

Land Banking Taxed with a land tax



Colophon

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Abstract

Stalled sites are a problem in the Dutch housing market. A substantial number of land positions with planning permission have been stalled by landowners and developers for strategic purposes. This is partly due to developers' use of land banking practices, which commonly benefit from local market power and land market speculation. The adoption of strategies such as land banking by developers indicates that there is developer behaviour (corporate strategy) involved in the decision to use land as an investment vehicle to ensure future profit or future construction capacity for in-house construction firms.

This study aims to discover what exactly leads developers to adopt this strategy for stalling developments and what the influence of a potential land tax might be on perceived land banking practices for land positions with planning permission. It is thought that increasing the cost for holding a development will lead developers to instead choose to develop the site. This should therefore reduce the number of stalled sites and hard plan capacity nationwide and encourage the efficient use of land to solve part of the current housing crisis.

To accomplish this study's goal, 14 Dutch developers were interviewed. The interview transcripts were analysed qualitatively and through content analysis. This thesis is explanatory and deductive in design, as this best fit the hypothesis. The study found that developers do use land banking strategies throughout different stages of developing land for housing. A land tax might have an influence on land banking practices because it will lead to an increase in the holding costs of stalled sites. However, it is important for the policy measure to be all-encompassing of the different stages of development, from acquisition to completion of development. Furthermore, the study found that if the measure is introduced and implemented only in the final part of the development process, developers are likely to evade the tax by delaying the project at other stages to ensure that the development complies with the agenda of the developer rather than that of the planning agencies. Overall, a land tax might shorten the development processes (due to lower land banking occurrences), as it was found that developers will price in the risk of paying the tax and act on the priced factor if it became too high to practice land banking.

Preface

Leading up to the process of writing the master thesis that you currently see in front of you, I got fascinated by how wicked the Dutch housing problem is. During the programme it is this fascination that led to a willingness to contribute in solving the problem through the writing of my thesis. Especially lectures given by Erwin van der Krabben during that period shaped that willingness to contribute scientifically to the subject that the thesis eventually is about.

For me it was difficult to use the resources that I had at my disposal to tackle a immense problem that is the Dutch housing crisis. That was therefore the biggest challenge in the process of conducting this research. Next to that, it is a very sensitive subject for all respondents involved. I learned a lot about how to improve my interview skills and research ethics while obtaining the data for the study.

I would like give a special thanks to my supervisor Ary Samsura who always gave good council and really helped shape this research to the way it is today. Secondly, I would like to thank my boyfriend, close friends and family for always supporting me during the process. A thesis is not always a project which feels to have an end. But with their continuous support, that end sometimes did not feel that far anymore. Lastly, I would like to thank my co-students Milan Oomkens and Hugo van Peer for their effort and partake in collecting the data.

I hope you enjoy reading the thesis.

Jacco ter Horst

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Chapter 1 Introduction

1.1 Contextual background

Urban planning departments in the Netherlands are currently struggling to keep capacity and resources matched with society's demands to develop the urban landscape (Kerstens, Nauta & Stok, 2020). Some planning departments have even ceased accepting applications for new developments due to a lack of time and resources for these projects. All of this has compounded the already existing problems faced by Dutch urban planning, including an energy crisis caused by the Ukraine war, the necessity of an energy transition towards renewables, the need for spatial adaptation due to extreme weather, a pandemic that we have still not fully recovered from and a housing crisis at its most critical point in decades.

One of the most wicked and significant problems faced by the Netherlands today is the housing crisis. The crisis has existed for years and is currently at a new peak, with housing prices expected to continue rising until 2030, making it a significant societal problem to which the country has yet to find an answer (BZK, 2021). The rate at which houses are being built in the Netherlands does not match the demand, and this will only worsen in the coming years. The Ministry of Domestic Affairs estimates that the demand for housing will continue to sharply increase until 2024 (Groenemeijer et al., 2021). International financial markets and the Dutch economy have fully recovered from the COVID-19 crisis (DNB, 2021). However, while this recovery has enabled the land and housing markets to recover, production levels have yet to return to pre-pandemic levels. Additionally, compared to other markets, the housing market is still not where it should be in regards to supply, as it remains strongly overheated (DNB, 2021). On a national level, this translates to long waiting lists for social housing due to house prices that are too high, especially for starters. This means that there is a necessity to investigate policy solutions to make the housing market more efficient and get housing production running again to ensure that supply meets demand. One solution might be to encourage developers to build rather than waiting for better margins for their investments. This practice of delaying developments for higher profit is called land banking. The total plan capacity (with and without planning approval) in the Netherlands meets the demand for housing until 2030 by 136% (BZK, 2021). As such, it would be beneficial to focus on creating an incentive on the policy level to get projects with planning permission to be built, as this should directly increase the housing supply.

The fact that landowners use land banking to speculate on a higher profit by waiting to develop a site is broadly acknowledged in literature (Razhak et al., 2018; Adams, Leisman & Moore, 2009). Land banking can be seen as a process in which landowners obtain a relatively large portion of land available in a region (White, 1986). In this way, the developers who own the land can build in phases to ensure future profits, and in some cases, they can even influence the local land prices directly, especially when the owners become the most dominant suppliers of housing in the region due to their land banking activities.

1.2 Problem statement

Currently, there is little literature on developer behaviour and its influence on the land and housing markets through the use of land banking. As such, this research will focus on this gap. According to Van der Krabben (2021), one alternative instrument that might influence land banking practices is the land tax. This is a tax based on ownership of land instead of the real estate that is on there. In this context, the land tax is aimed specifically at developers having received planning permission. A land tax encourages landowners to efficiently use their land, as the cost to hold the site will increase after having received planning permission. The land tax could therefore create an incentive for developers to start and finish a development as soon as possible. This research will shed

light on the effects of a potential land tax on developer behaviour, with a specific focus on land banking practices. Developer behaviour is influenced by both priced and non-priced factors (Antwi & Hennebery, 1995). Priced factors are direct monetary changes due to the implementation of the land tax, such as changes to the cost of holding undeveloped land or changes in land prices. In comparison, non-priced factors, such as risk aversion and individualized habit persistence, are less predictable (Antwi & Hennebery, 1995). Based on these distinctions, this thesis will study the impact of a land tax on the perception of developers with regard to the land tax as proposed by this study. By doing so, the aim is to generalise findings into how developers would react to a land tax if implemented in real life.

1.3 Research aim and questions

The goal of this research is to distinguish changing developer strategy (behaviour) in regard to land banking due to their perceptions of a potential land tax. Patterns of change in developer behaviour may provide insight into alternative strategies for dealing with delays in the housing development process caused by land banking practices. In short, the aim is to identify and describe potential changes in the perception and decisions of developers regarding the practice of land banking as a result of the implementation of a land tax. Based on this objective, the main research question of this study is as follows:

What influence does developers' perception of the land tax have on land banking practices related to housing development in the Netherlands?

Several sub-questions were formulated to help answer the main research question. These sub-questions are as follows:

- What is the influence of a perceived land tax on perceived company strategy based on priced factors?
- What is the influence of a perceived land tax on perceived company strategy based on non-priced factors?
- What are the effects of priced and non-priced factored perceptions on developers' strategies of land banking?
- What is the effect of perceived developer strategy under a land tax on housing production?

The main question reflects the hypothesis that the perception of a land tax implementation would influence the practice of land banking based on developer behaviour. To help answer this main question, a set of four sub-questions are distinguished. Because this research examines the perceived land tax and perceived new behaviour, the sub-questions are adapted to the applicable perceptions of developers included in the research. Together, the four sub-questions answer the main question in regard to how likely and vast the supposed relation is between the land tax and the land banking practised by developers. The first two sub-questions aim to reflect the relation between the land tax and perceived developer behaviour, distinguishing between priced and non-priced factors. The third question elaborates on the relation between developer behaviour (decisions) and the perceived new practice of land banking after planning permission is granted. The final sub-question examines the influence of this perceived fiscal change on the problem of land banking as a practice of developers.

1.4 Scientific relevance

This research elaborates on the findings of Adams, Leishman and Moore (2009); Bulan et al. (2009), Capozza and Helsley (1990); Cunningham (2006); Grenadier (1996); Sommerville (1999); Wang and Zhou (2006) and Williams (1993), who have proven through real option theory and other

means of analysis that developers do practice land banking. They found that in the UK market, housebuilding companies speculate on land value and actively keep land value and housing prices high by restricting housing production to a set amount. Additionally, McAllister, Street and Wyatt (2016) found that some housing developers act as land investment vehicles to ensure a set output, thereby ensuring future profit. As these various sources suggest, the UK and many other countries see land banking as one piece of the puzzle that is solving their housing crisis. In the Netherlands, land banking is also seen as a practice that is commonly used by housing developers, as indicated in research by Buitelaar and van Schie (2018). It is interesting to see how and why these strategies are adopted by developers and what specific incentives could potentially make developers abandon this strategy. One important factor mentioned in literature by Van der Krabben (2021) is the land tax. It aims to make strategically stalling a site more costly, thereby encouraging developers to begin the development process earlier. This emphasises the efficient use of land, which is needed to make steps towards an end to the housing crisis. Another important factor that relates to land banking and is important to the efficiency of Dutch housing production is the unused hard plan capacity (plans that have received planning approval of municipal or provincial council). For more than half of all housing production set for 2025, plan approval was received in the beginning of 2022 but has not yet been used (RIGO, 2022). As mentioned previously, developers use time to gain higher profits on their developments. It is therefore plausible that some of this unused plan capacity has been delayed because of the land banking practices used by developers. This research will provide empirical evidence of whether or not developers use land banking practices after they obtain planning permission. It also aims to support Van der Krabben's (2021) research on whether or not a land tax will influence land banking practices.

In addition to contributing to literature on land banking, this research will add to the ongoing debate between urban planners and market actors regarding housing shortages. In literature, this debate is perhaps best discussed by White (1985). Market actors blame planning authorities for the housing shortage, citing excessive planning laws, insufficient land supply for building houses, a shortage in urban planning capacity and the zoning of land at locations that are not efficient for development. In turn, planning agencies accuse market actors of stalling projects for speculation and land banking, thereby knowingly disrupting the market. A better understanding of the effects of a land tax might provide insight into whether or not strategically stalled sites with planning permission will be a significant problem.

1.5 Societal relevance

Answering the main research question will provide insight into a possible policy solution to the Dutch housing crisis by reducing stalled sites and encouraging efficient land use. The presupposed improved building output should make housing more affordable because of an increase in supply. This addition to literature might also be of interest in other countries, such as the UK, where stalled sites and land banking are also seen as contributing to a housing shortage and rising housing prices. Finally, because the Dutch housing crisis is a significant and interwoven problem, this next step in mapping land banking practices could contribute not only to solving the housing crisis but also to tackling some societal problems (Spit & Zoete, 2016). For example, a tight market prevents people from accessing adequate housing, which could have an influence on their health.

1.6 Reading guide

This document has been divided into five chapters, beginning with the introduction. In this chapter, the reader is introduced to the subject and purpose of this thesis. The second chapter discusses the scientific framework of this research and presents major definitions. The third chapter is dedicated to the research design and methodological framework. In the fourth chapter, the results

of the research analysis are discussed with references to the interviews conducted for this thesis. Finally, the conclusion and discussion chapter is dedicated to answering the research questions and making recommendations for future research on the subject of land banking.

Chapter 2 Theoretical and conceptual framework

In this chapter, the various aspects and concepts that are relevant to the research objective will be discussed based on existing scientific research. It will begin with the theoretical framework, followed by the conceptual framework, in which the relationships between the different concepts are discussed. The chapter will close with the operationalization of the various concepts specific to this thesis based on scientific research.

2.1 Dutch housing market

The Dutch housing market is currently out of balance. Demand and supply are not proportionate, and various societal problems related to the housing shortage have arisen (BZK, 2021). The Ministry of Domestic Affairs and Kingdom Relations has indicated that this increased demand for housing in the Netherlands is the result of a growing population and a decrease in average household size. They project that the number of households in the Netherlands will increase by 849.000 from 2021 to 2035 (BZK, 2021).

On the supply side of the problem, the situation becomes more complicated than simply an increase in households. Since 2014, there has been an annual increase in newly built housing, and this increase is projected to continue until it peaks in 2026. This may not initially seem like a problem. A rather large portion of newly realized housing is newly built housing. Only a small portion is created through the transformation of existing buildings, such as office buildings (Buijs, 2019). However, this output of housing still does not match the demand for housing until 2025, as projected by BZK (2021). Additionally, the question of whether the increase in new build plans can be maintained has arisen. Since 2017, planning permissions granted annually have no longer increased (Buijs, 2019). The increase in housing stock is also becoming more reliant on newly built housing, as every existing building that is transformed lessens the chance that another building will be transformed (Buijs, 2019). Office buildings fit for transformation into housing is simply a stock that only grows a little over time.

An explanation for why supply cannot seem to meet demand in the housing market might be found in the limitations faced by the Dutch construction industry. Since the financial recession of 2008, the output of the construction industry has yet to recover from the enormous fall in build capacity (BZK, 2021). This crisis led to problems in the construction industry such as shortages in manpower and materials. These shortages then led to an increase in construction costs (Buijs & Wolf, 2019; CBS, 2018). In addition to the construction industry, the housing market in the Netherlands is experiencing an extremely low elasticity (Boelhauer & Hoekstra, 2009; Michielsen, Groot & van Maarseveen, 2017; Swank, Kakes & Tieman, 2003). An inelasticity on the supply side means that the housing market hardly responds to changes in housing prices (Buitelaar, 2019).

2.2 Stalled sites

Developing urban areas is a difficult and complicated process. Healey (1991) argues that sites might become stalled because the process of development is complicated, with many regulatory requirements needing to be fulfilled before planning permission is granted and a number of obstacles that must be overcome before completion. As such, stalled sites are defined as sites that are purposefully not developed for a long period of time. This definition is broad and takes into account obstacles that could delay development, such as the process of obtaining planning

permission, and obstacles that may occur after planning permission is granted until the completion of development. According to Buitelaar and Van Schie (2018), problems that might stall a site include the following:

1. Urban planning policies and requirements
2. Financial viability
3. Site-specific problems
4. Landowners and developers

Urban planning policies and requirements can delay a project even when only one requirement is not met. Financial viability is also a hurdle that may cost developers time and cause the site in question to become stalled. For example, an international financial crisis, such as the one that occurred in 2008, can leave developers with land that they have paid too much for in comparison to the prices they can ask for after the real estate has been built. Site-specific problems are problems that occur, for instance, after examining the soil. The soil of the land might be contaminated and need to be remediated. This is a long process that could lead to less financial viability. Finally, landowners and developers sometimes strategically stall sites to ensure a higher profit in the future. This is sometimes done because they know prices will rise, meaning they will obtain more from selling in the future. It is also done for the sake of land banking (see §2.3).

