of Simon's procedural rationality (1976, 1979, 1990), As mentioned earlier, research on real estate is often approached from the neoclassical theory. Simon (1986, p.211) argues that this economic stream does not have a strong methodological underpinning when it comes to investigating processes where values are central, how certain aspects of reality come to the attention of the decision maker, to examine how a choice situation is formed or how reasoning processes are applied to draw out the consequences of certain representations. To investigate these issues, the answer will have to be found at the micro level through empirical research. Which, according to Simon (1986), even the most sophisticated econometric calculations cannot answer. Therefore, Simon argues that, in order to understand these processes, one has to observe them while they are going on. This approach falls under the relativistic ontology. Reality can be understood in the form of multiple mental constructions. These constructions are social and experiential, and their form and content depend on the individual or group holding this construction. The epistemology for this research concerns subjectivism. The researcher is interactively linked to the research object, so that the findings are created while the research is in progress. The methodology is in line with hermeneutical and dialectical methods, in which the character of social constructions can be elicited and refined through interaction between the researcher and respondents. The ultimate goal is to distil a consensus construct that is better and more refined than previous constructs (Guba & Licoln, 1994).

4.2 Research strategy and method

When it comes to knowledge acquisition, there are three global strategies, namely: induction, deduction and abduction (Vennix, 2016). In induction, we move from the particular to the general; the findings are generalized. Deduction works the other way around here, moving from the general to the particular. Where theories are applied to see if they are correct. Finally, there is abduction which is a way of reasoning by relating the observed phenomenon to other observations. This may be a cause and effect relationship, which is hidden in plain sight. A phenomenon similar to previously experienced and explained situations or in the sense of creating new findings. Of the three lines of reasoning, abduction is the most speculative because the connection of the observed facts and rules is situational (Timmermans & Tavory, 2012). Abduction was chosen for this study. Because the observed phenomena are related to each other in order to arrive at new findings.

The use of old behavioral economics and abduction entails some consequences and therefore a qualitative method, namely semi-structured interviews, will be held. Simon (1986) says this can be done by observing real situations or mimicking situations in the laboratory and questioning the decision maker about beliefs, expectations, and methods of calculation and reasoning. Not only Simon proposes to use a qualitative method, Jackson and Watkins (2011) also do so. They argue, like Simon, that decisions are shaped by perceptions, habits, social and cultural norms, and emotions. And to understand these complex processes, a qualitative method will be the best way to discover, describe and analyse them (2011, p.2326). In addition, Jackson and Watkins (2011) argue that research should rely less on methodological individualism, especially in the neo-classical sense, where the individual is taken as a given, the world is described objectively and a person has infinite computing power. Whereas in the old behavioral economy, a person has limited knowledge and can also apply it to a limited extent (Simon, 1986).

In semi-structured interviews, it is common to use an item list or a manual as a guide. (van Thiel, 2014). Moreover, the use of semi-structured interviews is convenient because the data is collected with several students. It is therefore important that each student asks the same questions in order to keep internal validity and reliability high.

The research method used for this research is semi-structured interviews. In semi-structured interviews it is common to use an item list or manual as a guideline. (van Thiel, 2014). Moreover, the use of semi-structured interviews is useful because the data is collected with several students. It is therefore important that each student asks the same questions to maintain internal validity and reliability.

4.3 Reliability and validity

According to van Thiel (2014, p.48) reliability depends on two things, namely: the accuracy and the consistency. Accuracy specifically concerns the measuring instruments that are used. The variable must be measured as precisely and correctly as possible. Consistency refers to the fact that a study must be repeatable. When a study is repeatable, it increases its reliability. The problem with this research is that the research is based on people. This means that the repeatability of this study is low. Reliability can be increased by increasing the sample size and ensuring that the measuring instrument is correct (van Thiel, 2014).

Besides reliability, validity is very important for good research. There are two types of validity: internal validity and external validity. Internal validity in quantitative research is about credibility (Guba & Lincoln, 1994). Internal validity can be increased by using multiple relevant scientific sources to substantiate and confirm the information that is used. Peer evaluation can also be used, where other researchers reflect on the work. This can lead to new ways of thinking and provide other insights. The interviews conducted in this study will be structurally

examined afterwards, making it possible to think about specific relationships between codes, thus increasing internal validity (van Thiel, 2014).

The last form is external validity. This form of validity is about how well the results can be generalized to the rest of the population or other situations (Korzilius, 2000). Project developers will be interviewed for this research. The external validity of this study will not be high because the respondents are not statistically well represented. Because the research units are not statistically represented, the external validity of this research will not be high either. The main point of this research is also not to generalize the results but, as mentioned earlier, to provide information about the in-depth process in decision-making of a project developer.

4.4 Data collection

The data for this study will be collected through interviews that will be held with project developers. These project developers were sampled through two associations, namely the sector association for home builders, WoningBouwersNL, and the sector association for project developers, NEPROM. Members can be found on the websites of these organizations. Not all members were approached for the interviews because the sector association of home builders also includes companies that only build houses and do not develop them, and the sector association of project developers also includes developers who develop commercial real estate. Because many developers are not affiliated with the aforementioned industry associations, it has also been decided to use the list of 45 largest developers compiled by PropertyNL (Ligtenberg, 2021). Finally, there are a number of developers who suggested other developers during the interviews, who were also approached for an interview. The list of developers can be found in the appendix. Furthermore, there are no specific requirements for what a developer must meet, because the empirical results are mainly intended to provide in-depth insights into complex phenomena and how they work in practice. Ultimately, 112 developers were approached, of which 16 agreed to participate in this study. The percentage is shown in Table 2 below.

Table 2: Response rate

Type	Response	Non-response	Total
Land-owning developer	2, (1,8%)	12, (10,7%)	14
Integrated land developer	3, (3,2%)	17, (15,2%)	20
Developer builder	0	6, (5,4%)	6
Integrated land developer and investor	3, (3,2%)	18 (16,1%)	21
Developer investor	1, (0,9%)	9, (8,0%)	10
Land-owning developer- investor	7, (6,3%)	34, (30,4%)	41
Total	16	94	112

4.5 Data Analysis

After the interviews were conducted, each interview was transcribed, as mentioned earlier. Ultimately, 16 interviews were conducted and transcribed. The interviews were then coded with the ATLAS.ti program. During coding, particular attention was paid to the information and procedures that developers use during the various phases of project development. Therefore, special attention is paid to the acquisition, development phase and the sale/construction phase. Ultimately, 59 different codes were applied. These codes are mainly intended to be used as an index to quickly find and link pieces of information.

4.6 Ethics

This study uses developer information that may be considered confidential. That is why the project developers will be anonymized in this study. This was also agreed with the respondents who participated in this research. Norms and values that are normal when conducting interviews were also used. such as asking whether the respondent is okay with the conversation being recorded.

5. results

This chapter discusses the results of the empirical research conducted. First, a number of general characteristics are discussed. Subsequently, the various phases of project development are discussed. These phases deal with the information and procedures that play a role in making decisions. The cooperation with other parties during these phases is also discussed.

5.1 Developer Features

In this section the general characteristics will be discussed, in order to organize the project developers through their vertical integration strategy. This is done using the previously discussed vertical integration table by Meijer and Buitelaar (2022). After that, a section is devoted to strategic choices developers make. In Table 5 in the appendix, the developers are classified according to their vertical integration and their size. The boundary between large and small is based on 400 homes. This limit of 400 homes concerns approximately the 25 largest developers in the Netherlands who appear in the list of 45 largest developers in the Netherlands. It is hard to tell when a developer is a major party. The choice of 400 is fairly arbitrary in that sense. Developers 10 and 14 are the same company but are different regional offices.

