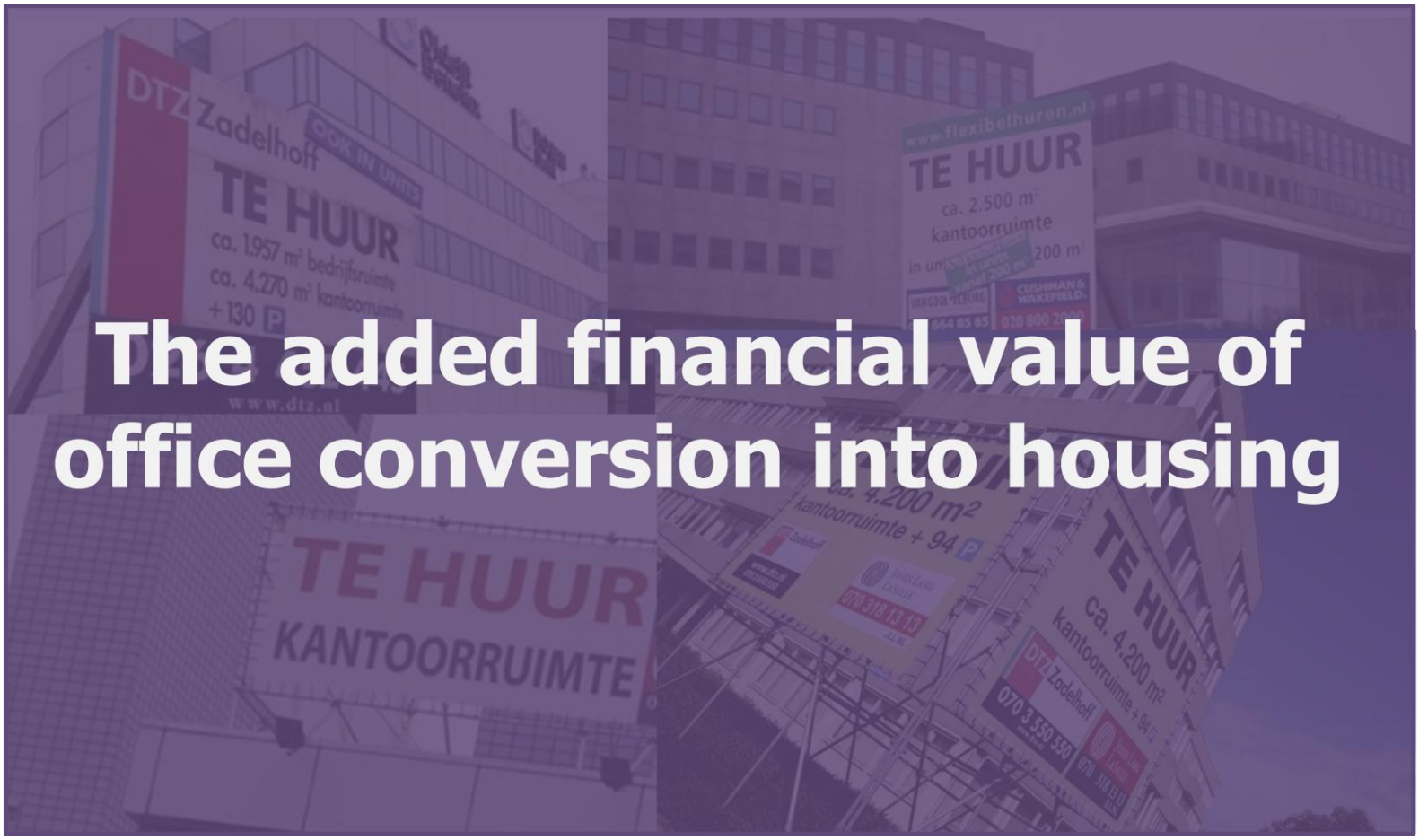

The added financial value of office conversion into housing

P5 Report

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4232437
15 January 2015

Colophon

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Preface

Since my early childhood I had a *dream*; I wanted to gain a Masters degree. As most little girls would like to become a nurse or a teacher, my goal was already set in order to achieve this. I have always been extremely motivated and loved studying. Challenging and developing myself, is something that I will never stop doing.