Even after developers receive planning permission from the municipal council or '*gemeenteraad*', delays are still possible. For example, people can hand in a '*zienswijze*' stating their objection for the proposed spatial change, which is then handled by the '*afdeling bestuursrechtspraak*' (court). This process can take weeks, leaving the site stalled (Geuting & de Leve, 2018).

McAllister et al. (2016) argue that stalled sites are 'sites that already have a planning permission but have not yet started the actual development for an abnormal amount of time'. This different definition of a stalled site emphasizes the period during which delays on strategic grounds are introduced for developments. Similarly, Buitelaar and Van Schie (2018) conducted research on stalled sites in the Netherlands and found that the average time between the issuance of planning permission and completion of the development is generally between 21 and 24 months. This definition, which takes delays into account, will be the main definition used in this research.

2.3 Land banking

Stalled sites are seen as part of the puzzle that makes up the Dutch housing crisis. Various factors can cause sites to become stalled (see §2.2). For example, landowners and developers may intentionally stall a site. Additionally, the financialization of land positions by landowners may cause delays in development (Cochrane, Colenutt & Field, 2015). McAllister et al. (2016) suggest that some landowners may exert market power to charge higher prices than other landowners with lower market power. This use of market power to influence housing prices regionally is another factor that contributes to land banking. Land banking can also be aimed at obtaining a portion of the building production over a certain period that is large enough to ensure future profits (Adams, Leishman & Moore, 2009; McAllister et al., 2016). Land banking is also used as a strategy for two purposes. The first is to speculate on a rise in land value that may cause problems for the financial viability of projects further into development. The second is to control the supply side in regional monopolies by having substantial (regional) market power. According to Hughes, Ott and Read (2012), developers in such cases aim not to build as quickly and as much as possible but rather to sell off parts of the real estate objects in phases. Additionally, building in phases is assumed to ensure a higher profit margin even without the effect of market power. From the perspective of smaller individual sites, a delay

may also be strategic when housing prices are projected to go up soon or the political climate is projected to improve (Hughes, Ott & Read, 2012).

Land banking can be summarized as using land as an investment vehicle. This makes the choice of investment by developers and landowners an interesting subject for research. When taking a more behaviouralist approach toward the housing market, it becomes apparent that landowners and developers respond not only to priced signals but also to non-priced signals such as individualized habit persistence and risk aversion (Antwi & Henneberry, 1995). This causes actors to behave differently in response to market conditions or market shocks, such as the 2008 financial crisis. It also means that developer behaviour is an important factor in the development output on the market. The risk and uncertainty that comes with investing in housing make investing strategic (Baldi, 2013). According to Cochrane, Colenutt and Field (2015), a solution to land banking should be found. They suggest that new policies might open up the market, but they also warn of an already complicated jungle of planning restrictions. Furthermore, Cochrane, Colenutt and Field (2015) mention that the state is also a market actor that actively contributes to the housing problem. As such, soft governance might be the best way to reshape the market.

2.4 Land tax

A land tax is a tax concept that has many different forms worldwide. The most common form is the land value tax (Webb, 2013), a tax that is only placed on land ownership, disregarding the real estate value of what is on the land in the taxation. Economists typically choose a land tax over other forms of tax because they are economically efficient and reduce inequality (Stiglitz, 2015). In other words, a land tax taxes the specific good that is most related to earning money: land ownership. According to Van der Krabben (2021), implementing a land tax instead of the OZB tax (tax on real estate value) could change the Dutch fiscal system immensely. Van der Krabben also points out that there is a significant challenge in implementing the tax and replacing the OZB tax (the current tax on real estate value in the Netherlands) for these are very complex taxes and differ a lot in general concept. Municipalities for instance, need to develop a new tool to identify the land value. To overcome these potential implementation problems, a land tax could be specifically aimed at developments that have planning permission and are overdue on development, according to the average time at which development starts after receiving planning permission. The tax should come to effect after a substantial amount of time has passed following the granting of planning permission. As mentioned by Buitelaar and Van Schie (2018), the average amount of time between planning permission and completion of the development for stalled sites in the Netherlands is between 21 and 24 months. This period should therefore be sufficient to discourage developers from using land as investment vehicles after having received permission to develop the land. The municipal income from the land tax might be beneficial in terms of reducing the cost of preparing plots for construction throughout the entire municipality. This should therefore not only discourage developers from leaving plots undeveloped but also improve the financial viability of greenfield plans.

2.5 Conceptual framework

To understand perceived developer behaviour when it comes to land banking strategies and how a land tax could influence these practices, it is necessary to examine how developers would react to this proposed fiscal change. In the conceptual framework (as seen in Figure 2.5.1), a perceived land tax as a fiscal method of steering the market has a presumed influence on the perception of land banking practices (Bulan et al., 2009; Capozza & Helsley, 1990; Cunningham, 2006; Grenadier, 1996; Sommerville, 1999; Wang & Zhou, 2006; Williams, 1993). This relation is influenced by developer behaviour based on Antwi and Henneberry (1995). The authors argue that developers behave not only according to rationality and priced factors but also according to behaviour such as

risk aversion and individualized habit persistence. It is therefore interesting to see how developers respond to such a perceived intervention in housing development. With all of this in mind, the hypothesis of this research is that a land tax has a perceived influence on land banking practices through developer behaviour. Developer behaviour consists of priced factors, such as a financial impact assessment of the tax, and non-priced factors, such as risk aversion and individualized habit persistence. The land tax is expected to have a negative impact on land banking practices (Van der Krabben, 2021).

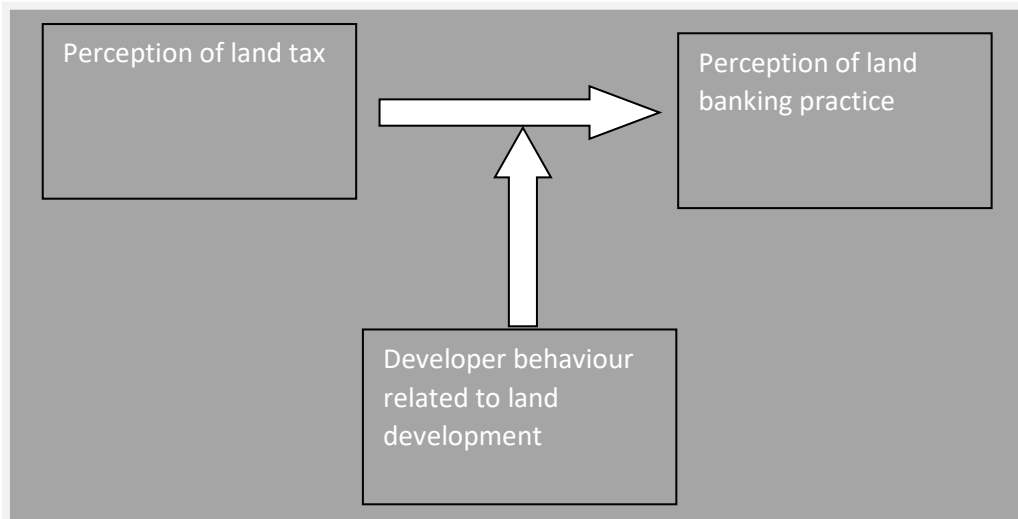


Figure 2.5.1: Conceptual framework

2.6 Operationalization

Changing land banking

Stalled sites are an indicator of land banking practices (Adams, Leishman & Moore, 2009; McAllister et al. 2016). Sites can be stalled for various reasons, but the financialization of land assets is the main reason why stalled sites are often subject to land banking practices. In short, the financialization of land positions by landowners causes delays in the development of sites (Cochrane, Colenutt & Field, 2015). Land banking refers to strategically using land as an investment vehicle by developers and landowners who, by doing so, speculate on value increases. Occasionally, developers use their regional market share to control housing prices in the area (Adams, Leishman & Moore, 2009; McAllister et al., 2016), thereby ensuring a future profit on intentionally stalled land positions. Real options theory is a theory that has recently been used by academics to analyse the steps that development goes through and what stages can be distinguished (Bulan et al., 2009; Capozza & Helsley, 1990; Cunningham, 2006; Grenadier, 1996; Sommerville, 1999; Wang & Zhou, 2006; Williams, 1993). Through various models, it becomes apparent that the opportunity costs of delaying development outweigh the holding costs of leaving land undeveloped. This leads many developers to choose to delay and stall the site. The costs of such delays are referred to as holding costs (Ott et al., 2011). This confirms the fact that developers strategically delay developments based on an expected rise in land value that outweighs the holding costs. This practice is not wanted in a time where there is a housing crisis and too little housing production to meet the demand for years to come. It should therefore become less beneficial for developers to practice land banking.

Developer behaviour

Land banking practices are influenced and shaped by developer behaviour. Land banking is defined as strategically maintaining undeveloped land positions. The term 'strategically' indicates that these actions are strategies that are purposefully chosen by developers and are thus shaped by developer behaviour. Antwi and Hennebery (1995) argue that developer behaviour is not only influenced by priced factors, which are predictable, but also by non-prices factors, such as risk aversion and individualized habit persistence. This makes it interesting to see how government intervention in the market, such as a land tax, could influence developer behaviour. Additionally, it is interesting to see how a developer's perception of a land tax would influence their strategy in regard to land banking. Individualized habit persistence is the habit formation of an actor in its most basic form (Abel, 1990). This means that the success of strategies in the past will influence the chance that they will be chosen again when the current strategy is reassessed. Risk aversion refers to the unwillingness of an individual to bear more than one risk, even if these risks are independent from one another (Kimbal, 1993). It is interesting to see whether these two behavioural patterns can be distinguished with the developer's perception of a potential land tax on undeveloped land that already holds planning approval.

Land tax

A land tax, as proposed by Van der Krabben (2021), would be an immense change in the Dutch fiscal system. Van der Krabben also points out that there is a significant challenge in implementing the tax and replacing the OZB tax (the current tax on real estate value in the Netherlands). To overcome these potential implementation problems, a land tax could be specifically aimed at developments that already have planning permission and are overdue on development, according to the average time development starts after permission is granted (Buitelaar & Van Schie, 2018). To know how this would influence developer behaviour, it is important to ask developers how they would react to such a tax and how they think it would affect their behaviour in regard to land banking practices. More than half of all housing production set for 2025 has already received planning approval in the beginning of 2022, but this planned housing production has not been used (RIGO, 2022). This evidence points towards the possibility of a land tax being implemented to target developments with planning permission. The tax should come into effect after a substantial amount of time has passed following planning permission. The findings of Buitelaar and Van Schie (2018), which indicate that the average time to complete development is two years, should be a good and science-based benchmark. This should discourage developers from using land as an investment vehicle. The municipal income from this land tax might be beneficial for a fund to reduce the costs of preparing plots for construction in the entire municipality. This will not only discourage developers from leaving plots undeveloped but also improve the financial viability of greenfield plans.

Chapter 3 Methodological framework

3.1 Research strategy

This research utilizes a deductive methodology, as this is most effective for confirming a hypothesis derived from existing literature, as explained by Van Thiel (2014). Additionally, deductive methods are best fitting when attempting to answer a research question that is suggestive in nature, as is the case in this research. Considering how much is already known about land banking in the Netherlands, this strategy is most fitting to elaborate on existing literature. As a methodological choice, the research questions lend themselves to a qualitative approach because it is impossible to assess the impact of a land tax on developer behaviour through existing databases, as the land tax is not currently in existence. Additionally, the nature of the research questions lend themselves better to a qualitative approach because this approach is more fitting to an examination of the reasons behind developer behaviour. The use of a quantitative approach might leave out some key arguments of developers regarding the subject. Finally, this research aims to be explanatory in nature. This fits better with the nature of the problem of land banking practices and proof of its existence in the Netherlands. Although there is already existing literature on land banking, there is little to no empirical research dedicated to a land tax. Furthermore, the complicated nature of the presumed effects of a land tax on land banking would not be conducive to descriptive research. This research focuses on a completely new reason for implementing a land tax and relies on participant perceptions; therefore an explanatory goal is more fitting for this study (Van Thiel, 2014). The actual effect of a land tax on developer behaviour can only be the subject of research if the land tax is implemented, which is not the case for the land tax described in this thesis. As such, this research focuses on perceived changes in the presumed relation between the land tax and developer behaviour, as can also be seen in the conceptual framework (section 2.5).

3.2 Data requirements

Dimension /Concepts	Variable	Sub-variable	Indicator	Literature	Data source	Interview questions
C1 Land tax	C1V1 Priced factor	C1V1S1 Cost evaluation	I-1	(Van der Krabben, 2021)	Interview	Would you consider a new cost evaluation if a land tax will be implemented?
		C1V1S2 Acquire or sell land positions	I-2	(Van der Krabben, 2021)	Interview	How will a land tax influence the process of acquiring or selling land?
		C1V1S3 Land prices	I-3	(Van der Krabben, 2021)	Interview	How do you think the land prices will be influenced by the land tax?
	C1V2 Non-priced factor	C1V2S1 Opinion	I-4	(Van der Krabben, 2021)	Interview	What is your opinion on introducing a land tax? Do you think it will be beneficial to solving the housing crisis?
		C1V2S2 Risk perception	I-5	(Antwi and Henneberry, 1995)	Interview	How do you perceive the risk that the agency will face as a result of the land tax?