Of the developers interrogated, some are not developers in the first place. These companies usually develop to cater for their own construction production. These building developers therefore sometimes also have a greater construction capacity than development capacity and then also build for other developers, for example. These building developers can be divided into the group integrated land developer and integrated land developer and investor.

Then there is the group that is primarily developers and also other forms of business management. For example, some companies have a department that builds and developers often also own real estate. The largest group of developers surveyed belong to the land-owning developer-investor group. In addition to developing, these companies also invest in real estate. These companies often keep a number of self-developed houses in their own portfolio. There is a developer who does not directly occupy land positions. It actually does this indirectly through an investor's forward fund. This developer does buy land positions, but only if the permit is irrevocable. When the developer owns the land, it immediately passes it on to the investor, so that it does not put a burden on the financial balance.

None of the developers interviewed belong to the developer builder group. This is because all parties own land at some point of development.

Of all these developers, one has land positions in the Netherlands and abroad. This company therefore has international land positions. It should be mentioned here that they have many regional offices and therefore mainly operate regionally. The company states that this is important to keep in touch with local and regional politics. The employee of this company says the following about this: ''*Yes, we have positions and agreements throughout the Netherlands, so it is not really regionally bound, but we are regionally organized. It is not that we move from central Amsterdam, where the head office is, that everything happens there. We have four regional offices and within each regional office we have a development manager who manages a sub-region. To keep in touch with what is going on regionally, you can't keep up with that otherwise. In the political context, every municipality is different and that those tasks are divided''.*

In addition, there are five developers who are nationally oriented. However, it should be noted that these developers often have a core area they focus on, such as a particular city. Most of the interviewed developers are mainly active regionally. One of these developers indicates that they are often active around her network and she has the following to say about this: *"We are active in Brabant, southern Gelderland and northern Limburg. So mainly regional. And local accent. Because it is often around where you are active and have your network and to buy through your network, that is through the municipality or through a private individual."* Of all developers, there is one that operates locally. Although this developer is active in a municipality, compared to the other regional developers it is only quite local in which it operates. This developer, active in the Oss region, says that it is open to, for example, land in the vicinity of Den Bosch, but not much further away, because otherwise they do not know the market and therefore have no feeling for it.

5.2 Strategy developers

This section discusses the strategies developers use. This involves looking at what time frame developers make strategy and what type of strategy they use.

Although project development takes an average of seven years according to developer 14 and Michielsen (2019), companies usually do not look further than five years. The developers surveyed indicate that they will make a strategy in three to five years time. Developer 10 gives the following reason for this: *"About five years off the top of my head. If I look at the strategy. The documents we have had internally in recent years is a about five years. We really want to look at the slightly shorter term and there is also a ten-year forecast. However, the political context and the landscape changes color every time. In the Netherlands, five years is a bit of a timeframe that you can easily oversee."*

The topics covered differ from company to company. Developers 10 and 14, for example, draft a strategy every three years to keep the goals sharp. Furthermore, when it comes to their business operations, they try to look longer, about ten to twenty years. They say that they

differ from other developers in this because they have less time to look ahead. The developer says the following about this: *"A lot of companies simply have financial buffers that force you to switch and make choices every year and every two years and we are a different kind of company and we manage to just 5 10 years ahead."* Indeed, other developers do not look too far ahead. Most developers look between 1.5 and 5 years ahead (3,7,8,9,11 and 12). Only, developer 2 indicates that the strategy in terms of projects they want to look seven years ahead because a project has an average lead time of seven years. But the strategy they want to move towards as a company is three years.

Many companies deal with themes that they think will be important for the future. The developers approach this in different ways. Developer 2 thinks it is important to keep up with hot topics such as sustainability and circular construction. The integrated land developer 7 thinks it is important to look at how things will be built in ten years. He indicates that construction is still mainly done in the traditional way and expects that things will change in the next ten years. He says the following about this: *"We are still quite traditional in building. Building is a traditional affair anyway, it has innovated a lot, but it is always stacking stones and pouring concrete. I think, I believe that in 5 to 10 years we won't be building like we are building now. Not just us, but just building in the Netherlands, say that that is increasingly moving towards prefabrication. In the factory and then at work, we assemble more than actually build to build almost complete houses or parts of houses, so it will all change there, so you have to adjust your strategy accordingly."*

Developer 6 believes it is important to respond to the ever-changing housing needs. The developer wants to comply with this by also developing homes that are intended for single-person households. The developer also says that product innovation and innovative ways of living are of paramount importance to them. For example, this developer has developed a house below the capping limit. The 'capping limit' is a concept from the rent allowance. If your rent is higher than this limit, your rent allowance will be 'capped' or reduced. In this way, tenants have to pay less themselves. This developer also uses smart bio-based materials like cotton for insulation. Developer 5 also indicates that it is looking at the changing housing needs and has also developed a home that is suitable for the ever-shrinking households.

How developers achieve strategic goals also differs. While one respondent builds more on past experience, other interviewees trust more in market analyzes and research (6,10 and 15). There are also a number of companies that use both ways (1,2 and 5). Developer 1 is a company that builds on past successes, looking at what worked well for their company and then applying it again. He gives an example here:

"Back then, we were much more tender-oriented as a company, so the municipalities that write them very often issue tenders, and then you could register for them, then you were one of ten or one of the five parties, who then submitted a bid on the location. Yes, then it was just as if

you had offered the best price or made the best plan, or that you won that location. Then we looked back in the past to see how our success at locations that we have done on a one-to-one basis has been acquired directly at risk. And how is our success at locations that we get from tenders? And then we saw a very clear line in that: that we had much more success from the locations where we were in a one-on-one situation and where we therefore did the acquisition at the front. Then we also said: well, then we will bet much less on tenders and then we will bet on that one-on-one situation, so you see there that we made that change of course conscious, from the past, but that you therefore set up your business better and make it more human-centric."

Developer 12 uses past experience as well as market analysis. He says that he uses the combination to make a kind of plan for the development and says the following about this: *"Yes, the combination isn't there, so yes, of course you look at the market. Look, if you're talking about business strategy that we started with. I am not going to develop in South Limburg in East Groningen either, because I don't know the market there and that is really different in the Netherlands than in the northern Randstad region. So my part of the strategy is to work at all in the market where I know the players and I still know these market relationships. We have to look more specifically and calculate on a case-by-case basis to really get a good feeling about it, so yes, market analysis is part of it. Yes, the rest, they know in experience from well, what do we expect from what about the municipality in the competition, what is the past of the place, you can often deduce something from that. And all that together leads to a kind of planning and plan of attack."*

There are also a number of developers who focus more on market analyzes and research. Developers 6 and 10, for example, give the reason that past successes are no guarantee for the future. Developer 10 indicates that they are very driven by their research department within the company. She believes that they should be at the forefront of spatial planning and development and should therefore not look too much to the past. They look to the future based on research.

5.3 Acquisition phase

This section analyzes the procedures and information used in the acquisition phase. The collaboration with other parties in this phase of project development is also discussed.