Real estate development is a profession that, from the moment I started my master Real Estate & Housing, caught my eye. Throughout the semesters I have gotten more and more enthusiastic about this profession and up until now; I'm overenthusiastic to start a career as a real estate developer. During my studies at the Technical University of Delft I noticed a changing real estate market in which re-development has become very relevant. In order to prepare myself for the next phase in my life I have made a huge effort on the subjects that I believe I needed to learn, before starting this next phase.

This brings me to my topic; *added financial value of adaptive re-use*. During this research I have dived into the project (re)development field with the goal of showing the various actors that something has to be done about the structural office vacancy.

I would not have been able to finish my graduation research with the support of many others. Firstly, I would like to thank all experts willing to corporate in this research. Secondly, I would like to thank the NEPROM, NRP and IVBN for participating in my survey research.

I would like to announce a special thanks to my mentors; Hilde RemØy and Philip Koppels, for their extremely informative meetings and guidance through my research period. Then I would like to thank Maarten Hercules, for his unconditional support and believe in my skills. I would like to thank my parents for their support and help. Finally, for my brother and sister who always believed in me and cheered me up, I hope this work will be an inspiration.

Enjoy Reading!

Alyssa Kraag
Delft, January 2015

Management Summary

Introduction

The current Dutch office market shows a major oversupply (15.7%; 7.3 million square meters) of office space. 60% of this oversupplied office space is structurally vacant, which means these offices are vacant for longer than three years with no prospect of future use (DTZ Zadelhoff, 2014). In numbers this counts for 4.38 million square meter structural vacant office space. These rates are high considering that 3–8% is regarded as a 'normal vacancy' rate necessary for market conditions to function. Structural vacancy will increase in the upcoming years as 1) there is a lot of hidden vacancy as a consequence of the new ways of working in which employees use less square meters and 2) a shrinking working population. This characterizes the current real estate market as a replacement market in which there is no further need for expansion.

The high vacancy rate mostly concentrates in older buildings which that are abandoned since new buildings are preferred. Increasing vacancy confronts many investors: due to oversupply of offices, the rental value barely develops which decreases the value development of the property. The indirect return deriving from the value development of the underlying asset has been highly volatile in the last years, with periods of value growth interspersed with periods of sharp decline. Devaluation of assets is problematic due to the price elasticity of the real estate market and the high percentages of debt sealed on these assets. However, property owners have several options to react on structurally vacant office buildings: consolidation, renovation or upgrading, demolition and newly-build, selling the building or programmatic conversion.

Conversion into housing can contribute to the expansion of the housing supply and at the same time offer a solution for office buildings that are no longer eligible for the office function. Yet, postponing and denial are still common used strategies by offices owners. Financial motives and the project complexity of adaptive re-use are one of the crucial barriers to entry this sector of property development. Financially unfeasibility of conversion is usually caused by a difference in the perceived value of vacant offices. The residual value a developer would pay for a property, often is not in line with the price (the capitalized rental value) that the investor desires to receive. For that reason, this research is focusing on to which extent converting structurally vacant offices into residential use adds financial value to the property. Furthermore, this research explores who appropriates this added financial value. This results in the main research question:

To which extent does office conversion into residential use add financial value to real estate and by who is this added value appropriated?

The findings of this research will give more insight into the financial feasibility of office conversion and the position of the various actors involved. The target groups of this research are; the real estate investor, developer and new investor (i.e. owner/user).