C2 Developer behaviour	C2V1 Risk aversion	C2V1S1 Risk assessment	I-6	(Kimbal, 1993)	Interview	How would you assess the risk the agency will face as a result of the land tax? Do you think a land tax will be beneficial to your agency (and market)?
	C2V2 Individualized habit persistence	C2V2S1 Individualized habit (pattern)	I-7	(Abel, 1990)	Interview	Are you able to distinguish a pattern in previously adopted strategies by your agency?
		C2V2S2 Habit persistence past	I-8	(Abel, 1990)	Interview	Do you think that your agency's strategy in the past has been based on previous success?
	C2V3 Priced factors on behaviour	C2V3S3 Cost analysis	I-9	(Antwi and Henneberry, 1995)	Interview	How does cost projection analysis influence your strategy as an agency?
C3 Land banking	C3V2 Stalled sites	C3V2S1 Occurrence of stalled sites	I-10	(Buitelaar & Van Schie, 2018)	Interview	Do you as an agency have stalled sites in possession?
		C3V2S2 Reason for stalling site	I-11	(Buitelaar & Van Schie, 2018)	Interview	What is the reason for stalling the sites that you as an agency possess?
	C3V3 Phased building	C3V3S1 Occurrence of phased building	I-12	(Ott et al., 2011)	Interview	How many times do you use a phased development procedure for sites?
		C3V3S2 Reason for phased building	I-13	(Ott et al., 2011)	Interview	What is the reason for you as an agency to use a phased development procedure for sites?

Table: 3.2.1 Operationalization chart

3.3 Data collection

The data necessary for this research is visible per concept in Chart 3.2.1 under 'data source'. The main sources of data were semi-structured interviews and public documents, which underpin the interview outcomes. The semi-structured interviews were conducted with representatives from various developer agencies who are suspected of practicing land banking based on public documents and literature. The interviews were semi-structured because of the nature of the content that is the subject of this research. It was possible that interviewees would see certain information as sensitive. It is better to gather sensitive data via semi-structured interviews, as respondents tend to disclose information in more detail than in structured interviews (Van Thiel, 2014). In total, 14 cases were

selected out of the semi-structured interviews based on the participant's knowledge and their likeliness of practicing land banking. The 14 cases are categorized based on size (number of dwellings developed per year), location (developing greenfield or brownfield) and ownership of a construction firm. It is important to consider size because literature suggests that the larger a firm is, the better they can regulate local housing prices (McAllister et al., 2016). Location of the development is an indicator of land banking if it is based on the type of land (brownfield greenfield) (Hughes, Ott & Read, 2012). Finally, developers often practice land banking to ensure future construction capacity (Adams, Leishman & Moore, 2009; McAllister et al. 2016). Based on literature, the interviewees were categorized as owning a construction firm or not. A criterion for the inclusion of interviewees in this study was the level of knowledge they have about their company strategy and decision-making.

3.4 Data analysis

The results of the interviews were analysed via coding based on the indicators in table 3.2.1. Because the interviews were semi-structured, meaning it was possible for new important information to come up, the interview transcripts also hold codes in vevo. The coding process of the interview transcripts was followed by content analysis based on the operationalization in Chart 3.2.1. Additional sources of data included reports and literature, which will be discussed in the results chapter to guide and underpin the outcomes of this research. It is important to obtain data from multiple sources on this subject, as it has minor scientific basis in literature. These data sources were also analysed via content analysis. Content analysis best fits the data in this research because it can be used to test a hypothesis systematically with little interpretation from the writer (Van Thiel, 2014). Writer interpretation is not valuable for the purposes of the present research. All other common analysis methods use writer interpretation to answer the research question and are therefore not fit to use in this study. Finally, publicly available data was used to distinguish whether a developer uses land banking practices and to code developer behaviour (Section 3.2.1) alongside to the interviews.

3.5 Validity and reliability

According to Van Thiel (2014), reliability refers to accuracy and consistency regarding how the different variables and theories used in a study are measured and analysed. When the reliability is good and efficient, a repetition of the analysis should produce the same outcome. Accuracy refers to how variables are measured and whether this method reflects the intention of the research. To ensure reliability, all variables used in this research (Chart 3.2.1) are based on the mentioned theories in the theoretical framework. To ensure accuracy, it was important to keep the past interviews in mind when conducting each new interview, thereby ensuring that the collected data from the interviewees' answers matched the questions they were asked. In this regard, triangulation is also important (Van Thiel, 2014). Gathering data from literature, interviews and reports guarantees an accurate interpretation of the collected data and thus adds to stronger external validity. The consistency of the research lies in the systematic coding and extensive operationalization (Chart 3.2.1) of the concepts involved in the conceptual framework (Figure 2.2.1). This should make it easy to re-collect the data and thus confirm the reliability of the conclusions of this research. The internal reliability of this research is ensured by the operationalization scheme, which is based on literature with an overall strong foundation. It can be stated that through triangulation this research is focused on the phenomenon that it aims to put up for research. Triangulation is formed by incorporating multiple interview questions, reports and literature sources to know the data says something of the phenomenon it intends to describe.

Chapter 4 Results

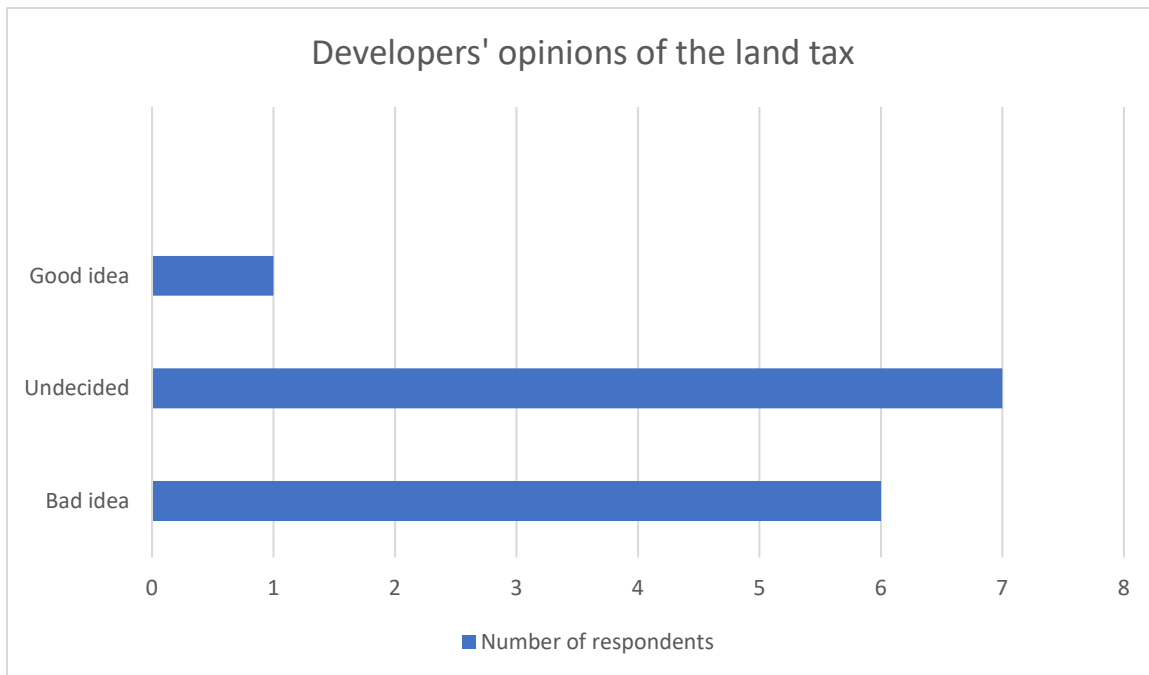
This chapter will explain the results of the interviews conducted with developers who own land positions as well as the findings from the public documents. The first section concerns the interviewees' perceptions of the impact of a land tax on both the market and themselves. The second section concerns how the interviewees work with developments, with specific attention paid to land banking. The third section discusses developers' perceptions of land banking practices under a land tax. This is followed by a policy discussion regarding the expected effectiveness and implementation of a land tax. Finally, a reflection on the theory is made with regard to the results of the research.

4.1 Perceptions of the land tax

To obtain an idea of developers' perceptions of a potential land tax, it is important to discuss the interviewees' ideas and opinions of the land tax and how they think this land tax will influence the market. In this section, the various areas that may be affected by the new land tax are discussed.

4.1.1 Opinions of the land tax

The land tax proposed in this research was a sensitive subject for all respondents in this research. Notably, many interviewees saw the urgency of tackling the current problems that surround the housing market. A few respondents even saw the land tax as being potentially advantageous for their company or the market in general (Case 3, 64; Case 4, 59). For example, they foresaw less speculation on the land market or more opportunities for acquisition. These developers also saw opportunities to use the municipal income from the land tax to benefit and speed up projects in the municipality. Despite these positive options, a majority of initial impressions were negative or undecided. Graph 1 shows how the respondents initially thought of the land tax when asked about what effect they think the tax will have on the market and developments.



Graph 1: developers' opinions of the land tax

Bad idea: Case 1, 70; Case 2, 49; Case 5, 315; Case 7, 218; Case 10, 364; Case 12, 230;

Undecided: Case 3, 63; Case 4, 53 Case 6, 107–111, Case 8, Case 12, Case 13, 428; Case 14, 419

Good idea: Case 9, 168

When examining the respondents' opinions of the land tax in more depth, it is apparent that more than half of the developers do not see how this land tax will solve the problems in the housing and land markets. The most common conclusion that the developers made regarding the potential implementation of a tax on undeveloped land with planning permission was that the tax will not speed up the process of development (Case 1, 70; Case 2, 49; Case 4, 53; Case 5, 315; Case 6, 106; Case 10, 364; Case 12, 230). Additionally, many developers believed that, at least in the near future, such a land tax will only slow down projects. The main reason they gave for this was financial viability, as the cost of the tax would be incorporated into the residual value calculation of the project's profitability calculations. This means that developers would pay a lower price for land or charge a higher price for the houses built in the end. According to many of the respondents, the influence of the tax on profitability will be a difficult issue. Another reason the respondents gave for why the land tax will not help to solve the problems in the housing market is that they believe the problem does not lie with developers but rather with the municipal and provincial capacity of urban planning departments to assign new and well-formed planning permissions (Case 3, 63; Case 11, 221; Case 12, 103). Due to the currently stressed markets, one developer admitted that he cannot think of a party who would intentionally delay developments after having received planning permission (Case 7, 216). Many respondents stated that they feel as if they are acting as urban planners when forming and proposing changes in zoning and other urban planning restrictions. In their opinion, this is something that the municipality should instead be in charge of.

The respondents gave a few recommendations regarding the implementation of the proposed land tax. Cases 1 and 5 (Case 1, 74; Case 5, 335) would rather an obligation to start construction as soon as possible be incorporated into the anterior agreement rather than into a land tax. In this case, the obligation would be less likely to disrupt projects as a result of bad financial

viability, as the fine for not beginning construction would already be incorporated into the agreement and thus be better incorporated into project calculations. However, Cases 1 and 5 would rather there be no obligation to build in general because they believe that the owner of a piece of land should be able to assess which risks they do and do not want to take. Another respondent (Case 3, 63) argued for deductions on the land tax if a delay is not the fault of the developer. This would protect the developer against financial damage due to a delay in development that the developer was not responsible for. An example of this would be a delay due to an objection by stakeholders in the region. Such objections can delay development for years, even after planning approval has been obtained. Another respondent suggested a limit on speculation before negotiating planning permissions for developments (Case 6, 87–93). This could lower land prices not by risking financial viability for future projects due to a land tax but rather by diminishing the share of the land market held by owners whose intent is to use land positions primarily as investment vehicles. This same respondent (Case 6, 90–92) also stated that different bodies of the Dutch government impose different social and environmental demands on developments, causing the financial viability of these developments to come under pressure. As such, the social and environmental care obligations of the government are not fully met because compromises must be made during the development process. According to the respondent, Dutch municipalities should assume a more active land policy. In this way, they can guarantee their social obligations to urban planning and leave the market to a freer policy regarding planning obligations, which will result in more projects becoming financially viable and may even improve the construction capacity for housing. Case 11 (221) argued that if a land tax is implemented, the capacity of urban development departments must grow for it to work. He stated that this has been a problem for years and cannot be ignored when dealing with measures such as land taxes.

4.1.2 Risk perception

To better understand how developers perceive the proposed land tax, they were asked to what extent they will be affected by the tax. It should be mentioned that in the proposal for the land tax that was introduced during the interviews, a tariff was not included in the land tax. This made it difficult for the respondents to assess the impact. As such, their responses mainly concerned where and how they will be affected rather than how much. Notably, some developers stated that they will hardly be affected by the tax (Case 1, 70; Case 5, 325; Case 7, 236; Case 10, 368; Case 12, 252). However, their statements varied regarding why this would be the case. One respondent (Case 1, 70) remarked that their positions will not be eligible for the tax because they are in urban areas. Even after being told that such plots are just as eligible as greenfields, the respondent stated that they never stall sites intentionally, let alone for two years. A categorization of the respondents as greenfield developers, brownfield developers or both is shown below (Figure 4.1.2).

Location	Brownfield	Greenfield	Mixed
	Case 1, Case 2, Case 4	Case 3, Case 8, Case 9, Case 10, Case 11, Case 12, Case 14	Case 5, Case 6, Case 7, Case 13

Figure 4.1.2: Categorization of cases regarding location

When considering the above distribution and how the respondents felt they will be impacted by the land tax, it can be argued that the developers who operate on greenfield locations believe they will

be impacted substantially more often than developers on brownfield locations. This might indicate that, intentionally or not, developments on greenfield positions delay more often than those on brownfield locations after having received planning permission. In comparison, size and possession a construction firm did not seem to influence the developers' perceptions of the impact of a land tax on their firm. One respondent (Case 2, 50) stated that he will be affected by the tax regardless of whether or not his firm has positions that do not begin construction after two years. He believes that the value of the land will be impacted negatively, meaning that the positions currently in their portfolio will lose a portion of their value. He was unsure how much this decrease will be, although this was largely because the proposal for the land tax does not state what the tariff of the land tax will be. This emphasizes the difficulty of estimating how significant the impact of the land tax will be on firms. One reason given by the respondents for was the amount of financial risk that developers can bare. According to some respondents, the land tax will diminish their financial capacity due to a higher risk of cost overrun from the tax (Case 4, 47; Case 6, 128). The extra risk will be priced into projects that will begin after the tax is implemented. This might lead to risk averse behaviour and thus a lowered construction capacity for housing. Additionally, some respondents expect that they will need to pay the tax on developments for which construction begins after two years but that are delayed for reasons that are out of their hands (Case 3, 63). For example, one respondent mentioned the number of times that stakeholders can make objections on developments. This can cost developers years, even after planning permission has been obtained. This respondent suggested an exemption on the tax if the delay is not the fault of the developer. Furthermore, according to one interviewee (Case 6, 128), the tax will be more symbolic in nature because he cannot think of anyone who intentionally delays developments for their own gain. He argued that in this market, no one is delaying projects, as he believes that housing prices are at the top of what they will be for a while. This respondent also argued that this land tax should have been implemented in the aftermath of the 2008 financial crisis. During this time, developers were delaying projects because of the benefit of waiting for better housing prices to sell their real estate. Although he believes the impact of the land tax will be limited on his own business, he also believes that the prices of land will go up because the risk of paying the land tax at the end of projects will be priced in during the acquisition of land positions. In comparison, some respondents expect new possibilities to arise because they believe the land tax will cause land prices will drop (Case 2, 54). For example, the financial viability of projects might improve, leading to an increase in the production of real estate.