5.3.1 Searching for land

In order to develop projects, developers need land. These lands can be obtained in several ways. Firstly, land can be purchased from private individuals. When this is at greenfield sites, the land is usually owned by farmers. It may also be the case that, for example, a former business park is being transformed into housing, where there are several land owners. In this case, several landowners have to be bought out. When land is bought in this way it is called 'cold' acquisition by developers. This is because these lands are not yet intended for

residential use and the developer cannot yet say with full certainty that these lands will ever be changed in use. In addition, the municipality can also be the land owner. When they sell land, this is usually done through tenders. At tenders, developers often have to come up with an offer and an interesting plan to convince the municipality that they can develop the plot of land. Developers also refer to the acquisition of land through tenders as warm acquisition. These grounds already have a residential destination and the developer is sure that development and construction can take place here. In addition, land can also be developed in collaboration with other parties that are already landowners, such as housing associations.

In case of 'cold' acquisition, developers want to purchase land that will be suitable for housing in the future. To find out, they have to come up with some information that shows that a future area is being changed. For greenfield sites this is often agricultural land and for infill locations these are usually old industrial estates. Developers have several ways to get to this information. Developers often look at policy documents made by the municipalities and provinces, which show where the next housing construction will take place. Developer 2 has the following to say about this: *"We look at information from provinces, the information from municipalities. So provinces, for example, indicate space from there in a policy document and we foresee possible expansions or search areas for urban expansion".* This developer also says he is looking at the population and housing monitor. Which is a government tool to see what the increase in, for example, population or the demand for housing is.

Developer 10 also says it looks at information from policy documents. This developer indicates that municipalities never show exact locations in their structural visions in order to prevent speculation. On the basis of the documents from the municipality, this developer prepares its own vision document where housing can possibly take place. Developers 5 and 7 also indicate that they are looking at the boundaries of zoning plans. For example, developer 5 looks at roads on the plan map that lead to a greenfield location. He also indicates that the municipality has also applied its pre-emptive right in this area, which means that he is certain that housing will be built. *"Look at the zoning plan and you see the current district, then there are just two streets that can continue, say, towards the expansion area. Well, that's already a writing on the wall, so to speak. And the municipality has a municipal pre-emptive right law there."*

Developer 11, a smaller developer, indicates that he also looks at other sources of information such as the newspaper: *"Look, sometimes you read a newspaper article that a school is going to merge, just to name a few. Yes, as a developer you also think which school will merge, which building will they use, which building will remain, where is that building located, is that promising? So you can say, if you read the newspaper or the information a little more sharply, you can narrow it down and see if it is interesting, so more from the press angle."*

Some developers also use feeling and experience to determine where housing could possibly be built. They often use the land registry to see who owns the land and what has already been

built in the area. Developer 1 says the following about this: *"It is also possible that tomorrow I will drive past a location somewhere and say well, I think this is very logical that it will be added to the urban area once and then we will go to the Land Registry with the department ourselves. look, who are the owners? Give them a call and see if we can make agreements."*

In addition, a number of developers indicate that they also acquire land positions through their network. These networks are very different. Developer 1 says that land holdings can arise from all kinds of relationships. He says the following: *"Yes, that's really all. That can be completely arbitrary. If your neighbor says 'I know there is still a position there somewhere', we will try to find out the data and then have a conversation with the landowner, but as a rule it is brokers who to sit."* A smaller developer, (11) comes up with a similar example: *"Yes, sometimes things happen on a birthday that you have to respond to. Like I have an aunt with real estate, yes before you know it you are in such a process."* Developer 11 also indicates that projects originate from his business network such as an architect. Developer 5 says that he will also be offered locations via his network. This small developer is the chairman of the business association near him, from which he receives many questions about development. He admits that people nowadays know where to find him when it comes to development. But he also indicates that they still have to search for locations themselves. Developer 14 also states that they get assignments through their network. For example, they are brought into contact with farmers who want to stop through an agricultural broker: *"Brokers, who know where to find us, agricultural brokers who say, "I have a farmer here who wants to stop."* This developer also admits to being approached by municipalities themselves. The reason this developer says is that they can keep it going for a long time. By this, this developer means that they have strong financial strength to be able to realize long-term and complex developments.

Developers, thus, use different ways to gather information about where possible housing construction will take place. The difference between developers is just like developer strategy. Where some developers work systematically to collect information by looking at policy documents and the zoning plan, and thus rely more on analyses. Do other developers rely more on feeling? They go to areas themselves to see if the area can be suitable for housing. Furthermore, developers make use of information that comes from the networks they have.

5.3.2 Purchasing land

When developers think they have the right information, they can take further steps towards actually acquiring the land. Some developers use clear procedures for this, for example they have to take some internal steps to get approval from above. Gathering information is also a procedure in itself. As mentioned before, there is hot and cold acquisition. In tenders, warm acquisition, developers must come up with a plan to convince the municipality that they are allowed to develop the area. Developer 14 has a special tender team for the warm acquisition that takes care of all this. Several developers indicate that they prefer not to do tenders because developers have to invest a lot of time in it and it is not certain that the developer

will get the contract. Developer 3 says the following about this: “In principle, we do relatively little in tenders, because you have to invest a lot in it, set up a lot of capacity and of course there is also a good chance that you will not win them in the end.”

Developer 8 says that they made more use of tenders during the crisis, but now that the economy is better, they want to do more one-on-one acquisition: *“Partly tenders, especially after the crisis and just after. Now we are more cautious with tenders. The alternative works much better, so one-on-one acquisitions happen at a certain point, this is also because the economy is picking up again and then you are less dependent on tenders and then you notice that with tenders it is often that you promise quite well. A lot to win the tenders and often just so much that you just can't get it out and that takes an incredible amount of energy and effort to make the project come true. So that's why we are also more often one-on-one and that this is done via network via brokers or something like that. But that is really decreasing now yes tenders.”*

Developer 2 also indicates that tenders are a significant investment, he mentions the advantages and disadvantages of both warm and cold acquisition: “*The warm has the advantage that there is already a lot available and that you can get started pretty quickly. Certainly, if the municipality sells, then you already have it with you and there are often preconditions, et cetera. The disadvantage of this is that there is a lot of competition, because it is widely distributed in the market. The advantage of acquisition is that you often sit alone at the table with a landowner, then you know your agreements and can create your conditions. The disadvantage of cold acquisitions is that you have a somewhat longer lead time. But often, yes, the returns are higher.”*

The interviews showed that most developers prefer cold acquisition (1,2,3,8,9,15). This can be agricultural land as well as old office buildings. This is probably because a higher return can be achieved with cold acquisition. In addition, there are developers who participate in tenders as well as in cold acquisition (developer 10,12,14). Developer 13 indicates that they only buy land with the certainty that development is allowed.

Three larger developers, 2, 10 and 14, do indicate that they must come up with a good substantiation in order to acquire a land position. They must be able to demonstrate internally that there is a high probability that housing will be built. At developer 2 they have developed a quality manual, which contains all kinds of steps that employees must follow: *“We have a quality manual, so to speak, in that quality manual it is actually agreed for each phase, what we do. So, if we get a new employee with us, they basically refer to that manual in principle and you have to follow all those steps. And the first step is, for example, the purchase. And what are you going to do when you buy something? What things do you want to check? What should you pay attention to? Which agreements do you have to conclude? Which people*

should you bring internally? What approvals do we want from the municipality, for example. So yes, there are a lot of internal procedures involved."