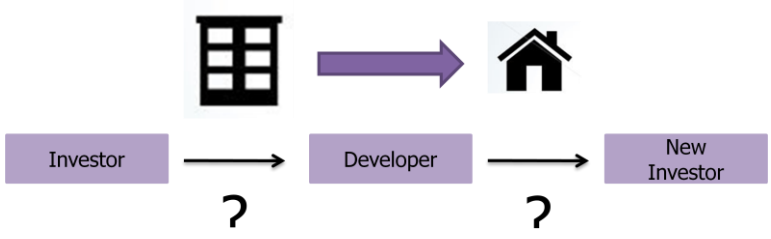

Figure 1: Research target group

Research Methodology

In order to answer this research question, a literature review is conducted which is used to create a context for the empirical part of this research. The empirical part contains a case study design combined with a cross-sectional design: mixed methods research. Combining quantitative and qualitative research has a triangulation

wherein results of an investigation of one method can be cross-checked by the results of the other research method. In addition, expert interviews were conducted in order to form hypothesis.

Data collection of the case studies was coded in Atlas.ti. The coded data was then used to build network schemes in order to analyze the three cases. Data collection of the survey is done online with Google Forms. The questionnaire is spread by NEPROM, NRP and IVBN. The program IBM SPSS Statistics 22 is used to analyze the data. On account of the digital questionnaire made with Google Forms, it was ensured that the results could be loaded in the analysis program SPSS without pretreatment. As a result of the response rate of 19%, an univariate analysis is used to analyze the data (descriptive statistics in SPSS).

Results Literature

Adaptive reuse is a complex process consisting of many interrelated parts (Andriessen, 2007; Kurul, 2007; Williams, 1999). The increased complexity is a crucial barrier for actors to participate in this field of real estate development (Kurul, 2007). This project complexity remains to be an issue that has a strong influence on investment decisions regardless of the strength of the market (Freer et al., 1999 cited in Kurul, 2007, p.555). Furthermore, the various actors involved in a conversion process have little affinity with other actors, which makes the process more complex. In order to facilitate investment decisions which are based on objective assessment of risk, complexity, cost and value, it is necessary to map out the investors'/developers' perception of these variables (Kurul, 2007), figure 1:

Investors rarely participate in conversion projects because they have a certain distance to the market. However, structural vacancy starts in the portfolio of an investor but is not always experienced as a problem when the major part of the portfolio or building is not vacant and yields a positive return (Remøy, 2010; van Elp & Zuidema, 2010). Besides that, conversion is not an exciting proposition for many building owners as conversion "means that the value of the building for office use has dropped so dramatically that a residential conversion becomes economically viable" (Heat, 2001, p. 175). From an investors point of view conversions are scare due to; financial infeasibility, investors do not develop, functional separation of property real estate market and unclear possibilities of conversion (Remøy & van der Voordt, 2014; Sprakel & Vink, 2007).

Besides conversion, an investor can sell his structurally vacant office building to a developer. The developer can initiate a conversion. However, there is an obstacle among investors and developers which is the different perspective of residual value and market value of the building (Remøy, 2010). Structurally vacant office buildings are valued based on the income approach, described by the potential rental income. Appraising according to the income approach gives an overestimation of the market value of the structurally vacant property (Rodermond, 2011). Developers calculate residually, which makes the calculated value through the income approach too high for developers. Investors perceive the developers calculated value as too low.

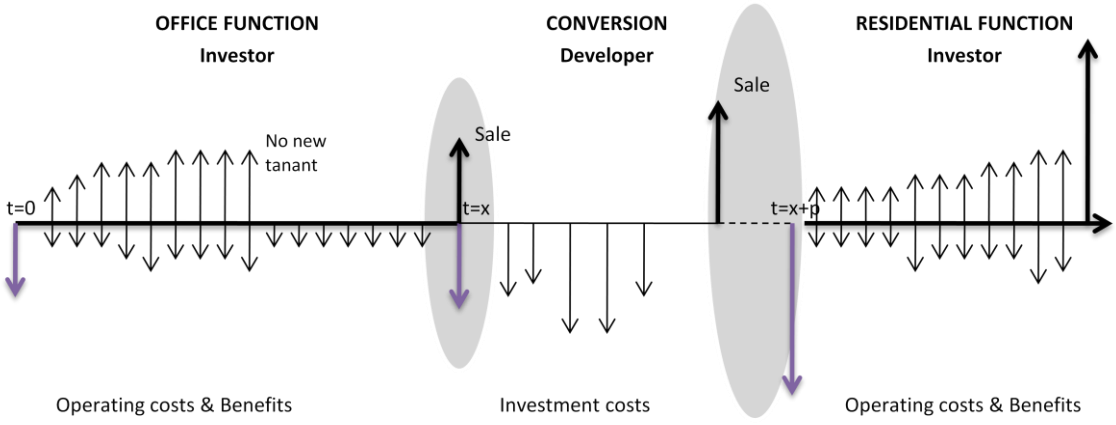

Figure 1.0: Office building life cycle costs (de Groot, 2014)