4.1.3 Conclusion

In general, the respondents almost unanimously believed that the land tax as proposed by this research will not be beneficial to them and that it will not improve the stressed market situation or the current housing crisis. They also believed that the housing crisis and the lack of real estate development in times of high demand for housing are not the result of their own strategies and behaviours. The respondents did make some valuable recommendations in regard to policy that could be implemented. Some interviewees emphasized the planning capacity of urban planning departments of both municipal and provincial organisations. One of the most important recommendations that they made is a desire to see the obligation to construct land positions incorporated in the anterior agreement of each individual project that receives planning permission. The obligation should then be enforced by a financial penalty when the construction has not been started after two years. The most important area in which the developers would be affected by the land tax is in the financial viability of their projects. The risk of having to pay the tax will be priced into developments and assessments on viability. This might lead to a decrease in the capacity for housing construction, potentially making the housing crisis in the Netherlands worse than it is already.

4.2 The practice of land development and land banking

To break down the very broad, important and complicated concept of developer behaviour, this section will attempt to break up the related findings in this research into a few sections. It will also elaborate on how land development and land banking practices manifest for the interviewees.

4.2.1 Priced factors

According to the literature, priced factors can influence the decision-making process (behaviour) of real estate development firms. They incorporate these factors into their decision-making processes by doing market research or making cost-benefit analyses for the management of both the entire business and individual developments. On the basis of these findings, corporate boards decide what the next steps of the firm will be in terms of acquisition, development, construction, development capacity and so on. It is interesting to note how often the developers in this research referred to cost-benefit analyses in any shape or form during the interviews, particularly when discussing company strategy or decision-making on different types of developments. This highlights the importance of priced factors in comparison to non-priced factors in terms of their influence on developer behaviour. The most commonly used type of analysis is residual value analysis, which is a calculation done by all involved developers to ensure that a development is profitable with the prices (and future price changes) that are set at that particular time. This analysis is updated at various points in development to keep track of profit and costs. In this way, adjustments can be made at the right time during the development. Another area in which respondents let their behaviour be influenced by an analysis of priced factors is market research (Case 1, 81; Case 2, 31; Case 3, 66; Case 6, 33 & 45; Case 7, 98; Case 8, 89; Case 9, 50; Case 10, 140; Case 13, 277; Case 14, 84). In particular, the cyclical character of the land and housing markets significantly influences these respondents. The respondents mentioned the changes in the land and housing markets as major factors that influence the speed of developments and their decision of whether or not to start developments at all. Developments that are under financial pressure due to costs rising faster than housing prices will be postponed. As one respondent put it,

If you are not constructing it then is for a reason. Mostly you are not able to get the project financially feasible if you're not developing. You are not going to develop for the building to stay vacant or if you are certain, you will make a loss. You then will leave these houses for what they are [not financially feasible]. (Case 3, 66)

This quote clearly indicates that developers must make a decision regarding whether or not to continue the construction of certain developments. Generally, the respondents mentioned needing to decide whether to proceed with projects at certain points in the development process: before acquisition, before applying for a change in planning permission for a particular plot and after approval (typically during the full process of approval). These points in the timeline of a development play a crucial role in ensuring that the number of houses built is subject to the cyclical character of the housing and land markets.

Although the respondents confirmed that over the past few years, it has not been difficult to proceed with developments financially because of rising housing prices, they also stated that the heated market has made it difficult for buyers to finance their homes. The respondents also noted that that this might change due to the ongoing war in Ukraine, the aftermath of COVID-19 and changing monetary policies (Case 2, 29 & 32; Case 3, 40 & 61; Case 4, 40; Case 6, 33; Case 9, 136; Case 10, 147; Case 13, 352). With the housing market slowing down and developers having a more difficult time financing their projects, they fear it will become more difficult for projects to be completed or started at all.

Financing becomes harder. Rates are already up 3%–3.5%, which has a big influence. I mean if prices will continue to rise and rates will hike, it will have a big impact on financing developments in the near future. This means that the amount of projects and how long they will take to complete in the coming time will drop and slow down. (Case 6, 78)

When considering this in relation to the three development categories, two out of three brownfield developers (Figure 4.1.2) confirmed their worries about the financial feasibility of their projects due to the Ukraine war, COVID-19 and changing monetary policies (external market factors). Brownfield developers are less likely to delay after having received planning permission because they feel they are not as affected by the land tax as greenfield developers. This, in addition to their increased likelihood of experiencing financial feasibility problems, indicates that brownfield developers are less likely to delay developments strategically after having received planning permission. They might feel they cannot delay a project because there is no gain on the feasibility side.

While the respondents stated that they expect the financing of projects to become more difficult if such a tax is implemented. They also mentioned ways of minimising the risk of self-financing or financing via financial institutions. Cooperation between developers is a common practice among the respondents, as it allows them to share risks and lower the risks associated with financing their projects (Case 1, 79; Case 2, 29; Case 4, 36; Case 5, 288; Case 7, 44 & 143; Case 8, 109; Case 10, 323; Case 11, 173; Case 13, 152;). When considering the distribution of the developers who took part in the interviews (Figure 4.1.2), it is clear that respondents who operate on brownfield projects are more likely to share risks with other parties in the industry. This indicates that there is more risk involved in developing on brownfield locations. What is remarkable is that such a high number of developers regularly cooperate on projects. This means that when analysing the financial viability of projects, developers sometimes look to other firms within their own branch to make developments financially viable or to obtain an agreeable risk position. In addition to businesses who operate in the same market or financial institution, one respondent mentioned private equity as another partner for financing their projects (Case 3, 40). In his experience, financing projects with private equity partners is a lower risk than financing projects with banks.

Another financial factor that influences decision-making by developers is the value increase of land positions already in possession. Many respondents incorporate a value increase for land positions over the expected development period into their financial analysis for their projects (Case 1, 60 & 81; Case 4, 46; Case 5, 282; Case 6, 45; Case 10, 172–176; Case 12, 218). This indicates that in addition to developers sometimes holding land positions for longer than necessary (§4.1.2), developers sometimes use land positions as investment vehicles. This influences developers' decisions regarding whether or not to develop a land position, as developers may afford to wait to apply for a change in zoning if it is not necessary. When linking this data to the categories of developers included in this research, no notable trends were identified.

The last priced factor that was discussed in the interviews is construction costs. More than half of the developers involved in this research stated that they are experiencing an abnormal rise in the costs of construction (Case 1, 23; Case 4, 26; Case 6, 33 & 37; Case 7, 98; Case 8, 79; Case 9, 41; Case 10, 92; Case 12, 230;). This entails the costs of construction materials, labour and consultation. According to the developers, the reasons for this include COVID-19 and the war in Ukraine. The importance of this priced factor lies in the number of times the respondents linked this rise in construction costs to (expected) delays of current or future developments. Both were said to result from disruptions in supply and financial feasibility (Case 1, 81; Case 2, 19; Case 6, 50; Case 7, 98; Case 13, 325; Case 14, 303). The financial viability of projects is under pressure because construction costs

are rising faster than housing prices. This is abnormal, as both typically rise at more or less the same rate, with housing prices occasionally rising faster. One developer also mentioned delay due to re-negotiation processes following the sharp increase in costs for building materials (Case 2, 19).

4.2.2 Non-priced factors

To understand developer behaviour regarding stalled sites and development processes, it is important to examine not only how priced factors impact their behaviour but also how behavioural influences have formed patterns in their decision-making. According to literature, the two most important non-priced factors that are linked to developer behaviour are individualized habit persistence and risk aversion. Individualized habit persistence describes the habit formation of an actor. The adoption a certain strategy in the past can influence the adoption of that same or a new strategy in the future when reassessing the current strategy. The interviewees in this research indicated that they reassess their strategy multiple times. They also argued that that is an essential part of their business. A vibrant market, new players and international monetary influences on the market can lead them to adapt strategies quickly if necessary (Case 1, 66; Case 4, 50; Case 5, 303; Case 10, 71; Case 14, 57). It should also be noted that the possession of a construction firm was found to be linked to respondents quickly adapting to new circumstances if needed (Figure 4.2.1).

Construction firm	Yes	No
	Case 1, Case 2, Case 4, Case 5, Case 6, Case 7, Case 9, Case 13, Case 14	Case 3, Case 8, Case 10, Case 11, Case 12

Figure 4.2.1: Categorization of cases regarding owning construction firm

This indicates that developers base a significant portion of their development output on the construction capacity of their firm. As such, it is likely that developers with a construction branch are more prone to strategically delaying developments than their colleagues without a construction branch. Additionally, data shows that developers stick to what they are good at. For instance, Case 5 (Case 5, 9) stated that their company ‘DNA’ focuses on (re)building cities, which often involves many complicated construction risks, whereas Case 7 (Case 7, 56) typically works outside of the city and therefore faces low construction risks. Core strategies are sometimes so interwoven in a company’s ‘DNA’ that developers will bypass the potential of a new strategy in favour of the knowledge and successes associated with a past strategy (Case 1, 68; Case 3, 57; Case 4, 52; Case 5, 291; Case 7, 56; Case 9, 140; Case 12, 63; Case 13, 110). These could be instances of persisting habits in developer behaviour. However, because this can only be proven in retrospect, this study does not focus on real evidence of habit persistence.

Overall, when asked about their company’s strategy, the respondents indicated that they are prone to habit persistence. This suggests that the respondents are likely to continue practices that they have had had experience, knowledge and success with in the past. When asked about former successes and how these can be described, more than half of the respondents stated that they would recognize a pattern more based on successes from the past than on innovative and new ideas (Case 1, 68; Case 3, 2; Case 4, 52; Case 5, 299, Case 9, 140; Case 12, 63; Case 13, 110). This suggests that developers are prone to habit persistence and that the strategies discussed in the interviews might be more difficult to change or improve.

Risk aversion is another non-priced factor that can be used to describe developer behaviour. Risk aversion is the theory that an agent who bears a risk will not want to bear another risk even if these different risks are independent from one another. Risk aversion is less visible and tangible than habit persistence. However, it becomes visible when considering company strategy. For example, Case 5 (Case 5, 9) stated that their company focuses on redeveloping urban areas, which involves complicated architecture and significant construction risks, whereas Case 7 (Case 7, 56) stated that their construction is typically done outside of the city, which involves lower construction risks. Although their actions are opposite each other, the firms are similar in size and other characteristics. As such, the risks they face seem to largely be based on the types of projects they take on. Therefore, it could be argued that different developers may be risk averse in different ways. For example, it could be argued that Case 3 (57) is risk averse in terms of the geographic location of his developments. He stated that he could expand business over wider area but does not want to because he does not know the market in these places. For Case 2 (41), construction capacity is the most important factor that must be considered when deciding whether or not to delay developments. This shows risk averse behaviour when it comes to acquisition, as the company would only acquire land positions to guarantee construction capacity in the future. The most remarkable instance of risk aversion was mentioned by Case 6 (147). He stated that he avoids risk by cooperating on projects with other players in the field. He argued that it is too risky for one company to have too many projects. Therefore, by sharing projects with other players, the risk that the firm faces is shared across as many projects as possible. However, this can prevent or make it more difficult for the firm to begin a project on its own. It is difficult to make general statements about the risk averting behaviour of developers, as this behaviour is always related to specific factors that influence a firm's actions. What can be said is that each actor shows risk averse behaviour in their company strategy. For this research, it is most important to consider risk averse behaviour in relation to the proposed land tax. This will be discussed in §4.4.

4.2.3 Land banking

Land banking is a broad concept. At its most basic, it refers to strategically owning land and keeping it undeveloped to ensure future development projects. Because this is a matter of corporate strategy and a subject of societal debate, the developers in this research were not asked whether or not they use land banking as a strategy. The subject is too sensitive to ask about directly. They were instead invited to talk about their positions and about the process of development from acquisition to sale. They were asked questions such as 'Do you have stalled sites in possession?' and 'Do you ever wait with a development for a moment with a better market- or political circumstances?'. Overall, the developers talked about developments that are likely being held as land banking positions 31 times, with 12 out of 14 developers describing the practice of phased building or instances of stalled sites. These instances indicate the possibility of strategic land banking. The individual developments (developers rarely specified where) were either currently in ownership or in ownership in the past.

The developers who perform practices that indicate land banking (stalled sites or phased building) typically operate more in greenfield than brownfield developments (Case 5, 319; Case 6, 29; Case 11, 77; Case 13, 37; Case 14, 132). This means that developers who buy brownfield positions likely have a higher expectancy of developing in the near future (on average 3 to 5 years) (Figure 4.1.2). In greenfield areas, the acquisition of positions is more likely to be based on speculations on value increase, as these developers often act based on their own assessments of expectancy of development. Additionally, developers who were expected to practice land banking tended to have a construction department within their firm, as they perform land banking to ensure future construction work for their permanent construction capacity (Case 2, 42; Case 5, 9; Case 6, 21; Case 11, 42). Brownfield outliers were developers that are highly specialized in constructing in urban

areas. These developers tended to also have positions in urban areas, but these sites did not seem to be subject to strategic land banking. However, it should be noted that this conclusion was based on vague descriptions from the developers, as they were often unwilling to give exact locations or be specific about certain positions. The last trait that can be assigned to the group of developers who seem to practice land banking is that they tend to sell pieces of land before they begin the process of development. None of the developers who did not seem to practice banking sold land positions before development. When asked about the reason for reselling, the interviewees named various reasons, including ‘helping out another firm in the near vicinity’ (Case 5, 288) and ‘the development’s time projection was too long and we got a nice offer’ (Case 2, 35).