The other major developers (10,14) says when a plot of land is purchased that the land must comply with the strategy that has been drawn up in advance. When a development manager actually comes up with a piece of land, they discuss it extensively: *"their task is in fact to find locations where we can make our products and that meet all the criteria set by the strategy. So they are working on it every day. The moment they come up with an initiative, we will talk about it, if it is seen as promising, then they can continue working with it and that is not a process of a week that often takes two years to look at. from hey. That's an interesting plot, will it come, won't it? Elections are coming. How does the community view it then? Well then that will eventually turn into an actual initiative that we will count on, if it really has a chance. But then there has already been a lot of consultation about it."*

Most developers have a set number of steps before actually purchasing the land. To see whether such land and developments are profitable, developers often use calculation methods. The most common method is the residual land value (developers 2,5,6,7,10,11,12,13,14). The residual land value is the difference between the total income of the real estate to be realized and the costs of the construction of this object. The residual land value is also known as a land value determination. This allows developers to see the maximum amount they can pay for the land. The costs side of the residual land value method include: Tax, total cost of construction and profit for parties involved. The revenue side contains the price of a newly build home. Developers who build themselves have the information about the total cost of construction in-house. Other developers usually use consultants for this. house prices are obtained by developers by comparing the new houses with existing houses in the same category, also known as the comparative method. Another calculation mentioned is the total cost of construction. These costs include all costs involved in the construction of a real estate object. This involves costs such as the purchase of the land, construction and consultancy costs, fees, interest and unforeseen costs. Developers who calculate residual backwards also automatically use the construction costs.

In addition, use is also made of land exploitation, which is a budget to map out land costs and land yields. On the cost side, the following are: purchasing the land, preparing the land for construction, designing public space and overhead costs. The proceeds are the sale of the land ready for construction and any subsidies and contributions. There are three forms of land development, namely: active land development, where the municipality owns the land and prepares it for construction and then sells it. In this form, the municipality can mainly control the costs and revenues of the process. In addition, there is the passive form, where the municipality does not own the land but does incur costs for, for example, preparing the land for construction and the construction of public facilities. A land development calculation is then necessary to recover the costs from the person who ultimately buys the land. Finally,

there is the public-private partnership in which the municipality and the developer each take their responsibilities within a construction project. This involves jointly drawing up a land development in order to have an overview of the costs incurred. This method is the least used because it is mainly a public law instrument to recover the costs from a developer. Developers and municipalities prefer to agree beforehand what a developer should contribute to the land development because this is much faster and saves a lot of hassle (developer 1,6,10,12,14). The difference between land exploitation and the residual land value method is that only the costs and revenues of land are considered and not the construction costs of the property.

Finally, developers 5 and 9 indicate that they work with experience figures. Developer 5, a smaller developer, uses figures from the past to see what he paid per square meter at the time. Then he adjusts the prices because there has been a nice inflation and then comes a price that he wants to pay per square meter. He does indicate that he only does this for smaller pieces of land where it is not necessary to calculate residuals.

Developers want to minimize the risk of purchasing land that will not be used for housing in the future. In order to achieve the highest possible degree of certainty and to keep the risk as small as possible barely all developers inquire with the municipality whether the plot of land they have in mind will actually be residential zone in the future. When a developer goes to the municipality, they usually have a semi-developed plan to inform the municipality. This also shows that the acquisition phase and the development phase often run in parallel. Developer 1 says that they will consult with the municipality both before and after the purchase. The developer says the following about this: *"We have two flavors. We do it either before the acquisition, so we also want to say that to the land owner, we just want to stop by the municipality to let us know and that they know that we are willing to do this acquisition, or immediately after the acquisition depends on the owner's expectation of the position itself."*

Ultimately, the developers will purchase the land. When this is in a greenfield area, this land often belongs to a farmer. Some developers indicate that they visit the farmer themselves or call to ask if they can buy the land. A developer indicates that he also uses brokers to negotiate the price with the farmer. In infill locations, it is often companies or old buildings that are being transformed into housing. At these locations there are often several owners from whom the land has to be purchased. Developer 6 indicates having developed a new strategy when there are multiple landowners. They jointly set up a land cooperative: *"All land owners have their own strategy, you could say, we are going to set up a cooperative together. We have a common interest that homes come here and we as a developer act on behalf of the land owner to see what can be done with the municipality. And that you don't depend on him either, they start with me, because I'm on South and those start on North. But that you say that because of the corporations, we all have an equal interest in housing and starting anywhere. Everyone has an equal return on this and as a land owner you simply remain involved in that development at risk."*

5.3.3 Collaboration during the acquisition

During the acquisition of land, developers work together with various parties. First, the municipality is a party that is often mentioned. As mentioned earlier, the collaboration between the developer and the municipality is based on the fact that the municipality provides information about which areas will eventually become housing. Developer 2 says that they want to buy as little speculative land as possible, they first go to the municipality and says the following about this: *"So we always want a certain, yes, cooperation from the municipality, which the municipality has indicated that yes, we see a housing development at this location happening and that can simply be the written cooperation. This may also be included in a certain housing vision or something similar, but in any case, there is a signal from the municipality that something is really going to happen on those lands."*

Another way developers can collaborate with the municipality is through the building claim model. the developers then submit their land to the municipality. The municipality then prepares the land for construction and sells it back to the developers at competitive prices. However, this only happens if the municipality wants to direct the area by means of an active land policy. The interviews show that not everyone adheres to the building claim model. Developer 2 and 10 get the idea that it is more of the previous years and say about this: *"Yeah, so that we get a building claim, basically that building gets titles. I don't think we do that anymore. Really that is something more from the previous decades, so to speak. Now you see that a little less, so I think we don't have that at the moment, no.*" Developer 10 says the following: "*The old-fashioned building claim is that the municipality has the land but then a party could build, but we don't build, we don't build ourselves. So in that sense we don't talk about a building* claim very quickly." In addition, there are also developers who never have to deal with the *building* claim model because they simply only work on infill locations.

As mentioned before, developers also often work with brokers. This cooperation may be based on brokers offering land to developers as mentioned above. Brokers are also used as intermediaries for the purchase of land. Developer 5 says he usually does the negotiations himself with the landowner. But it may sometimes be the case that certain situations arise where it is not convenient for him to do this himself. He does not cite a specific example. But since it's a small and local developer, he may not want to get too personal.

In addition to brokers and the municipality, developers also work together with investors and investors. This cooperation is often financial. For example, the investors buy the land for or jointly with the developer. After which the developer must develop the land and the investor purchases the houses as an end product and then rents them out. Investors often only offer financial help when it comes to buying land because this is a large investment. They then receive interest and part of the return for this investment.

In addition, developers mention in the interviews that they collaborate with other developers. Several developers indicate that they would rather work together than compete with each other. Most developers who collaborate then talk about risk diversification. But developers are also working together to increase capacity. Developer 2 says the following about this: *"Why we do that is sometimes a bit of risk spreading, hey, that you buy a project that does contain some risk. Well, if you buy that together, you sometimes share that risk just to learn from each other. Hey, that could be them learning from us, or we learning from them, and sometimes capacity too. So yes, suppose we have no capacity for the purchase, but we do have capacity for the elaboration, for example. Then it may be that a collaboration is entered into in which the other party makes more of the purchase and we do more the elaboration"* developer 10 says they also work together in the field of acquisition to ensure that they do not compete with each other, which drives up prices. effect on the land price. This developer says the following: *"We work together with parties, are we what well competitors, developing contractors that we know at a given moment that they are looking in the same area and it is not convenient to fight each other? catch, because then you will only drive up the price. So then we sometimes make an appointment with each other, gosh, maybe we'll leave you alone there, do your thing, say, maybe we can work there in the future if that works out and vice versa."*

5.4 Development phase

This section analyzes the information and procedures that are important for developers to eventually start developing houses. It is also discussed with which parties they work together in this phase of project development.