Structural vacancy is not the reason for developers to initiate a conversion, the commercial performance of adaptive reuse is the major reason for developers to initiate this complex process (Bullen & Love, 2010). A developing project has to make money, but the business of adaptive reuse is very lucrative with a ROI varying between 20-30% or 10-15% (Shipley et al., 2006). Securing financial backing is uncertain; banks are hesitant in financing conversion projects because they believe the risk is higher than other real estate investments. Developers seek for private financing for their projects in order to avoid restrictions and time limitations. Especially in smaller and medium sized markets projects are financed primarily private (Shipley et al., 2006). The risks of conversion are divided among five categories; legal, financial, technical, functional and cultural historical risks (Remøy and van der Voordt, 2014). The most striking risks of conversion are the technical aspect which eventually translates into a financial aspect.

All participants in an office conversion process want to get a share; capture a part of the value (figure 2). In order to capture value 1) value must be added to the property, 2) the financial risks are low, 3) there is legal support (Holt & Janssen, 2008). How much of the created value each player appropriates depends on bargaining between the players, and depends on how tough, or how good at bluffing etc. a player is in bargaining (Brandenburger & Harborne, 1996; Holt & Janssen, 2008). To which extent investors and developers capture value and how this appropriation of value relates to the complex conversion process, risk and return profile will be investigated in the empirical part of the research.

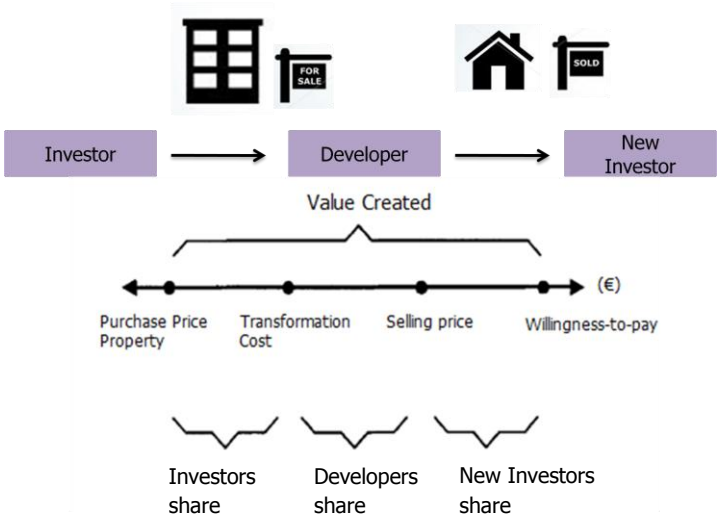

Figure 2: Value Capturing (own ill. based on Brandenburg & Harborne, 1996)

Empirical research results

Conversion process and actors involved

From the findings presented, it can be perceived that the main reason to participate in office conversion is the commercial performance which is confirmed in the case study as well as the survey. Bullen & Love (2010) justify in their research that the commercial performance is the main reason to participate in conversion processes. In addition, the survey revealed another reason for developers to participate, which is caused through the changing real estate market. Nozeman (2014) highlighted this point, arguing that the commercial real estate has been shifted from an expansion market towards a replacement market. The findings in the case studies indicate that the initiator of a conversion brings together all other actors, which in these cases was the developer (or current owner). As discussed earlier, the survey reveals that developers experience themselves as most risk taking actor in office conversion processes. Besides the developer being an important actor the municipality is seen as an actor who makes or breaks a conversion project. A positive attitude of the municipality and the willingness to change the land use plan are in the case studies revealed as the most important key factors of the entire conversion process. The results of the survey strongly confirm this with around 80% of respondents finding a cooperation and positive attitude of the municipality extremely important.