4.2.4 Reasons to perform land banking

The categories of size, place and ownership of a construction firm are important to an understanding of why developers practice land banking. As mentioned in §4.1.1, land banking is a broad concept, and there can be many reasons why a developer may use this as a strategy. The most frequently given answer by the developers in this research was a desire to ensure future construction projects for their in-house construction firm. Some developers specified that their focus is first and foremost construction and that developing always comes second (Case 2, 42; Case 5, 9; Case 6, 21; Case 11, 42). As such, by ensuring that future projects are acquired mainly on the basis of speculation (with little evidence of municipalities deciding to change the zoning plans), these developers attempt to keep their construction capacity in use at all times. Relating this data to the respondent categories, it is apparent that larger developers are more likely to see developing as a strategy that is second to constructing (Figure 4.2.2) and ensuring construction for their in-house capacity.

Size	0–100 dwellings	100–200 dwellings	> 200 dwellings
	Case 3, Case 10, Case 12, Case 14	Case 1	Case 2, Case 4, Case 5, Case 6, Case 7, Case 8, Case 9, Case 11, Case 13

Figure 4.2.2: Categorization of cases regarding size

This means that potential positions are often not under development for a long period of time (Case 5, 88). In this particular case, development is often not possible because the municipality does not wish to change the zoning plan for the position, even if the developer has the capacity to develop it. Furthermore, competition over land acquisition may drive up land prices. Based on the interviews, it is difficult to say how extensive or problematic this price increase is, but it is certainly an indicator of problems in the current land market.

In addition to having a construction firm, the size of the developer itself is important to understanding why developers practice land banking. The most important reason for the large developers to use land banking practices is the fact that they are better able to finance their own acquisition of positions, as almost all small developers need financing from outside of the company (Case 3, 40; Case 10, 155; Case 14, 128).

Third, the type of locations that are acquired by developers is important. Whether developers buy greenfield or brownfield locations can impact the extent to which they use land

banking practices. In this research, it was apparent that brownfield developers rarely acquire positions that the municipality has not yet publicly announced an intention to develop (Case 5, 319; Case 6, 29; Case 11, 77; Case 13, 37; Case 14, 132). According to literature, this is an indicator of land banking practices. The reason for this might be that brownfield developers are more likely than greenfield developers to acquire positions that are already far in the process of obtaining planning permission. This leaves little time to strategically delay the development to speculate on a value increases.

According to literature, land banking is sometimes used to influence local housing prices by ensuring that a large portion of the potential land positions are up for development. This allows developers to influence the price on the supply side by reducing construction output. This can be done by not starting development plans on potential sites so that the zoning plan will not be changed for a while. Alternatively, developers can reduce output on existing developments by slowing down the construction phases assigned to projects. The interview analysis suggests that this is not done by postponing plans for land positions that are on the shelf. All of the developers stated that this would be unwise in the current markets due to the immense demand for housing. House prices are extremely high at the moment, and the developers talked about the benefits of using this advantageous market situation. However, they also stated that the rising price of building materials makes them weary, and some admitted that they hold off on preparations until material prices fall (Case 1, 23; Case 2, 19; Case 3, 32; Case 8, 219; Case 12, 193; Case 14, 340). This is applicable for both developments that are already under construction and those that are about to start. Furthermore, some developers stated that they do not have enough construction capacity to deal with all of their current projects, although these developers tended to not be the same ones who mentioned not having enough construction capacity in general (Case 6, 37; Case 7). As such, developers may pause developments due to an increase in construction costs, but this is not necessarily due to locally increasing house prices. This does not rule out the possibility that developers restrict the construction output locally to their advantage, yet there was no evidence of this motive in the interviews conducted for this research. What it does mean is that land banking as a strategy is influenced by more than the benefits of the strategy alone. An increase in construction costs or any mutating priced factor involved in cost-benefit analyses for developments might be a (unintended) trigger that increases the number of positions that would be categorized as 'held for land banking purposes'. Additionally, this means that land banking as a strategic corporate practice might be influenced by the cyclical character of the housing market.

4.2.5 Land banking and phased building

According to literature, land banking and phased building are strongly related. With phased building, a developer can ensure construction capacity for use in the future and can regionally increase the prices of housing by influencing the supply side by simply choosing to build a capacity of approved plans later, thereby letting demand grow regionally. In the interviews conducted for this research, it was clear that many developers use phased building as a development strategy. Only one developer stated that he has never phased and never plans to phase his developments (Case 3, 43). The other respondents, who are all significant developers in the Netherlands, use phased building as a strategy. It was expected that the developers who work in urban environments would be less likely to build in phases because their developments are smaller and situated in larger regional markets and thus more easily incorporated into local housing markets. However, the interview analysis could not confirm this suspicion.

The capacity of local markets to take up housing into their stock is the main reason cited by the respondents for their use of phased building as a strategy. All but three developers (Case 3, Case

6 & Case 13) mentioned the capacity of the market to incorporate the new dwellings into the stock as a reason to use phased building, although the developers also mentioned several other reasons. For example, Case 3 mentioned a colleague who had worked with another developer on a project that was phased because of the municipality's lack of capacity to make land ready for construction (Case 3, 44). Therefore, the developer was obligated to use phased building. Phased building is thus sometimes dependent on other factors beyond the decisions of developers, which emphasizes that phased building is only an indicator of strategic land banking, not proof of strategic land banking

Another interesting reason for developers to use phased building in their developments is project financing. Every large developer stated that they will only build a development when 70% to 100% of the houses are sold to ensure that the project can be financed. This extra 1%–30% allows developers to sell the most profitable parts last, thereby ensuring that if housing prices go up, these parts will be sold for the highest prices. For example, Case 2 (31) explained that construction times for these profitable parts of developments are sometimes prolonged, even until 3 years (well beyond the average time that developments begin), to make a higher profit from rising house prices. This developer stated that this also works the other way around. If it is expected that housing prices will fall, developers will speed up construction to ensure the highest price for their newly constructed houses. Case 4 described a similar experience, stating that finances play a role in whether developers choose to build in phases or construct the entire project at once. For example, he described a situation in which three different buildings on the same plot were built one after the other, ensuring that each newly constructed building would finance the next (Case 4, 40). In this case, the most profitable part of the development was saved for last, as the development took place during a period in which it was profitable to wait for higher prices. Additionally, three cases (Case 5, 262; Case 9, 128; Case 12, 164) explained that construction capacity plays a role in the period of phasing and the amount of phases of a development. These developers either had a construction firm of their own or bought construction capacity elsewhere. In both instances, the developers stated that construction capacity in the Netherlands is currently in high demand. This impacts the time used by developers to build their developments and increases the possibility of constructing in phases.

4.2.6 Conclusion

Land banking is a phenomenon adopted by developers in this study for various reasons. The most common reason is to ensure future construction projects for their own construction firm. Each firm has a set construction capacity that is more or less secured with work from the projects of the development firm. Another reason for land banking is the speculative side of owning land that will potentially receive the municipal right to be developed in the near future. Phased building, which is linked to land banking, is a strategy that has been frequently adopted by the respondents. Although this link between land banking and phased building, which has been identified in literature, is strong, the respondents pointed out that they have different reasons for using a phased building strategy. They mentioned the uptake capacity of new housing into the local housing stock as the main reason to develop in phases. This also implies the use of development delays to drive up prices. Other reasons are financing phase-by-phase (with one phase financing the next), construction capacity and on-site limitations. Only a few developers stated that they have delayed the most profitable part of a development to the last phase based on future increases in housing prices. However, this research was unable to find proof of this.

4.3 Perception of land banking under a land tax

Developer behaviour under a land tax is likely to influence land banking as an overall practice. In particular, it is likely to influence the stalling of sites after developers have received planning permission to start construction. In this section, the effects of changes in developer

behaviour on land banking and the stalling of projects by developers are further explained. The implications of the potential changes in developer behaviour will then be considered in light of the current housing crisis and slow housing production. The broader implications of this land tax are important to understanding the effectiveness of the policy change proposed in this study.

4.3.1 Effect of the land tax on land banking

The effect of the proposed land tax on land banking as a practice of developers is an important topic in this research. Land banking is widely adopted by the developers who participated in the interviews. Although every participating developer denied having formally adopted land banking as a practice, they all described at least at one practice that either is or hints at land banking (see 4.1.1). Additionally, although the majority of the developers stated that they are willing to develop more sites, this does not mean they always intend to do so. For example, Case 1 (29) stated that they are willing to develop more sites until they are faced with economic hardship, such as the 2008 recession. Because of the possibility of running into financial feasibility problems for sites, developers are inclined to postpone developments to wait for better times financially, thereby diminishing a potential loss on the investment made on acquiring the sites. Instances in which developers do not proceed with developing sites might be instances in which the land tax will have an effect on projects that were already in the process of receiving planning permission.

Another factor that should be considered when discussing the potential effect of a land tax on land banking is the phenomenon of phased building. It is likely that developers will increasingly practice phased building under a land tax. For example, Case 10 (346) stated that he will be tempted to divide developments into many different phases to postpone making investments. This would allow him to dodge the land tax for the development and better follow his own land banking agenda. In most developments, planning departments have a say in how many phases a development will be divided into, and municipalities will therefore have some influence on the actions of the developer during the construction period. However, the time the developer takes to complete the different phases is the main concern in relation to the effectiveness of the land tax. One strategy that is expected to accompany the phased building strategy is delaying the planning approval procedure. According to the respondents, the moment developers decide it is in their interest to postpone the execution of a development, they are likely to delay the procedure. For example, Case 1 (21) and Case 9 (160) stated that they plan to slow the process of receiving approval for their permits for several projects due to recently rising construction costs. It is easy for them to do so because of the capacity shortages in planning departments across the country (Case 2, 49; Case 3, 34; Case 5, 102; Case 7, 21; Case 13, 461). Municipalities would rather utilize the extra time they are provided than take matters into their own hands and push the process of planning approval forward. The developers with a construction firm seem to largely be in support of the phenomenon of land banking. This is also a factor that hints at a low impact of the land tax on strategic land banking. The developers in this research expect to maintain their own development agendas (Case 9, 160). This makes it more difficult to counter developer speculation on land positions by approving plans according to the municipality's schedule. When a land tax is implemented, this might increase the likelihood that developers will choose to lay low in the process of applying for planning permission and permits for their developments, as mentioned above. An increase in the capacity of planning departments across the country might counter this likelihood that developers will intentionally delay projects. Municipalities will then be able to steer the process, create the agenda and plan project deadlines for the developments. By doing so, they will maintain the desired speed of the developments in the region and reduce the number of developments that are intentionally delayed by developers.

4.3.2 Effect of the proposed tax on housing production

The land tax will likely have no significant impact on housing production in the Netherlands. The overall agendas of developers regarding when and how to develop sites are expected to remain unchanged under the land tax. It is likely that through the use of delays, developers will be able to use the stages of housing production prior to planning approval in such a way that sites will reach the construction phase when the developers want them to (Case 9, 160). The influence of the land tax is therefore expected to be minor. Additionally, some developers in this research indicated that it would be easy to evade this tax. This could be done by making authorities believe that development has begun while actually stretching out the first stages of construction in a way that benefits the developer or cutting up development into several stages. For example, Case 7 (222–223) pointed out that he is willing to let a bulldozer work the site for a while just to fake the initiation of the development. It is possible that the land tax could prevent this from happening, but it does point out the lengths that developers are willing to go to in an effort to set their own schedule when it comes to their developments.

Another indicator of the low impact of the land tax is the fact that the developers in this research expect the impact of the tax on their firm to be minor. As such, they would be less inclined to change their corporate strategy in regard to housing production based on the implementation of the land tax (Case 1, 70; Case 5, 325; Case 7, 236; Case 9, 172; Case 12, 252; Case 13, 441). Of course, as mentioned previously, different economic circumstances might trigger a sense of urgency to begin construction within the two year period after receiving planning permission. However, it can be noted that almost all of the respondents have a construction firm (Figure 4.2.1) As such, one could argue that developers with a construction firm are less inclined to change their corporate strategy based on the implementation of a land tax. The reason for this, however, is something this research does not cover. In comparison, some respondents argued that the land tax would be fitting in relation to these financial circumstances (Case 7, 224; Case 9, 156 & 168). One respondent (Case 9, 168) recalled a situation in which another developer postponed development years after having received planning permission, much to the irritation of the local municipality, who expected the developer to immediately start the development. The respondent argued that the developer postponed all other developments because of the housing production caps adopted by the municipality itself. Such actions make it more difficult for a municipality to maintain a healthy regional housing stock.

According to this research, the most significant bottleneck in housing construction output is the capacity of authorities to grant planning permission for developments. The developers in this research stated that their bids to start a development are often rejected when applying for the planning permission process. According to the developers, this is due to the lack of resources at local planning departments. This, in addition to increasing environmental and social requirements for developments on a European and national level, can be seen as a reason for the struggles of municipalities. The developers stated that they are willing to increase their housing output but are often told to wait because there is no capacity to start the planning permission process on the planning department's side. If the planning authorities scale up the number of permits issued, this, in addition to the land tax, might encourage developers to produce housing and discourage them from speculating on land prices. Developers will then need to consider that they will need to develop a site at a period in time when it is not preferable economically.

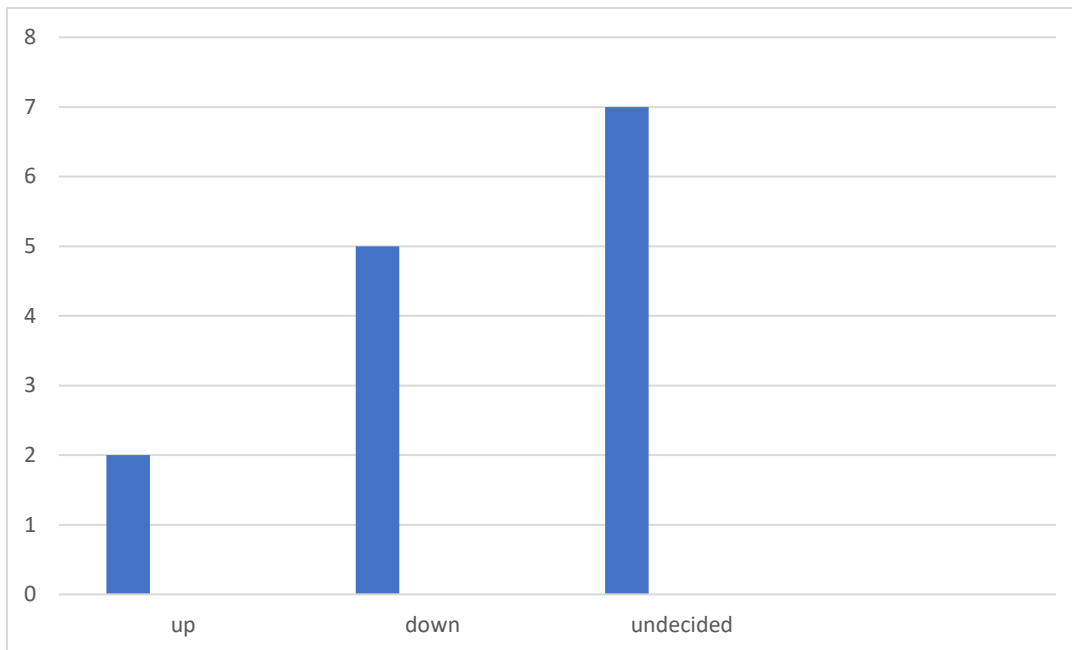
4.3.3 Land tax and perceived developer behaviour

Breaking down the conceptual model of relations between concepts relevant to this research, the first relation is between land tax perception and perceived developer behaviour. This relation is based on priced factors (cost evaluation, land prices and acquisition) and non-priced factors (risk perception and risk assessment). In this section, these factors will be discussed to further explain the relationship between the concepts by answering the research question 'What is the influence of a land tax on developer behaviour based on priced factors?'