5.4.1. Information development phase

Plans often do not fit into the current zoning plan and will therefore have to be changed. In order to change the zoning plan, developers will have to go through the zoning plan procedure. The municipality must be willing to cooperate with this, otherwise the plan cannot go ahead. An important procedure is then negotiating a new plan with the municipality. Talking and negotiating with the municipality is often an act that runs parallel to the purchase of the land. During the talks, it is discussed what type of housing should be built. Most developers indicate that they want to sit down with the municipality as soon as possible when they have a specific plan in mind. As mentioned before, a developer wants to know what a municipality thinks about developing certain pieces of land. Developer 2 says the following about this: *"In principle, we always immediately talk to the municipality. So if we buy something or if they make appointments, we go straight to the municipality. Because for the same, the municipality says yes, you can indeed get started right away. Then why should we wait? But it also happens very often that the municipality then says: yes, no, but we don't need that now. And then the choice is ours: yes, do we proceed with the purchase? Hey. So do we maintain the agreements with the landowner or do we stop?"*

Developer 7 indicates that it does not feel like negotiating for him, but more like tuning in with the municipality. This developer indicates that he will go to the municipality with an early plan to let them think about a plan: *"And then make what I just said a drawing, which used to be with pencils and an eraser and nowadays it is digital, but then you try to get a decent interpretation and with that we go to the municipality as talk cards. Listen, we think we can do this here too. Yes, think about it, what do you think? And the municipality often likes it if they can still think along in that phase, so that they can still exert influence on traffic engineering access to urban planning, how high can you go there, how low can you go there? That's a certain housing program that they want in it. So that is not so much negotiating, but more seeking coordination with municipalities on how can we develop that spot."*

The information that is needed for the development of homes mainly comes from the zoning plan, discussions with the municipality and feasibility assessments. These feasibility assessments, take place several times because the development is often a time-consuming process, often many changes take place in the original plan, the uncertainty of price increases and the changing demand on the housing market. Developers need to know whether the plan is still financially viable. They do this by starting to calculate again at certain times. Nearly all developers also regularly do this. Developer 1 calculates, for example, with a land exploitation and on the basis of that document the costs are monitored, as he calls it. He does this for acquisition and development phase to see if everything is going well. Developer 2 also mentions that after various phases, the risk and costs are examined. He says the following about this: *"So the purchase is a phase. Start, development is a phase, start sale is a phase. Start-up construction is a phase and in fact the same elements are reflected in it every time. So there should always be some kind of risk analysis, some kind of financial model, so you set total costs of construction, which also ultimately shows your return."* What kind of financial model this developer uses is not clear. Developer 12 also indicates that they use the total costs of construction. He mainly uses this as a means of steering. He indicates that changes in the development, such as smaller apartments, are immediately reflected in the total costs of construction. This developer also indicates that the further you get in the development process, the more fixed certain aspects of developing become. For example, with a final design of the plan, the number of homes will no longer be adjusted. Developer 14 indicates that their parent company sets certain return requirements and that regular checks must be made to see whether a project is still profitable. This developer does not mention how this is done. However, he does indicate that if certain changes are made to the original document, additional approval must be required from a higher administrative level.

Developer 10 also talks about feasibility and mainly talks about return and risk. This developer mentions a number of things to increase feasibility: *"How do you minimize that risk? Surely that is by being very careful on your yield side and making some leeway with your building costs in case the prices rise. And don't count yourself rich on all sides, because then the risk is small that you will eventually run into loss. At the same time, we often do tenders. If you're*

very careful with all parameters, you'll have the lowest land bid and you won't win. So, you also have to be a bit opportunistic every now and then and count it all in favor. So, in short, no certainty. Above all, it is very important to make sure that you don't get too rich up front and build in some slack and manage all risks well during the process. Go into the area with the group so that you do not get delayed by local residents or at least have as little as possible and some good agreements with the municipality." Developer 11 also indicates that he will go into the neighborhood himself to see how residents feel about a development in their neighborhood. The municipality usually already wants to cooperate in this, but will not take any action itself to see how the neighborhood views it: "*Most municipalities then say go first but check in the neighborhood, right now they don't want to do too much more themselves That is more, we facilitate, but we do nothing else. So, then we also have to make a round in the neighborhood to see how people feel about it. Well, if all those signals are green, then you could have a promising project. What we often do is before we start that round, so make an appointment with all those owners. Well, suppose it works, then we are the party that will do it."*

A developer also needs information for the housing plan. This is a plan in which agreements are made about spatial quality, sustainability, parking, social rent and medium-price rent. These appointments are usually discussed anteriorly. This is usually not determined in advance and is often still negotiated with the municipality. A developer must think carefully about what kind of homes he wants to put on the market in 2-3 years, because the market may change and the home that was developed at the time is no longer marketable. Developer 7 gives an example here that a fellow developer had developed a standard semidetached house and a life-resistant semidetached with approximately the same dimensions. In the end it turned out that he had no customers for the standard two-hairdresser, but many for the life-resistant homes. Because they were almost the same homes, he was still able to switch in the housing program. This developer indicates that a number of considerations must always be made, such as the type of house, for example, how many detached houses and how many two-person houses should be included in a plan.

The zoning plan states what is and is not allowed in certain places. The zoning plan will often have to be adjusted for new housing construction. The current destinations, usually agricultural land or business parks, must then be adapted to the residential use. A number of requirements are involved for these zoning changes. For example, developer 13 says to do a quick scan to see what is needed for that particular destination change. This developer says the following about this: *"To map out what, well, what possible investigations will all be needed in the context of changing the zoning plan in order to already have a picture of what is going on at this location, huh? So there are Natura 2000 problems here, there are nuisance circles that might throw a spanner in the works. What about the flora and fauna? In Leiden, for example, we also have to conduct an explosives investigation because a Second World War was bombed there on the site where we are going to build."*

Conducting soil investigations is a permanent matter for a developer or a municipality. It examines whether there are archaeological structures in the soil and research is carried out into the flora and fauna. Not all developers mention this during the interviews, but it can be assumed that they do this as it is required by law.

5.4.2. Cooperation development phase

The municipality is a large party with which developers work together. However, when asked who they work with during this phase of project development, the municipality is rarely mentioned. Apparently, developers do not really see working with the municipality as collaboration. A large developer, developer 14 does indicate that it is working with several public authorities to include the environment as well as possible: “That is also on our to-do list much more intensively than in the past, so how do you include the environment? Yes, how do you properly involve stakeholders? So increasingly, certainly in North Holland, so in many Randstad regions, provinces are also becoming important parties. Water boards increasingly important, Staatsbosbeheer, those kinds of organizations”. The collaborating parties that developers often refer to are advisors. Consultants such as architects for the design of houses, structural engineers for the constructional part. Another party that is also mentioned are contractors or builders. These often advise developers on construction costs.