Remøy (2010) stated that investors are rarely participating in office conversion projects as they have a certain distance to the market. One of the studied cases was initiated by an investor, but conversion was not a first choice as they had rather sold or rented out their vacant office building. Findings from the survey confirm that investors felt that conversion is a possible solution to cope with structural vacancy, however an investor will consider all options and will decide the highest yielding option. In addition, investors take into account the various risk profiles, which will lead to a lower risk in both selling and finding a new tenant.

Value

In the case studies was found that the developer appropriates part of the financial value through a return on the project to compensate the risks taken. The created value is the willingness to pay for the converted building by the new investor minus the opportunity costs paid by the developer for the vacant office building. The exact division of value depends on bargaining skills between the actors (Brandenburger & Harborne, 1996; Holt & Janssen, 2008). However, the case study findings indicate that appropriation of the created value depends on more than bargaining skills since factors as 'giving and taking' and future collaboration weight in the position actors use during bargaining. The actor's position influences the toughness and bluffing during negotiations. The results from the case studies revealed other methods for the developer in order to appropriate more financial value which include operate and maintain the building for several years and sell the building after conversion when fully operated in its new function. Value development was during this research difficult to measure this phenomenon should be tested among a large database with prices of sold vacant office buildings, and prices of sold converted buildings, due to the scope of this research and time limitations this part in not included.

A direct link of value appropriation in the survey was difficult to achieve, therefore the triangulation of this research is used in order to achieve information about behavior of actors. Negotiations and behaviors are difficult to test along a quantitative method; the qualitative method of the case studies is used. What is relevant deriving from the survey is developers find it important that buildings owners are willing to calculate their vacant office buildings residually. One of the cases revealed that the municipality as building owner calculated residually.

Finance

The cases revealed that the purchase of the vacant office buildings and the project development costs were all financed with own equity. Research has revealed divided opinions concerning the use of leverage in a conversion project. In the survey was found that a majority of the respondents purchase office buildings with a leverage, while Shipley et al. (2006) argues that banks are hesitant in financing conversion projects because they believe the risk to be higher compared to other real estate investments. In addition, Boiten (2014) argues that nowadays, investors provide capital for developers to work with. The majority of the respondents (42,9%) uses leverage between 25%-50% LTV, and 14,3% of the respondents uses leverage less than 25% LTV. From the survey derived that the use of leverage depends on the case and location. Discussing with Developer C why this contradiction arises developer C stated: "it is quite unique to use only own equity in conversion projects". This suggests that banks might not be as hesitant as discussed in literature. The developer argued that they also use a leverage because their goal as project developer is to spend money on different projects. However, the cases revealed several options to finance a project without a leverage 1) sell the property to an investor in an early stage of the project, 2) start up an investment CV, 3) sell to the market, 4) initiate a CPC.

Risk/return

From the presented findings in the case studies, various risks were addressed as major risk in conversion projects. These included:

- More unexpected issues compared to new-build, which increases the risk profile;
- Building's location;
- The financial aspects which can make a conversion project unfeasible;
- The initial stage during acquisition, when intentions of the current building owner and the future users are unclear.

The survey results present similar outcomes, highlighting the following risks:

- Changing the land use plan;
- Unforeseen costs;
- Organize financing.

Similarities are shown in unforeseen cost/unexpected issues and organizing financing/ financial aspect of the project. However, the case studies revealed the building's location and the initial stage as major risks, while changing the land use plan is according to the survey a major risk. Remøy and van der Voordt (2014) and Douglas (2006) have also identified these above mentioned points.

The survey results indicate that developers experience conversion projects with a medium risk profile and a medium return. When looking at the development margin of office conversion projects, the returns are divided between 6-15% (50% of the respondents) and > 24% (21,4% of the respondents). Shipley et al., (2006) supports this, arguing that the business of adaptive reuse is very lucrative, with a ROI varying between 20-30% or 10-15%. While Boiten (2014) stated that developers previously could make a return on investment (ROI) of 20-25% (if successful), this is much lower nowadays. When possible, developers will take projects at own risk, and use equity of other parties in a later phase of the process (Boiten, 2014).