The first priced factor that will be analysed to answer the first sub research question is cost evaluation. Respondents were asked how they would evaluate potential extra costs under a new land tax for existing and future projects. Almost all respondents stated that they will price the potential costs of a land tax into the StiKo (a form of residual value calculation) or other residual value calculation (Case 1, 70; Case 2, 52; Case 3, 69; Case 5, 326; Case 6, 114; Case 8, 272 & 291; Case 9, 156; Case 10, 346; Case 12, 243; Case 13, 448; Case 14, 427). Only two cases (Case 7, 230; Case 11, 236) would not incorporate the potential costs of the land tax into the residual value calculations of their projects. This is because upon receiving an explanation of the land tax, they stated that they would never be taxed because their projects and company would not qualify. This indicates that a majority of developers will be incentivised to avoid stalling projects on purpose after planning permission is received. The risk of paying the tax will be priced into the residual value calculations according to their own estimates. A few respondents (Case 3, 69; Case 4, 57 & 59; Case 7 230; Case 9, 158) stated that they believe the tax will help lower speculation on projects by developers, particularly when developers receive planning permission. Three respondent added that this might work best in more difficult financial times (Case 3, 18; Case 7, 225; Case 9, 158). The respondents added that this tax might have been beneficial during the 2008 financial crisis, as many developers stopped developing after having received planning permission during this time. It is likely that the tax would have impacted how many hard plan capacity projects were stalled.

In addition to cost evaluation, the respondents stated that the land tax should be high enough to lower the hard plan capacity (Case 2, 50; Case 4, 57; Case 5, 330; Case 9, 172; Case 10, 357). They noted that it should be higher than the value increase of land but not so high that developers do not want to risk receiving planning permission for their development due to a lack of financial viability or risk facing significant financial problems after having received planning permission because the project is not financially viable. Other respondents (Case 12, 230; Case 13, 448) argued that financial feasibility is subject to an even higher stress. They argued that the tax might have a negative impact on the actual output of housing produced. A developer can always delay the process of obtaining planning permission from the municipal council. This would allow them to avoid paying the tax for projects that are not financially viable, although it may ultimately cause them to lower the amount of houses built. One respondent (Case 9, 172) related the effectiveness of the tax rate to the state of the market. He stated that it is important to view the tax from this perspective. According to this respondent, setting the tax rate too high might be dangerous for the housing output of the market, as a good tax rate is dependent on the market's status.

The second priced factor that can influence developer behaviour due to the implementation of a land tax is the price of land. All respondents stated that this factor will influence their behaviour. What is interesting is their perceptions of how land prices would be influenced by the land tax. As shown in the graph below (Graph 2), the respondents' opinions of how the land tax will influence their behaviour depended on their perceptions of how the tax will influence land prices.



Graph 2: expected change in land prices, according to developers

Down: (Case 2, 54; Case 3, 64; Case 5,330; Case 8, 276; Case 14, 427)

Up: (Case 6, 122; Case 12, 243)

Undecided: (Case 1, Case 4, Case 7, Case 8, Case 9, Case 10, Case 11, Case 13)

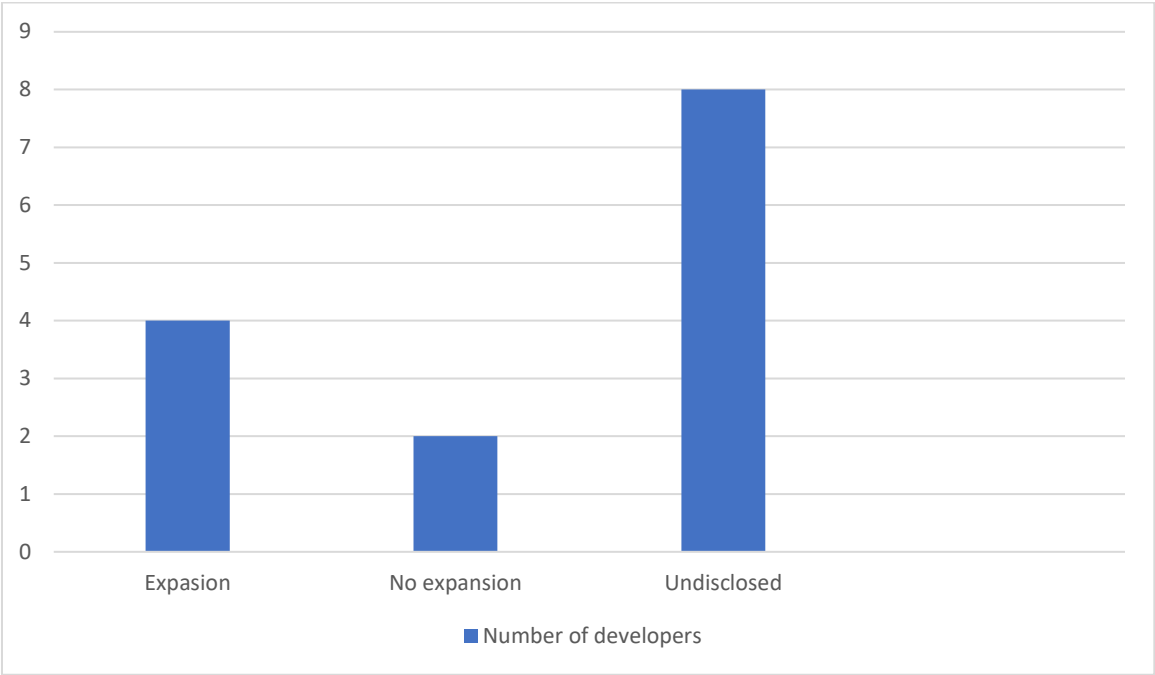
More respondents believed that land prices will fall due to the proposed land tax than to go up. This is predominantly because almost all of these respondents believed that the risk of paying the tax will be priced into the residual value calculation. This would allow them to pay less for the land position than choosing to not do so.

However, two respondents foresaw a rise in land prices. This is an unexpected outcome from a literature point of view, as previous studies have expected land prices to fall when a land tax is implemented. One explanation for this might be how new the concept was to the respondents. In fact, seven respondents were undecided about whether the land prices would rise or fall or could not answer the question with certainty. This also makes it difficult anticipate how developers will react to the implementation of the land tax based on changes in land prices. Based on the results of this research, it could be assumed that different developers will respond differently to the land tax. However, this might change when developers have the time to look further into the effects of the land tax on their company strategy and how this specific priced factor will affect the development of new company strategies in the future. One reason for developers to believe that the land tax will lead to higher land prices is that they see the practice of ‘developing’ as a source of income, meaning there will be more costs under the proposed land tax, with lower or the same benefits. This would lead to an increase in land prices.

Case 2 (54) provided more specifics with his opinion, stating that he expects land prices to fall due to developers pricing the risk of paying the land tax into the residual value and thus the amount of money they are willing to pay for a certain piece of land. Additionally, he linked the types of stakeholders who operate on the land market to the potential land tax. He stated that he has seen a change in the sort of investors in the land market. He referred to them as ‘*Branche vreemd*’, which translates to ‘origin outside of industry’. According to this respondent, these players have been buying into the market rather aggressively over the last five years. This means that the already over-heated land market has heated up even more. The land tax might influence this tendency of acquisition by stakeholders who have gained their capital outside of real estate. Case 2 also argued that this law might scare off these stakeholders because they are not able to develop land themselves, meaning they will be more prone to paying the tax than landowners who are actors in the real estate market.

A second abnormality that is related to land prices under a land tax is the fact that the OZB tax was mentioned in relation to the tax by Case 14 (427). According to this respondent, this link is important because the proposed land tax and the OZB tax on real estate (which is already in place) are complimentary to one another. As such, he believes that if the land tax is to be implemented, the two should exist together. In this way, the tax can have a desired effect by shortening the development process of real estate. Additionally, he stated that the OZB tax is already used to incentivise faster development after planning permission is received. He therefore argued that land prices can be influenced by using more tariffs and changes to the OZB tax, thereby enabling Dutch municipalities to use existing legislature to fix the problem of long development processes after granting developers planning permission for real estate projects.

The last priced factor related to the influence of a land tax on developer behaviour is the acquisition and sale of land positions. The respondents did not speak much on this subject. This indicates that the respondents believe the proposed land tax will not have much influence on company policies related to acquisition. The respondents who believed that the land tax will have a negative impact on their operations (Case 1, 70; Case 2, 49; Case 5, 315; Case 7, 218; Case 9, 172; Case 12, 252; Case 13, 441) stated that they will be impacted immediately. This includes an impact on the acquisition and sale of positions in the future when the land tax is implemented. As shown in the graph below (Graph 3), many of the respondents have a desire to let their company grow in terms of revenue or units delivered yearly.



Graph 3: developers’ expectations regarding company expansion (for developers who are able to share information on the issue)

No expansion (Case 2, 15; Case 11, 112)

Expansion (Case 4, 9; Case 5, 53; Case 10, 13; Case 13, 7)

This is interesting because it implies that these respondents do not believe the proposed land tax will influence their operations or company strategy. In other words, they believe the land tax will not slow or disrupt existing strategies related to the acquisition or sale of land positions. When

comparing this data to the categories assigned to the interviewees (Figure 4.2.1), it becomes apparent that all of the respondents who own a construction firm have a desire for expansion, with the exception of Case 10. This might indicate a call for an increase in construction capacity, which might indicate a bottleneck of the planning capacity of authorities. Contrary to this is Case 10's (353) remarks about the impact of the land tax on the acquisition strategy of his company. He believes that the land tax will have a negative impact on acquisition, as he believes that rising costs result in lower investment capital, which translates to less land positions to be bought.

The proposed land tax was also considered to have an impact on developer behaviour based on non-priced factors. The first of these non-priced factors is risk perception. However, it was difficult to obtain a full image of risk perception in relation to the land tax proposed in this study, as the respondents operate in different areas in the market, causing them to have varying perceptions of the tax's impact (Case 1, 70). Additionally, some developers are more prone to needing to pay the tax because they typically take longer than other developers to initiate construction after having received planning permission (Case 8, 280). Furthermore, the developers in this research had varying degrees of knowledge on the subject. To fully understand the implications of the land tax, it is possible that some developers would need to read more into the subject to determine how it would impact their business. Despite this, none of the developers felt that an implementation of the proposed land tax will have much of an influence on their corporate strategy. This could be a problem, as a goal of the tax should be to effectively change the strategies of developers. Alternatively, these developers could simply not be prone to paying the land tax because they typically begin construction on time, thus allowing them to avoid paying the land tax once it is implemented and creating no incentive for them to change their corporate strategy. Case 4 (53) explained this phenomenon well. He believes that his company will not be noticeably affected and that only a few developers will really change their strategy when the land tax is implemented. He believes that this is due to the profitability of the practice of land banking after having received planning permission. Regardless, he argued that this land tax should exceed the financial benefit of delaying construction after receiving planning permission. Another perceived risk is the effect of the tax on the land and real estate markets. Case 5 (325) argued that the tax will not be a significant risk for him to take into account. He foresees a potential backlash in the market as a more significant threat. Additionally, Case 6 (125) stated that market disruptions could lead to more delays in the development of housing projects, making it necessary to look more into these delays scientifically in order to predict them better. Contrary to these statements is Case 10's (353) remark about the impact of the land tax on corporate strategy. He believes that the land tax will have a negative impact on the acquisition of land positions. Compared to the other cases, his risk perception is different, as he made relatively bold statements regarding how his company will deal with this potential new risk like how acquisition will not change and how their developments will have started before the 24 months.

Furthermore, it is important to examine how the respondents assess the risk they will face as an agency under the land tax. Of particular importance is how the respondents calculate and price in this risk. Some of the developers believe they will be hardly affected by the tax (Case 1, 70; Case 5, 325; Case 7, 236). However, how these respondents would then assess the risk varied widely. Case 3 (66) stated that he will choose between different scenarios depending on the size of the land tax. His first choice would be to price in the scenario in which he must pay the tax while treating the scenario in which he is not required to pay the tax as a bonus. If the tax is low, he would take the risk and not price in any effect. He added that his current company strategy is already based on developing as quickly as possible. He is unable to make changes to ensure that he does not need to pay the land tax, as he is already doing as much as he can to start construction as soon as possible after having

received definitive planning permission for his projects. In comparison, Case 4 (57) stated that he believes developers will work even harder to start construction on projects early, leaving them with greater potential costs as a result of their efforts to meet the deadline of the land tax. As such, he expects that the land tax will cause housing prices to increase. Another respondent stated that he will assess the risk he will face based on his ability to limit the risk of needing to pay the land tax (Case 7, 235). This assessment includes the possibility of having no risk of needing to pay the tax, meaning he would not price in an effect of the land tax after it is implemented. Another interesting response to the risk assessment question was given by Case 9 (172). He is the only respondent who admitted that some of his positions might exceed the deadline of two years after receiving planning permission, meaning there will be a high risk of needing to pay the land tax if it is implemented. This means that he assesses the risk he faces per land position. Another respondent also assesses risk per land position (Case 8, 291). He stated that for projects that are already underway, it might be difficult to commence construction within the two-year period. This is where he sees the risk and the potential problems in his assessment. Another respondent stated that he will assess the risk he would face due to the land tax based on how the tax will be implemented, and he is particularly concerned about how municipalities will determine the value of land positions (Case 13, 428). He also is concerned about whether the tax will be charged to an owner even if they simply cannot build due to legal battles after having been granted definitive planning permission.