The most frequently mentioned party with which developers collaborate during the development phase are other developers. They can do this to spread the risk, just like in the acquisition phase, or to complement each other in order to increase capacity. One developer says the following about this: *“I'm not going to hire more people so I have a certain capacity. But the other developer does have the capacity, for example, and in that sense, you are complementary to each other. We always go fifty-fifty in. But that's what the other developer does, say the work, the do the work, the development work and we are more in it to monitor the finances and to contribute money, aren't we? So, in that sense we are complementary to each other, but sometimes we step in together to also share the risks, so not just the return. But that we think well, you know it is a very large project, let's do this together, so that to spread your risks as well."*

Developer 15 also mentions sometimes working together on large projects: *“Yes, we do that too. This is often based on size, if a project becomes very large, you will see that you will do projects together. Sometimes you also see that if you have a project with a fairly opaque construction assignment, it is useful to bring a developing contract on board. Then you do it together, but you're better off with building. Internally it is stronger. You often see that you are asked by a party that has no experience itself, who has been given a position. They then look for a partner in the development.”*

Developer 13, a small developer, states that he regularly serves as an independent project director. He then arranges the cooperation between the parties. These parties are often developers. He indicates that he does not work specifically for one party, but usually for two or more developers who work together and then want an independent party to manage things. "This is also necessary, says this developer, because otherwise they will be discussing things at the table and looking at each other like: 'we do things like this, and they do things like that'. Then it is handy that there is an independent party with who does not take sides"

When several developers work in the same area, developer 7 does not so much call this cooperation, but coordination with other developers and the municipality. The developer explains how this works: "*It's not so much cooperation, more as seeking coordination. For the northeast corner, there are again five or six developers sitting around the table with the municipality. They have submitted all those lands to the municipality. The northeast corner is then the last fourth quadrant of the Groote Wielen, so to speak. 3000 homes will be built I believe. There we are now in this phase with all developers and the municipality to hear from the municipality, how they view the development and the municipality gets information from the developer about how do you see this? How do you see that? And then you work together or you actually agree on that, well what does that mean? What kind of houses should we build there? It is also about the type of energy generation, say, are we going to use ground sources, say, or are we going with aquathermal energy? So, do we get the heat from surface water? You coordinate things like that in the main line together and soon they will become normal. Within the area that is being developed, a place will be allocated to us and to Heijmans and van Wanrooij all again in proportion to what I just said divided again and then each takes his own plot and everyone does his own thing.*"

Developer 14 indicates that they do not like to work with every developer. But when several developers work in the same area, the government can force it to work together to make a plan for an area. This developer says the following about this: *"We do have some developers that we have very good relationships with, but we also have a few with what we know about, you are just a rascal and are walking around you. That's a bit of knowing who your peers and your competitors are. And yes, with some parties you simply work better together than with others, that's just the way it is. But there too it is always a trade-off. And sometimes it may even be that the government forces you to work together. Okay, you also see that in a number of places that you are in the same area next to each other. And that the government says yes guys, make a plan together. That can sometimes be very difficult."*

5.5 Sale and construction phase

This section analyzes the information and procedures that are important for the sale. The build itself will be discussed in less detail because not every developer builds themselves.

5.5.1 information sales and procedures sales and start of construction

When it comes to the information developers need during the sale, it's mostly about determining home prices. Nearly all developers indicate that they use the advice of local brokers. These brokers then provide an estimate of what such a home should yield. If a developer finds the price too low, he can raise the price himself. Developer 3 says the following about this: *"Eventually we ask for advice and a broker and usually we find that advice too low and then we increase that price."* Developer 2 also uses the advice of brokers and also looks at the market itself. When looking at the market, this developer compares the homes he is going to put on the market with other homes that have already been sold or are for sale. It also often happened with this broker that they set a price higher than the advice of the brokers: *"Well, in combination with the broker, so we often request advice, usually per project, two different brokers and then we also look. We still have to go to the market and we often add a bit more if we think well, I think it could take a little more, especially in recent years."* Developers 1 and 5 also indicate that they occasionally set the price higher than the broker's advice.

In addition to real estate agents, some larger developers use market research to determine house prices. Developer 14 indicates that it also has a research department that conducts research into what a home should yield: *"Our sales people do that. They do this on the basis of market research, which we actually carry out continuously. We also have a Research department within our company that researches the market, basically at any time in areas, so that we know well at every means yes what does each type of property yield? What can it bring?" developer 1 indicates that the market research they conduct is mainly based on the use of Funda: "We do a lot of research ourselves and that is usually really Funda based, and we also do research with local brokers."*

In addition, developers 1 and 14 also indicate that they determine prices based on experience and existing data. These developers indicate that they have a considerable database of projects that they can then look at. One developer says the following about this: *"Well, we have quite a database with data with projects that we have run and then you also see how it went."* The other developer says they not only have a large database but also rely on the knowledge of their employees: *"But it's also just in the minds of colleagues. At least within our region, I may say. We have many colleagues who have been working for this company for years who have made many plans. We have also done this, there we have done that. There we see this happening, that is also very much in your head. And try everything we've done, try to store it in data that we can go back to and also look forward to data. But it also has to do with*

professional knowledge and people with long-term employment within such a branch who can fall back on the results of the past."

Most developers indicate that they will start construction when 70% of the homes have been sold. They start at this percentage because this is a requirement of a housing deposit. This is an organization that provides certainty that homes will be completed even if the contractor goes bankrupt. When the 70% has been sold, the housing deposit has enough security to cover any bankruptcies. Furthermore, it is quite common for projects to be phased. Phasing projects means that usually large area developments are completed and developed in phases. The interviews showed that nearly all developers practice phasing. The reasons why they do this differ per developer. But most indicate that they are phasing housing projects due to the absorption capacity of the market. By this they mean not wanting to negatively influence the market from the developer's perspective. When a developer puts too many houses on the market, this can affect the price and therefore the developer can simply make less profit. Developer 6 also states that they are phasing because of the take-up capacity, saying the following: *"The main reason is the take-up capacity of the market. Can sometimes also be a reason for construction capacity, but usually it is absorption capacity of the market."* Developer 16 also mentions several reasons for phasing, but does indicate that market capacity is the most important: *"We do this to spread out, you can't drop all the supply at once, that's not convenient. It varies by category. Often it is based on the construction flow. You agree with the contractor and the contractor has his reasons for tackling some things separately, this can be because of material or personnel. But the most important consideration is the market. The market adaptation is really leading."*

Developer 9 has a project in Amsterdam and says that in cities such as Amsterdam there should not be phasing per se. In this project, however, it was necessary because it was not physically possible: *"We have retained a phased step in three parts of the plan in Amsterdam East. But we actually do that more because it was physically not possible otherwise. As you will notice, for example, as in Amsterdam that phased can actually be faster and therefore actually deliver faster and can bring to market faster. I have to say in general we try to keep that speed as high as possible so I think phases in that actually already not."* Another developer also mentions the market capacity, but also indicates that the municipality wants to do a plan in phases. And the reason is also that you do not want to have too many homes for sale in the same area. Usually it also works better with 30-40 homes on the market instead of 300. Developer 7 says that it is phasing because the market is constantly changing. He says that it is not useful to already record a housing type if it is only completed in 7 years. Developer 8 also indicates that it phases to be able to do as many projects as possible. He says he can't start with everything at once because that costs too much money.

5.5.2 Collaboration

When developers want to sell projects they will have to make this known. Many developers do this in collaboration with brokers, through their own website, social media and in newspapers. Developer 7 says the following about this: *"We also have discussions with real estate agents from the place where we are going to develop and build. Via social media, our own social media, but we also have two ladies here at communication. But when a project is really coming up, we hire an advertising agency and they will work with us to produce brochures, often digitally. Things are brought to the attention via Facebook, via Instagram, via social media. Yes, and also through the old-fashioned advertisements in the newspapers, but that is less and less."*

A smaller developer, developer 5 also indicates that he himself promotes his plans, this he does from the point of view of being less dependent on brokers. This developer also indicates that he hires people for this: *"We have a website and we have some social media, so yes, it is also fairly limited, but we are working on it more. We always do that when there is a new plan and put it on social media that it is coming. Usually helps well and the brokers who do exactly the same. They are a little more passionate about this because of course they always promote the homes via social media and their website. But we also do that ourselves. I think that's important myself. That we are not dependent on a broker. We have a choice of several, but we also have to be able to promote it ourselves, but we don't have an entire department with marketing people or something, we just hire people for that."*

6. Conclusion, recommendation and critical reflection.

This chapter provides an answer to the main question based on the results. In addition, a recommendation is made for possible further research. Finally, there is a critical reflection on this research.