The results of the case studies are classified according to their variables: process and actors involved, value, finance and risk/return in table 1.

	CS 1	**CS 2**	**CS 3**
Conversion process and actors involved	Developer is initiating conversion Investor involved in early process + invested in the plan Important role municipality: solution noise requirements (lamella)	Developer is initiating conversion Owner/users involved in early process (CPC) Structurally vacant office building purchased from municipality, residential function part of land use plan	Investor (funds) is initiating conversion Design team involved Changing funds during project Municipality important role: realization sound wall A10, alterations façade unnecessary
Value	Value development over time; for investor Value division depends on: bargaining, giving and taking, future collaborations	Value development over time: for user/owner	Additional investment: same or higher return in new function
Finance	Initiated with own equity Investor used leverage in order to purchase the converted plan and invests in project	Initiated with own equity User/owner obtains mortgage from bank Invests in project	Initiated with own equity, during process no external financier
Risk/return	Risk taken by developer, after transfer property development risk remained Well thought out marketing risk	Risk taken by developer Well thought out marketing risk	Full (development)risk assigned to contractor Turn-key project Same or higher return in new function Well thought out marketing risk

Table 1: Cross-case research results

Conclusions

This research exists of a mixed method research with a quantitative and qualitative part in order to answer the main question: To which extent does office conversion into residential use add financial value to real estate and by who is this added value appropriated? An exploration of the aspects derived from the literature review. Additionally, an empirical study of the conversion process and actors involved, value, finance and risk/return defined the outcome of this research.

Considering the total research, it answers the main question as following: the main reason to participate in office conversion is the commercial performance. An office conversion adds financial value to the property in a value development over time in its new function (residential use) for the investor or user/owner. The actor who invests in the project appropriates the added financial value; this may be the developer or the investor, depending on who finances which part of the project and on the negotiations conducted.

The developer appropriates part of the financial value through a return on the project to compensate the risks taken as initiating a conversion, changing the land use plan, unforeseen costs, organize financing and the location of the building. This research revealed returns which are divided between 6-15% and above 24%. The created value is the willingness to pay for the converted building by the new investor minus the opportunity costs paid by the developer for the vacant office building. The exact division of value depends on bargaining skills, risks taken, granted 'giving and taking'-factor and potentiality of future collaboration between the actors. However, financing the project and taking risks strengthens the negotiation position.

Recommendations

This research concludes the added financial value of office conversion into residential use and moreover, defines who appropriates this added financial value. Based on the research results, advice and clarity is given for the investor, developer and municipality. The following discusses research implications for practice, highlighting the target group of this research:

- *Real estate Investor:* it is advisable to take action when structural office vacancy occurs as there is a changing real estate market wherein there is less demand for office space. Sell the building, upgrade, consolidate, demolition and new build or conversion are all strategies in order to cope with a structurally vacant office building. Selling the building or finding new tenants are preferred strategies. However, the right tenant could not be found. It is recommendable to consider conversion as a possible strategy. This research has proved that conversion into residential use adds financial value to the property and is a financially feasible process as long as the location, building and market are in the right conditions. Reinvestment must be made, but the added financial value then can be appropriated by the current owner, in which it is possible to achieve an equal or higher return.
- *New investor/new owner;* As a new investor/new owner in conversion projects it is advisable to step in the process in an early phase. This has some advantages; you can still influence the plan, tax benefits and if you provide financing for the project it gives a strong negotiating position.
- *Real estate Developer;* a commercial point of view is a driver for developers (with experience in office conversion) to participate in office conversion projects. The commercial point of view is interesting as it indicates (if done properly) that office conversion yields a positive return. External financing of conversion projects can be done in the form of an investor investing (buying) the plan before conversion. According the this research results, conversion into housing is a profitable new function for a vacant office, all cases show examples of which have been sold / rented within a very short time (within one month of completion).
- *Municipality;* during the study it turned out that the municipality has a major role in conversion projects, as developers experience this actor can 'make or break' the project. The municipalities' behavior influences the financial feasibility of the project. In addition to the willingness to participate, a changing policy, which makes office conversion more feasible, is preferable by developers. Developers have indicated that conducting a vacancy policy is not necessarily useful to increase the feasibility of conversion projects. Further research into this phenomenon is necessary in order to find out how municipalities can make a good contribution to the conversion process.