The last non-priced factor that can influence developer behaviour is habits (patterns in behaviour). In section 4.1.1, the participants' various reasons for performing land banking are explained. The section also explains how these land banking practices are incorporated into patterned behaviour. This is important to note because the respondents were asked about land banking practices as a corporate strategy and how often these practices occur. When asked about what they would change on the level of corporate strategy, the participants almost always mentioned only pricing the risk into their projects. When asked about the acquisition or resale of land positions, the respondents did not mention many changes that they would see being implemented based on the proposed land tax. This implies that the land tax will not have a significant impact on the way developers perform land banking practices or whether or not they will adopt these practices at all after the land tax is potentially implemented. One significant habit that was mentioned in relation to corporate strategy under the land tax was that many respondents (Case 1, 70; Case 2, 49; Case 5, 315; Case 7, 218; Case 9, 172; Case 12, 252; Case 13, 441) believe the land tax will not affect them. This is because, according to the respondents, they never wait longer than two years after having received planning permission to begin the construction of a project. It is plausible that developers in such a situation will not change their corporate strategy under a land tax, as there would be no need to further shorten this period in the process of development.

Construction capacity is also an important habit that could change under a land tax. This is because a developer needs enough construction capacity (either within the company or bought in) to make sure they stay within the two-year period after having received planning permission. Enough construction capacity means a greater chance of starting construction on time rather than risking a situation in which the developer does not have enough construction capacity. This could occur if there is a delay in another project or unforeseen circumstances on construction sites. Many of the respondents who have some type of construction firm stated that they develop to keep their construction capacity running (Case 1, 33; Case 2, 41; Case 5, 225; Case 9, 122; Case 10, 71; Case 11, 42; Case 14, 9). Furthermore, none of them stated that they will change their current practices or change the way in which they rely on these corporate strategies.

4.3.4 Conclusion

In this section, the effect of the land tax on strategic land banking and housing production was discussed in regard to risk perception and risk assessment. The impacts of the land tax on the

behaviour of developers was also discussed. The effect of the land tax on land banking can be summarized as minor due to the probability of developers following their own agenda for the development of their sites. Therefore, the likelihood that the land tax will lead to a decrease in delays over the entire course of development is expected to be low. The same can be said about the effect of the land tax on housing production. Although the tax might decrease the hard plan capacity in the short term, it is expected that developers will adapt their agenda for developments to the new situation under the land tax. Finally, the effects of a land tax on perceived developer behaviour was discussed. In general, developer behaviour is influenced by priced and non-priced factors. The respondents' perceptions of priced factors varied, but it is likely that the impacts of these factors will be incorporated into development projects. In terms of non-priced factors, habit persistence may have a particularly notable effect because it is important in real estate development in the Netherlands, as many developers are specialized in what and how they develop.

4.4 Policy discussion

A land tax is likely to be difficult to implement, even if it is slimmed down and only aimed at developer firms that own land positions with planning permission for a certain development, as was the case in this study. This research provides proof that developers use land banking strategically, as suggested in existing literature (Cochrane, Colenutt & Field, 2015). However, it does not provide answers as to the scale on which developers use land banking or where in the different stages of development they are most likely to use land banking tactics. However, it can be argued that developers generally use land banking throughout all stages of development. It can also be concluded that developers with a construction firm and greenfield developers are more prone to using land banking. Furthermore, the phenomenon of strategic land banking related to the proposed land banking policy and its effectiveness was something the developers were not happy about. They argued that they are already developing as quickly as they can; however, the data does not quite support this argument. Despite this, the occurrence of strategic land banking and the fact that, according to literature, its effects are unwanted (Bulan et al., 2009) (Capozza & Helsley, 1990) (Cunningham, 2006) (Grenadier, 1996) (Sommerville, 1999) (Wang & Zhou, 2006) (Williams, 1993) does not mean that the policy change will contribute to solving the problem in a manner that is efficient. One of the most important findings of this research is that regardless of how this law is implemented, it can be expected that developers will attempt to work around the tax in an effort to maintain their own agenda for which project to complete when. This could mean that the tax should span all of the different stages of development (acquisition to completion) or that the complete fiscal system should be changed to a land tax rather than a tax on assets on plots of land.

This brings up a discussion of the effectiveness of the proposed policy change. It should be noted that it is likely that delays during the development process between permission and completion will drop due to the tax. However, as explained, it is expected that developers will know how to work around the tax, which could prevent the tax from solving any part of the problem of low housing production. In this regard, it is important to note that developers will likely use the capacity problems of Dutch planning departments to ensure that their projects fit to their own agenda of completion under the land tax. Extra attention should be paid to developers who own a construction firm or produce more than 200 houses per year, as they are most likely to find ways to work around policy changes aimed at speeding up development by lowering land banking practices.

Chapter 5 Conclusion and discussion

This chapter will be devoted to answering the main research question and the four sub-questions. The conclusions will be based on the results presented in Chapter 4, although the sequence of information will be different to that presented in Chapter 4. The research questions are mainly based on the results regarding the relationships between the three concepts of land tax, perceived developer behaviour and land banking practices. Therefore, §5.4 and §5.5 will be most important to the conclusions.

5.1 What is the influence of a land tax on the perceived company strategy based on priced factors?

It is estimated that the land tax will have a widespread influence on the perceived company strategy and developer behaviour among the respondents in this research. The first priced factor that was analysed in this research is cost evaluation. Almost all respondents stated that they will price in the potential costs of a land tax into the StiKo (a form of residual value calculation) or other residual value calculations. The reason for this is that most believe they would rarely be taxed, as their projects and company will not qualify as entities on whom this tax would be collected. This will make it easy to incorporate the (low) estimated costs into the project finances. As such, a majority of developers will be incentivised to avoid stalling projects on purpose after planning permission is received. Thus, the land tax is perceived to have a widespread impact among the respondents, although this impact is perceived to be low. The respondents suggested that a different international financial situation, such as the 2008 financial crisis, might change the severity of the tax's impact in relation to unintended delays based on the financial viability of projects that have received planning permission. In relation to cost evaluation, the impact of the land tax on financial viability was unexpected. The tax may have a negative impact on the actual output of housing produced. A developer could delay the process of obtaining planning permission from the municipal council. In this way they would not need to pay the tax for projects that are not financially viable, although this will likely lower the number of houses built annually.

The second priced factor that may influence perceived developer behaviour under a land tax is the price of land. This research found that this influence of a land tax on perceived developer behaviour differed based on the influence of the tax on the price of land. The predominant reason for developers to believe that land prices will fall under the implementation of the proposed land tax is the fact that most respondents expect to price the risk of paying the tax into residual value calculations. This would allow developers to pay less for the land position. Namely, more respondents foresaw a dip in land prices than respondents that expected higher land prices. One explanation for this might be how new the concept is to the respondents. Based on the results of this research, it could be assumed that developers will respond differently to the land tax. However, this might change when developers are given the time to better examine the effects of the land tax on their company strategy and how this specific priced factor will be taken into account when developing new company strategies in the future.

The last priced factor that is discussed in relation to the influence of a land tax on developer behaviour is the acquisition and sale of land positions. The respondents largely believe that the land tax will not have much of an impact on this aspect, particularly when it comes to company strategies. The respondents who believe that the land tax will have a negative impact on their operations believe that they will be impacted immediately. As such, their acquisition and sale of future positions will likely be affected. The findings also indicate that there is an overall ambition among the

respondents to allow their company to grow in terms of revenue and units delivered yearly. As such, they believe the proposed land tax could influence their operations and chosen company strategy.

5.2 What is the influence of a land tax on the perceived company strategy on non-priced factors?

Non-priced factors that may influence perceived developer behaviour under a newly implemented land tax include risk perception, risk assessment and habit-based behaviour. Risk perception related to the land tax was difficult to obtain a full image of in this research. Some developers are more prone to needing to pay the tax, as they typically take longer to initiate construction after having received planning permission. Additionally, developers all have different amounts of knowledge on the subject. However, none of the developers seemed to feel that an implementation of the proposed land tax will have much influence on their corporate strategy. This could be a problem, as a change in strategy should be accomplished for the implementation of the tax to be effective. Alternatively, these developers may simply not be prone to paying the land tax because they typically begin construction on time, thereby allowing them to avoid needing to pay the land tax once it is implemented and creating no incentive for them to change their corporate strategy. Most respondents perceived the measure by comparing it to other measures. When doing so, it was noted that they perceived the risks to be minor. This was sometimes because they believe they will not be affected by the tax and sometimes because they believe they can avoid having to pay the tax.

How respondents assess the risk they face as an agency under the land tax is the second non-priced factor examined in this research. As previously discussed, risk perception and risk assessment are complementary to one another. As such, it was important to examine how willingly the respondents are to calculate and price in the risk they will face. Notably, some developers believe they will hardly be affected by the tax and thus do not see much of a need to price in an effect. How the respondents plan to assess the risk varied widely. Furthermore, other than concerns about potential costs, the concerns and objections of the respondents varied so much that it is difficult to generalize their responses. It is safe to say that because individual developers differ greatly, each developer is likely to have a different point of view.

The last non-priced factor that may influence developer behaviour based on the land tax is habits (patterns in behaviour). One strong habit that was identified when discussing corporate strategy under a land tax was that the developers often claimed to never wait longer than two years after having received planning permission to begin the construction of a project. As such, it is plausible that these developers will not change their corporate strategy under a land tax, as there would be no need to further shorten this period in the process of developing a project. Construction capacity is also an important habit that may change under the land tax. This is because developers need enough construction capacity to ensure that they stay within the two-year period after having received planning permission. Enough construction capacity means a greater chance of beginning construction in time, thus avoiding the risk of a situation in which the developer does not have adequate construction capacity. The respondents with their own construction firm also stated that they develop to keep their construction capacity running. However, none of them stated that they will change their current practices or change the way in which they rely on these corporate strategies. It is therefore safe to say that many of these habits will remain under a land tax.

5.3 What are the effects of priced and non-priced factored perceptions on developers' strategies of land banking?

The priced and non-priced factors defined in this research can influence the decision-making process (behaviour) of developers. The priced factors that have an influence on behaviour can also have an impact on housing development. The findings of this research indicate that changes in the land and housing markets are significant factors which explain perceived developer behaviour. These changes can influence the speed of developments and the decision as to whether or not to start developments at all. Developments that are under financial pressure due to costs rising faster than housing prices are likely to be postponed. This makes the land tax an extra stress that must be considered by nearly all of the developers in this research. As such, it is likely that when financial viability becomes a problem in projects, a land tax will only postpone development rather than speeding up the housing production. The decision to proceed with projects is made at several points in the development process: before acquisition, before application for planning permission and after approval has been received. With this in mind, it is likely that in financially difficult times, a land tax will put pressure on housing production. It is also likely to make the housing and land markets even more subject to a cyclical character than they already are.

Another financial factor that has a significant influence on decision-making by developers, according to this research, is value increases of land positions that are already in possession. This research found that most respondents incorporate value changes of land positions over the expected development period into their financial viability assessments for their projects. This indicates that developers sometimes hold land positions for a longer period of time than is necessary for the development period. This also makes it likely that with an expected decrease in land prices after the implementation of the proposed land tax, the financial viability of existing projects might worsen. This fact may also weigh down housing production.

In addition to priced factors, non-priced factors can influence developer behaviour by forming patterns in their decision-making. The most important non-priced factor that can influence development is habit persistence. The adoption of a certain strategy in the past influences whether or not developers will choose to adopting that same or a new strategy when reassessing their current strategy. Although the interviewees indicated that they reassess their strategy multiple times, it is apparent that developers typically stick to what they are good at. Of course, this does not provide evidence of habit persistence specifically in relation to the proposed land tax. However, it does indicate how habit persistence is interwoven into the strategies of developers. As such, it also indicates that the land tax may have a low impact.

Risk aversion is another non-priced factor that can be used to describe developer behaviour. According to the findings of this research, it can be argued that almost every actor shows risk averse behaviour in their company strategy. Therefore, the relation between risk averse behaviour and the proposed land tax is important to consider. This research found that the respondents were most risk averse when talking about the land tax in the context of evasion. Due to their expectation that the land tax will have a rather low impact on their practices, a majority thought little of the tax, believing it can be evaded. This may indicate that the land tax will have a small impact on housing production.

5.4 What is the effect of perceived developer strategy under a land tax on housing production?

The land tax will likely have no significant positive impact on housing production in the Netherlands. Overall, the agendas of developers in regard to when and how they develop sites are expected to remain unchanged under the land tax. The reason for this is the likely continuation of

land banking practices. Additionally, the developers in this research expressed that evading this tax will be easy. This can be done by making authorities believe that development has begun while in reality stretching out the first stages of construction or by cutting up development into phases through the use of phased construction. Another indicator of the low impact of the tax is the fact that the developers expect its impact on their firm to be minor. This makes them less inclined to change their corporate strategy in regard to housing production based on the implementation of the land tax. Of course, in different economic circumstances, the land tax might trigger a sense of urgency to begin construction within the two-year period after having received planning permission. According to this research, the most significant bottleneck in housing construction output is the capacity of authorities to give out planning permission for developments. The developers in this research stated that their bids to start a development are often rejected when applying for planning permission. According to the developers, this is due to the lack of resources at local planning departments. In addition to increasing environmental and social requirements on the European and national levels, this could explain the struggles faced by municipalities. The developers in this research stated that they are willing to increase their housing output but are often told to wait because of a lack of capacity to start the planning permission process in the planning department. If planning authorities scale up the amount of permits issued, this, in combination with the land tax, might encourage developers to increase housing production and discourage developers from speculating on land prices. Maintaining the agendas of municipalities in regard to development might then be something that is achievable.

5.5 Main research question: What influence does developer perception of a land tax have on land banking practices after receiving planning permission?

Land banking is a widely adopted practice, as suggested in the results of this research. Due to financial viability problems for sites that are up for development, developers are often inclined to postpone developments to wait for better times financially to diminish a potential loss on the investment made on acquiring the sites. This further encourages developers to perform land banking practices. Some developers suggest not proceeding with the development of sites when it is difficult to finance projects, such as during the 2008 recession. With this in mind, it is possible that the land tax will have the best positive effect on projects that are already far into the process of receiving planning permission or in the process of being realized. This could help to lower the occurrence of land banking practices.