6.1 Conclusion

This study focuses on project developers in the Netherlands. The main question posed at the beginning of this research is: "How do developers make choices in different phases of project development? And do these choices influence the speed with which projects are delivered?" To answer this question, we look at the information and procedures that influence these decisions that take place in multiple phases of project development. The decisions that the project developer takes in the acquisition phase mainly concern the acquisition of land. Developers indicate that they have two choices here, namely warm and cold acquisition. When developers decide to do warm acquisition, they mainly mean tenders. These tenders are then from the municipality, where developers can register and present a plan. One reason for a developer to participate in a tender is that the financial risks are smaller than with cold acquisition. This is because they have certainty that they are allowed to build and the municipality also wants to cooperate. If developers opt for cold acquisition, they will have to acquire land themselves, these are mostly agricultural lands. To acquire such land, a developer needs information about where housing could be built. Developers get this information from multiple sources. Sources such as the municipality where the information comes from visions, policy notes and the zoning plan. Some of the surveyed developers also indicate that they use their feelings and experience to determine where possible housing could take place. Some developers also indicated that they are offered land from their network. This network is less important in the Netherlands than in the United Kingdom (Adams et al., 2011). In the United Kingdom, land is not openly marketed. In the Netherlands it is still quite possible to obtain land via other means, such as tenders. The main reason why developers opt for cold acquisition is because it often yields a higher return.

A procedure as well as information that are important in the acquisition phase is to see whether a piece of land is profitable to develop. Most developers do this by using certain methods and calculations. Nearly all developers indicate that they opt for the residual approach. Based on this method, developers calculate what they want to spend on land. For a number of larger developers, an additional procedure is that they must be able to substantiate properly in order to purchase a piece of land. In addition, developers want certainty that they are actually buying land that will later be used as housing. Developers do this by contacting the municipalities before buying to inquire whether certain lands are also regarded by the municipality as future housing locations.

In the acquisition phase, developers also decide to collaborate with other developers from time to time. When developers make this decision, they may be helping each other spread

risk, increase capacity, or not out-compete each other. The latter in particular can have an effect on the market.

The decisions that are taken in the development phase again have to do with financial feasibility. This information comes from the calculations that are also applied in the acquisition phase and from the negotiations with the municipality. In the development phase, most developers mainly use the total cost of construction. This allows developers to look at the costs associated with different types of homes. The information resulting from the negotiations and discussions with the municipality often influences the financial feasibility, because when a municipality sets certain quality requirements or sets a percentage for social rent, this is often at the expense of the financial feasibility. This is because smaller houses are often less profitable than houses in a more expensive segment.

When a developer is going to sell houses and build houses they often decide to do this in phases. According to developers, this phasing of sales and construction has several reasons: construction capacity, cash flow, responding to a changing market and the absorption capacity of the market. The absorption capacity of the market is a reason for many developers to deliver housing projects in phases. The new housing market is a submarket and if a developer puts too many houses on the market in a certain area, the supply can change to such an extent that this affects the price. It can be concluded that the price of the house influences the speed of project development. Adams et al. (2009) also confirm this in their study. Developers want the best price for their product. The price for the product determines the rate of production. By delivering projects in phases, developers are more assured that they can get a good price. Responding to changing market demand can also influence the speed of projects. A developer can mean by this that the demand for certain types of houses for example semidetached houses, but also the demand for houses in general. When there is a high market demand for houses in general, it is beneficial for developers. Higher demand on the housing market has an upward effect on prices. Developers can then get better prices for the same product. In recent years and at the moment there is still a high demand for housing, which is therefore favourable for developers. From an economic point of view, it can then be argued that phasing is rational. After all, if a developer does a plan in two phases, for example, and the forecasts are that house prices will continue to rise, he can generate more turnover if he brings the second phase to the market later. Phasing has become a rule of thumb for many developers in that sense. However, research by Ott et al. (2011), who applied Titman's (1985) options model to phasing, has shown that both full development and phased development can be optimal with fully rational choices. Using the rule of thumb to phase almost every project can then be seen as irrational because in not all cases it is optimal. The use of such rules of thumb is, according to old behavioral economics, a consequence of bounded rationality. As a result, the cognitive limitations of the person influence the optimal choice. Most likely there are developments in the Netherlands that are being phased where it is not really necessary. These

decisions to phase unnecessarily mean that some projects take longer than is actually necessary.

6.2 recommendation

Based on the results of this study it is possible to make suggestions for further research. This study showed that phasing housing projects can have a delaying effect. However, it is difficult to say how large that delay is. For example, a quantitative follow-up study can be conducted into the effects of phasing on the duration of project development. With such research, a concrete answer can be given to the extent of the influence of phasing on the speed at which projects are delivered. In addition, a quantitative study can be carried out to see when it is optimal to phase projects in the Netherlands. Such studies can help to better expose the delay problems in housing construction.

The research that took place here was during a boom period. Due to these favorable economic times, developers do not wait with certain phases because the market is very favorable at the moment. A follow-up study during times of economic downturn may reveal how developers deal with phasing in worse economic times.

In the interviews, it often emerges that developers try to avoid risk as much as possible. Risk aversion is a theory that is also a belongs to behavioral economics. A follow-up study from this perspective may reveal how risk aversion affects project development.

During the research it emerged that developers regularly cooperate in certain areas and projects. This cooperation reduces competition in the market and gives certain parties more market power. It cannot be said with certainty whether the choice to cooperate has an influence on the speed at which projects are realized. A follow-up study could be how this collaboration can influence the market and whether this has an effect on the speed at which developments are realized.

6.3 Critical reflection

The research conducted here was done jointly with two fellow students. Although it was advantageous for data collection to conduct interviews with three people to arrive at a larger data set faster, it was quite difficult to incorporate multiple surveys into a questionnaire. The studies of fellow students differed very much in some areas, leading to questions that were not relevant in this study. If only one study was covered in the questionnaire, more depth could have taken place in the interviews.

Moreover, the questionnaire that was used was changed several times. These changes were necessary because after the first interviews, it appeared that some questions were not well formulated or that interviews were inadequate in terms of structure or content. Because

these changes were made, there are a number of interviews with different content and structure. This reduces the reliability and validity of the study.

Interviewing developers on topics like latency can be touchy. It was difficult to formulate questions in such a way that enough information came out of the interviews, but that developers would not feel offended and wanted to share the correct information. Not being able to directly ask whether developers make certain choices can therefore affect validity.

The aim was to survey 10 developers per researcher, which did not succeed. Although many developers were approached by mail, too few attempts were made to reach developers in other ways. Reaching developers by phone was also done a lot which turned out to be much more effective, only then no concrete appointment to schedule an interview came out of it. In doing so, more respondents would probably have been obtained if more follow-up calls were made to make clear concrete appointments.

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8. Appendices

8.1 interview questions

General questions

- How many homes do you deliver per year? -> Is this the same every year? Why?
- Where are the main holdings located? Local, regional or national?
- How many current projects are you working on?
- Are there projects longer than 24 months in your portfolio that already have a permit to start? What is the reason for these delays?
- Do you have pieces of land on which a building claim rests? Are you on track with these projects?
- What is the focus of your company? Investor, Developer and/or Builder?