Abbreviations list

BAR	Bruto Aanvangsrendement
CBS	Centraal Bureau voor de Statistiek
DCF	Discounted Cash Flow
DC	Direct Capitalization
GFA	Gross Floor Area
GIM	Gross Income Multiplier
HBU	Highest and best use
IV	Investment Value
LFA	Lettable Floor Area
LTV	Loan-to-value ratio
MV	Market Value
NAR	Netto Aanvangsrendement
NOI	Net Operating Income
ROI	Return On Investment
VAT	Value-added tax

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A. INTRODUCTION

1.1 Problem Analysis

This chapter outlines the problem analysis of this research and discusses topics as; structural vacancy, changing real estate market, investors and financiers in trouble, adaptive re-use into housing as a solution and the residual value vs. book value.

1.1.1 Structural vacancy

Structural vacancy in the Dutch Office market: a problem that is being detected for years now has evolved into a social problem. By now everyone knows that there is an oversupply in the Dutch office market, an overall vacancy rate of 7.3 million square meters. This represents 15.7% of the total office stock (DTZ Zadelhoff, 2014b) (figure 1.1). From the 7.3 million square meters, 60% is structurally vacant with no prospect of future use, which represents 4.38 million square meters (Koppels, Lokhorst, & Remøy, 2013).

Structurally vacant means longer than 3 years vacant (de Jonge, 2014).

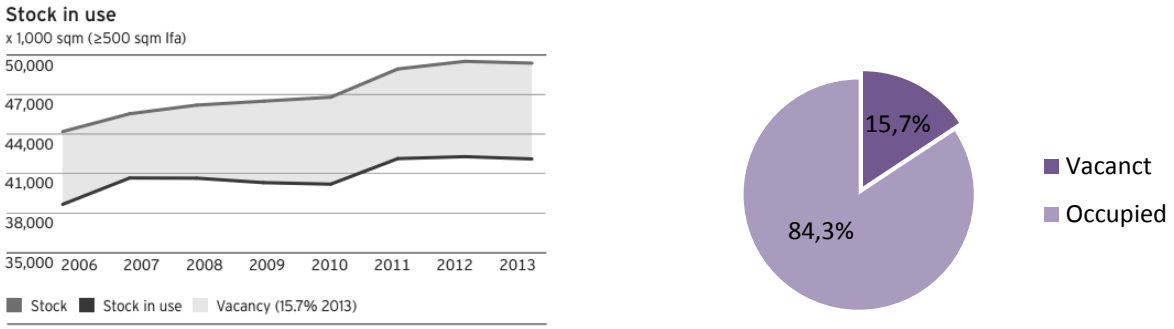


Figure 1.1: Stock in use versus total office stock (DTZ Zadelhoff, 2014)

Besides the 15,7% registered vacancy, there is unregistered vacancy; this is space that is excessive, but currently rented or owned by tenants. According to Jongsma cited in Koppels et al. the expectations are that, if current leases expire the hidden vacancy will lead to an increase of the registered vacancy (2013, p.6). Hidden vacancy is a result of the new ways of working in which a flexible working environment allow employees to use less square meters (de Jonge, 2014; Koppels et al. 2013). These expectations indicate that the hidden vacancy leads to an even higher overall vacancy rate which may reach 19-24% of the total stock in 2018 (Koppels et al., 2013). These rates are high considering that 3–8% is regarded as a 'normal vacancy' rate necessary for market conditions to function (Remøy & van der Voordt, 2014).