Another factor that should be considered when discussing the perceived effect of the land tax on land banking is the phenomenon of phased building. The findings of this research indicate that developers are likely to practice phased building under a land tax. The participants suggested that phased construction can be used to evade the land tax for a significant portion of the development. Furthermore, this is likely to be accompanied by delays in the planning approval procedure. The moment developers decide that it is in their best interest to postpone the execution of the development, they are likely to delay the procedure. Municipalities that are unable to cope with the capacity problems in the urban planning departments will likely use the time they are given as a result of these delays to proceed with the process of planning approval for ongoing projects in their own agendas. By doing so, authorities give away their development agenda to developers, which is often under a significant amount of pressure, to a party that does not always feel that same pressure, as they might be inclined to postpone developments for their own financial wellbeing.

All of these factors indicate that the land tax will have a low impact on the practice strategic land banking by developers. Developers are expected to be able to maintain their own agendas in regard to when to develop or whether or not to develop at all. When a land tax is implemented, it is

expected to increase instances of developers choosing to lay low in the process of applying for planning permission and permits for their developments. An increase in planning department capacity throughout the country might counter this likelihood of developers intentionally delaying projects. Municipalities will then be able to steer the process, make the agenda and plan the project deadlines for the developments. By doing so, they will maintain the desired speed of housing production in the region and reduce instances of developments being intentional delayed by their developers. The most significant bottleneck in housing construction output and land banking, according to this research, is the capacity of authorities to give out planning permission for developments. The developers in this research stated that their bids to begin a development are often rejected when applying for the planning permission process. According to the developers, this is due to a lack of resources at local planning departments. In addition to increasing environmental and social requirements on the European and national levels, this may explain the struggles faced by municipalities. The developers in this research argued that they are willing to increase their housing output but are often told to wait due to a lack of capacity to start the planning permission process at the planning department. If planning authorities scale up the amount of permits issued, this, in combination with the land tax, might encourage developers to increase housing production and discourage them from speculating on land prices. Maintaining the development agendas of municipalities might then be something that is achievable. However, concerns about potential tax evasion, discouragement from developing and the low impact of the tax on current practices are factors that the land tax will still need to overcome before steps can be made toward implementation.

5.6 Reflections and recommendations

This section is dedicated to discussing the methodology and results together with recommendations for future research and policy. It elaborates on the relation of research and its findings to the scientific context. By doing so, it clarifies where the scientific value of this research lies and how the scientific accuracy should be interpreted.

5.6.1 Reflection on theory

The claim that developers practice land banking in general after having received planning permission is insufficiently empirically proven in this study, as it was difficult to make hard statements regarding the subject. Literature suggest that land banking does occur, but proof is difficult to find when looking into the developer perspective. This is largely because developers are often unwilling to discuss when they have practiced land banking. The current research nonetheless provides minor empirical proof of developers practising land banking on land positions that have obtained planning approval. A few authors (Adams, Leishman & Moore, 2009; McAllister et al., 2016) have put forward a broad definition of land banking that suggests it occurs at this particular point in the development process. Additionally, the figures on the unrealised plan capacity (RIGO, 2022) add to this narrative, but there is no real empirical evidence of the occurrence of this practice. This study only found clues or suggestions that developers use the timeframe of projects to their advantage. The theory section of this research would have been more complete if empirical evidence of the practice was found, although the theories do not necessarily need to be changed according to the findings of this research. The study only adds to the narrative that the speed of housing production could increase if developers would not benefit financially from delaying projects. It also adds to the narrative that developers with a construction firm and those that are larger in scale (> 200 houses a year) are more likely to practice land banking (Adams, Leishman & Moore, 2009; McAllister et al. 2016). In regard to whether or not a land tax will prevent land banking (Van der Krabben, 2021), it

should be noted that this land tax will need to cover not only the development process but also the entire period of development from acquisition to completion.

5.6.2 Limitations and reflections on methodology

The results of this research are based on a one-sided story from developers. In reality, there are many more stakeholders involved in the process of housing production and the broader development process. Of course, the research is backed by literature that suggests that land banking practices do occur after receiving planning permission, but this is also proof that broader empirical evidence is necessary. For instance, an inclusion of the views of municipal planning authorities could shed a different light on the concept of land banking.

Another factor that must be considered when reflecting on the methodology used in this research is that the conceptual framework and empirical data are based on the perceptions of developers in regard to the concept of a land tax. As such, the statements drawn from the data may not be completely accurate. The data is suggestive in nature, and the findings are therefore explanatory. Empirical research should further unravel developer behaviour under a land tax.

Finally, it could be argued that this research setup was the only correct way to answer the research questions due to the limitations of conducting research in the form of a master thesis, a lack of funds and limited time and resources. The most important aspect of this research was the acquisition of data by examining the decision-making processes of various developers regarding the development process. This not only makes it easier to compare cases but also reduces the suggestive nature of data based on developers' perceptions. Additionally, the categorization of developers as greenfield and brownfield developers should make it more clear who is most likely to change their behaviour due to the land tax. However, this research was unable to completely categorize all of the participants because of incomplete data from the respondents.

The results of this research are based on interviews with developers. As previously mentioned, the subject under investigation is sensitive for this group. The developers would be exposing their own practice of strategically delaying developments, which is not helpful to the current housing crisis. Therefore, it was expected that the developers would not give full and complete answers in response to sensitive questions. Although the questions were formulated to make them less sensitive, the research subject remains highly sensitive for the given population.

5.6.3 Recommendations

Based on the results of this thesis, the most important and apparent recommendation for further research is related to the hurdles that must be taken into account before implementing the land tax as a policy measure. It would be important to consider tax evasion problems and impact assessments related to the tax rate to obtain a clearer picture of its effectiveness and impact. This research also highlights potential unintended consequences of the tax, such as developers delaying the planning approval process in an effort to evade the tax. Further research should be conducted on the possibility of incorporating a penalty clause in the anterior agreement of developments nationwide as a substitute for the land tax concept. This might be better fitting to the problem, as it could remove the aforementioned doubts and limitations of the land tax. Implementing a policy change in the anterior agreement should have a more direct impact on developer behaviour and decision-making, ensuring that developers agrees to the terms before beginning development. Follow up research could also be aimed at providing empirical proof of developers practicing land banking after receiving planning permission. Although data from this research confirms the existence of the practice, research specifically tasked with answering this question would help further research on land banking. Finally, knowledge on this subject should be further extended through market

research. Better understanding who holds what pieces of land and who sells or buys them to or from developers would provide a much clearer and detailed insight into the practices and characterisations of developers.

Some additional recommendations can also be made for policy makers and municipalities. First, it should be noted that this study confirms the necessity of having a functioning and well-proportioned planning department to fit the development demand. Developers do delay housing production strategically, but planning departments also give developers all the time they need to do so. It is important for departments to live up to the demand by setting the agenda for when developments are to be finished, especially given the societal damage caused by the current housing crisis. Furthermore, if a policy intervention is considered, it should be an all-encompassing measure for the entire period of development. Otherwise, developers are expected to work around the measure.

References

- Abel, A., (1990). Asset prices under habit formation and catching up with the Joneses.
- Adams, D., Disberry, A., Hutchison, N., & Munjoma, T., (2001) Urban redevelopment: contextual influences and landowner behaviour, *Journal of Property Research*, 18:3, 217-234, DOI: 10.1080/09599910110060028
- Adams, D., Leishman, C & Moore, C., (2009). Why not build faster?: Explaining the speed at which British house-builders develop new homes for owner-occupation, in *Town Planning Review*, 80(3), 291-314.
- Antwi, A., & Henneberry, J., (1995). Developers, non-linearity and asymmetry in the development cycle. *Journal of Property Research*, 12(3), 217-239
- Baldi, F., (2013). Valuing a greenfield real estate property development project: a real options approach. *Journal of European real estate research*.
- Binnenlandse zaken en Koninkrijkrelaties. (2021). Staat van de woningmarkt.
- Boelhouwer, P., & Hoekstra, J., (2009). Towards a Better Balance on the Dutch Housing Market? Analysis and Policy Propositions. *European Journal of Housing Policy*, 9(4), 457–475. <https://doi.org/10.1080/14616710903357235>
- Buijs, M., & Wolf, C., (2019). *Stand van de Bouw*. Amsterdam: ABN AMRO.
- Buijs, M., (2019). Waarom we de komende tijd geen 75.000 woningen per jaar bouwen. Retrieved from: <https://www.gebiedsontwikkeling.nu/artikelen/waarom-74-we-de-komende-tijd-geen-75000-woningen-jaar-bouwen/>
- Buitelaar, E., & van Schie, M., (2018). Bouwen niet verboden. *Ruimte en Wonen*. Retrieved from: <https://www.ruimteenwonen.nl/bouwen-niet-verboden>
- Buitelaar, E., (2019). Versnelling van de woningbouw : van korte- naar langetermijnperspectief. *Real Estate Research Quarterly*, (2), 5–11.
- Bulan, L., Mayer, C., & Somerville, C. T., (2009). Irreversible investment, real options, and competition: Evidence from real estate development. *Journal of Urban Economics*, 65(3), 237–251. <https://doi.org/10.1016/j.jue.2008.03.003>
- Capozza, D. R., & Helsley, R. W., (1990). The stochastic city. *Journal of Urban Economics*, 28(2), 187–203. [https://doi.org/10.1016/0094-1190\(90\)90050-w](https://doi.org/10.1016/0094-1190(90)90050-w)
- Centraal Bureau voor de Statistiek., (2018). Oplpend personeelstekort bij bedrijven. Retrieved from: <https://www.cbs.nl/nl-nl/nieuws/2018/33/oplopend-personeelstekort-bij-bedrijven>
- Cochrane, A., Colenutt, R., and Field, M., (2015) Governing the ungovernable: Spatial policy, markets and volume housebuilding in a growth region. *Policy and Politics* 43(4): 527–544.

- Cunningham, C. R., (2006). House price uncertainty, timing of development, and vacant land prices: Evidence for real options in Seattle. *Journal of Urban Economics*, 59(1), 1–31. <https://doi.org/10.1016/j.jue.2005.08.003>
- De Nederlandse Bank., (2021). Stevig economisch herstel, maar kwetsbaarheden nemen toe. retrieved from: <https://www.dnb.nl/actueel/algemeen-nieuws/persberichten-2021/stevig-economisch-herstel-maar-kwetsbaarheden-nemen-toe/>
- De Nederlandse Bank., (2021). 'De woningmarkt' retrieved from: <https://www.dnb.nl/actuele-economische-vraagstukken/woningmarkt/>
- Groenemeijer., L., Gopal, K., Stuart-Fox, M., Leeuwen, G., Omtzigt, D. (29 juni 2021). Vooruitzichten bevolking, huishoudens en woningmarkt. ABF Research
- Healey, P., (1991) Models of the development process: a review. *Journal of Property Research*, 8, pp. 219–238. <https://www.acm.nl/sites/default/files/documents/de-werking-van-de-grondmarkt.pdf>
- Stiglitz, J., (2015). "The Origins of Inequality, And Policies to Contain It" (PDF). *National Tax Journal*. June 2015, 68 (2): 425–448.
- Kerstens, M., Nauta, C., Stok, J., (2020) Het kraakt en het piept in het fysiek domein: Onderzoek naar de uitvoeringskracht van gemeenten in het fysieke domein. Vereniging Nederlandse gemeenten
- Kimball, M. S., (1993). Standard Risk Aversion. *Econometrica*, 61(3), 589–611. <https://doi.org/10.2307/2951719>
- McAllister, P., Street, E., & Wyatt, P., (2016). An empirical investigation of stalled residential sites in England. *Planning Practice & Research*, 31(2), 132–153. <https://doi.org/10.1080/02697459.2015.1115658>
- Michielsen, T., Groot, S., & van Maarseveen, R., (2017). Prijselasticiteit van het woningaanbod. Den Haag: Centraal Planbureau.
- Razak, M., Khalid, H., Mohamad, A., (2018) Speculative Behaviour in Vacant Land Development: Evidence for Real Options in Malaysia. Retrieved from: <https://doi-org.ru.idm.oclc.org/10.1111/deve.12184>
- Ott, S. H., Hughen, W. K., & Read, D. C., (2011). Optimal Phasing and Inventory Decisions for Large-Scale Residential Development Projects. *The Journal of Real Estate Finance and Economics*, 45(4), 888–918. <https://doi.org/10.1007/s11146-011-9299-y>
- RIGO., (2022) Samenvatting uitkomsten monitor woningbouwcapaciteit 2022 retrieved from: <https://plancapaciteit.nl/>
- Somerville, C. T., (1999). The Industrial Organization of Housing Supply: Market Activity, Land Supply and the Size of Homebuilder Firms. *Real Estate Economics*, 27(4), 669–694. <https://doi.org/10.1111/1540-6229.00788>
- Spit, T., & Zoete, P., (2016). *Planologie: Een wetenschappelijke introductie in de ruimtelijke ordening in Nederland* (1st edition). Coöperatie In Planning U.A.
- Swank, J., Kakes, J., & Tieman, A. F. (2003). *The Housing Ladder, Taxation, and Borrowing Constraints*. Amsterdam: De Nederlandsche Bank.
- van der Krabben, E., (2021) *De werking van de grondmarkt: Gevolgen voor woningbouw en functioneren woningmarkt*, Den Haag: ACM.
- van Thiel, S. (2014). *Research Methods in Public Administration and Public Management: An introduction* (1st ed.). Routledge. <https://doi.org/10.4324/9780203078525>
- Wang, K., & Zhou, Y., (2006). Equilibrium Real Options Exercise Strategies with Multiple Players: The Case of Real Estate Markets. *Real Estate Economics*, 34(1), 1–49. <https://doi.org/10.1111/j.1540-6229.2006.00158.x>
- Webb, M., (2013). "[How a levy based on location values could be the perfect tax](#)". *Financial Times*. Retrieved on 4 April 2022.

- White, P., (1985). Land Availability, Land Banking and the Price of Land for Housing: a Review of Recent Debates. *Land Development Studies*, 3(2), 101-111. <https://doi.org/10.1080/02640828608723904>
- White, P., (1986) Land availability, land banking and the price of land for housing: A review of recent debates. *Land Development Studies*, 3, pp. 101–111.
- Williams, J. T., (1993). Equilibrium and Options on Real Assets. *Review of Financial Studies*, 6(4), 825–850. <https://doi.org/10.1093/rfs/6.4.825>