Business strategy

- What is the timeframe in which the strategy is made?
- What topics do you cover in the strategy?
- Is land strategically purchased for later?
- How long is planning ahead? Is there a schedule for when which project will start?
- How do you deal with homes in the social sale that are worth more than the specified amounts?
- Is your business investment strategy based more on past success or more on market analysis and research?
- Looking at the past, are risky or innovative strategies adopted?
- How is the risk of an investment strategy examined before it is proposed?

Local market

- Is it more cooperation or more competition if development takes place in the same plan?
- Does anything change in the plan if several parties are active in the market?
- Are other developers involved in the same project? Is this cooperation or competition?
- How do you make use of economies of scale?
- How do you deal with rising housing prices? Who benefits from the increase in value

Phases

	General questions	Specific questions
Acquisition	how do you decide to purchase (acquisition)?	● What are the procedures? ● What information is used? ● Do you use certain calculations to determine the maximum land acquisition costs? ● Is the increase in the value of land positions considered at the time of the choice for development?

		● To what extent are land positions resold? What is usually the reason for this? Is this a strategic choice?
	Which parties do you work with and how?	● What type of companies are they? Does that vary by region? ● What does this collaboration look like? ● What is the role of external financiers in a project?
	Where are the bottlenecks and obstacles?	
Project/plan preparation:	How do you decide on a preparation plan?	● What are the procedures? ● What information is used? ● How is it determined when it is time to start negotiations with the municipality?
	Which parties do you work with and how?	● What type of companies are they? Does that vary by region? ● What does this collaboration look like?
	Where are the bottlenecks and obstacles?	● What is the role of the city council in project planning? ● How can you be sure that construction can start on a site? Think of (ecological) studies.
Sale/Construction	How do you decide to put the project on sale and start construction (for work part plan)?	● How do you publicize your project and through whom? ● What are the procedures? ● What information is used? ● How can you be sure that the development will be profitable in the end? ● How is the price of a new home determined? ● How is oversupply of housing on the market dealt with and how is this determined? ● Do you use phasing in housing projects? If so, what are the reasons for this? ● Do you adjust projects in the meantime? What happens to the construction speed if sales are disappointing?
	Which parties do you work with and how?	● What type of companies are they? Does that vary by region?

		● What does this collaboration look like? ● What is the role of external financiers in a project?
	Where are the bottlenecks and obstacles?	● ● There is a shortage of personnel. What is the influence of the shortage on the labor market on current projects? Does this cause delays? ● ● There is a scarcity of material. Prices are rising. How does this affect the build speed? What is the impact on current projects? ● ● Has the quality of housing improved in recent years? ● ● How do you deal with homes in the social sale that are worth more than the specified amounts?

8.2 Tables

Table 3: Sampling Frame

	Developer	WoningBouwers.nl	Neprom	PropertyNL	Via
1.	5 Bunnik bouw	x			
2.	3 W realestate		x		
3.	Aalberts ontwikkeling		x		
4.	ABB		x	x	
5.	Altera vastgoed			x	
6.	AM			x	
7.	Amvest			x	
8.	BAM wonen	x	x	x	
9.	Bakkers Hommen		x		
10.	Being			x	
11.	Bemog		x	x	
12.	Bijont	x			
13.	BM van Houwelingen	x			
14.	Blauwhoed		x		
15.	Boer Projectontwikkeling	x			
16.	Boelens de Gruyter Ontwikkeling				
17.	BPD	x	x	x	
18.	BV P.O.G.	x			
19.	BVH ontwikkeling				x
20.	BVR Groep	x			
21.	Canopy Investments			x	
22.	Certitudo			x	

23.	BUN Projectontwikkeling					
24.	De Alliantie Ontwikkeling			x		
25.	De Langen & Van Den Berg		x			
26.	De Realisatie			x		
27.	De Vries en Verburg groep				x	
28.	DID vastgoedontwikkeling			x		
29.	DuPon					x
30.	Dura Vermeer			x	x	
31.	Duurzaam wonen		x			
32.	Gebroeders Blokland		x			
33.	Geveke		x			
34.	Grehamer & company				x	
35.	HD groep		x			
36.	Heembouw				x	
37.	Hegeman		x			
38.	Heijmans			x	x	
39.	Heijwaal		x			
40.	Hendriks					
41.	Hendriks Coppelmans	x			x	
42.	Herkon	x				
43.	Heutkink					
44.	Hoedemakers	x				
45.	Houta	x				
46.	Hurks			x	x	
47.	Jan Oosterhout	x				
48.	Janssen de Jong	x		x	x	
49.	Jebber			x		
50.	Katwijkse ontwikkelingsmaatschappij	x				
51.	Kalliste Woningbouwontwikkeling			x		
52.	KBwonen	x				
53.	Keizersberg Vastgoed					x
54.	Kelderman groep	x				
55.	Kikx			x		
56.	Klaassen groep				x	
57.	Klok groep	x			x	
58.	KPO planontwikkeling	x				
59.	Kroon	x				
60.	Kuiper Arnhem	x		x		
61.	Leyten				x	
62.	Lingotto			x	x	
63.	Maarsen Groep					
64.	De Maese				x	
65.	MJ de Nijs en zn				x	

66.	MRP Development						x
67.	NBU	x					
68.	Nijhuis	x					x
69.	Ouwehand bouwgroep	x					
70.	Plegt-Vos bouwgroep	x					x
71.	Provast						x
72.	Pr8ontwikkeling	x					
73.	Reuvers projectontwikkeling	x					
74.	Roelofs en Haase	x					
75.	Roelofs	x					
76.	SBB	x					
77.	Scholtens	x					
78.	Slokker vastgoed	x					x
79.	Snippe						
80.	Stebru				x		x
81.	Sustay						x
82.	Swentibold projectontwikkeling						x
83.	Ter Steege	x					x
84.	Thunnissen	x					
85.	Timpaan	x					
86.	Trebbe	x					x
87.	UBA	x					
88.	Van Arnhem	x					
89.	Van Bekkum	x					
90.	Van den Bruele	x					
91.	Van Daalen	x					
92.	Van Rhijn Groep	x					
93.	Van der Steeg	x					
94.	Van Mierlo						
95.	Van Oostrum	x					
96.	Van Rhijn groep	x					
97.	Van Roey	x					
98.	Van Stiphout	x					
99.	Van Wanrooij						x
100.	van Wijnen	x			x		x
101.	Van Wonen	x			x		x
102.	VBM Ontwikkeling	x					x
103.	Vergeer Planontwikkeling	x					
104.	VolkersWessels	x			x		x
105.	Vorm			x		x	
106.	Vosplan	x					
107.	Waaijer Projectrealisatie			x			
108.	Waal			x			
109.	Wilgenrijk	x					

110.	Wonen à la carte	x	
111	Zeemanvastgoed		x
112	Zwanenburg projecten	x	

List of developers approached, Source: Woningbouwers.nl, NEPROM, PropertyNL

Table 4: Numbered respondent list

Developer	Number
ABB	1
Janssen de Jong	2
Stebru	3
Keizersberg vastgoed	4
BVH Ontwikkeling	5
Hendriks Coppelmans	6
Hoedemakers	7
Lingotto	8
Borghese	9
BPD regio Noord-Oost en Midden	10
Dupon	11
De Nijs	12
Sustay	13
BPD regio Noord-West	14
Leyten	15
VolkersWessels	16

Table 5: Developers according to size and vertical integration

Type	Small <400 houses built	Big >400 houses built	Total
Land-owning developer	2	-	2
Integrated land developer	3	-	3
Developer builder	-	-	
Integrated land developer and investor	-	3	3
Developer investor	-	1	1
Land-owning developer- investor	3	4	7
Total	8	8	16