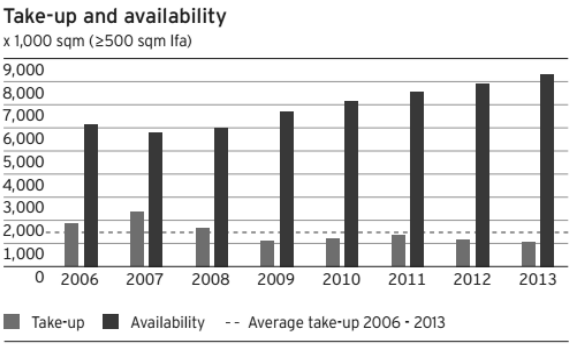


Figure 1.2: Mismatch office market between supply and demand (DTZ Zadelhoff, 2014)

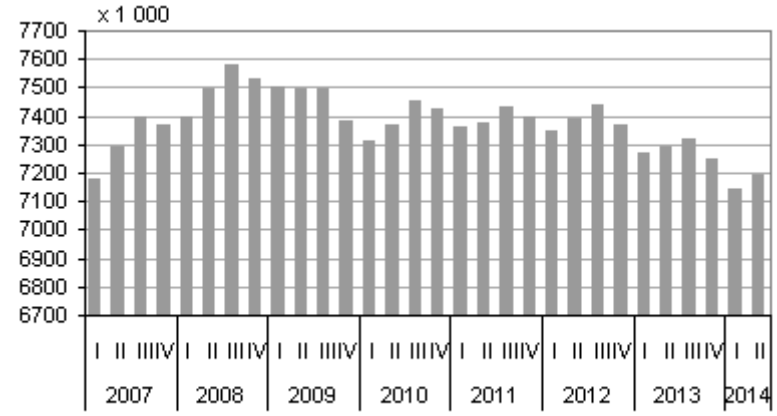
The new way of working is one element that causes vacancy; also the quality requirements for offices are rising. Former research by ABN Amro shows that tenants have high demands in accessibility, building quality and architecture (2011). Also the environment must have a high supply level. A lot of offices in the former stock do not longer meet the requirements in quality of the building and quality of the location (Mackay, 2013).

Together this results in a qualitative and quantitative structural mismatch between supply and demand in the office market. Figure 1.2 confirms these facts as it shows a limited and decreasing take-up of the available office space. According to EIB (2010), lowering rents can support an increasing demand for office space, but the

extent for physical demand of space is due to the new ways of working limited and cannot compromise the recovery of the demand balance. A significant reduction of the structural vacancy can only be realized via abstraction of the current supply.

1.1.2 Expansion market towards a replacement market

Office space was constantly added to the market, while the take-up of existing office space was limited. This caused a bubble burst in 2001, which raised the vacancy dramatically till 2005. Still today, the take-up is limited and there is no demand for expansion. The EIB (2010), forecasts that the demand for office space will be absent for a long-term. The market will not be able to absorb the vacancy as employment decreases. The total office space in use is actually obtained by the number of office jobs multiplied by the average space per employee. The average use per employee declined strongly since 2002 through the new ways of working and the Dutch population is declining as well. Expectations are that the working population is shrinking (EIB, 2010). CBS (2014) confirms that the active working population is shrinking over the years (figure 1.3).



Bron: CBS

Figure 1.3: Active working population (15-65 years) in the Netherlands (CBS, 2014)

The current office stock in use is relatively stable, which shifted the office market from an expansion market into a replacement market (Remøy, 2007, 2010). Nozeman (2014) confirms this shift in his study wherein he argues that commercial real estate has been shifted from an expansion market towards a replacement market with a lower level of investments in fixed assets.

> *"As an effect of a replacement market, older buildings are left for preferred new buildings, and the vacancy concentrates in the older stock and structural vacancy occurs" (Remøy, 2010, p.51).*

As stated by Remøy (2010), users prefer new office buildings that were continuously added to the market. These buildings fit the demands of the user better, which leaves the existing buildings functionally obsolete, and left behind. High vacancy rates concentrate in the existing office stock as new offices caused a flow of moving tenants from old to new offices (EIB, 2010). When a market has a continuously high level of vacancy, structural vacancy occurs (Remøy, 2010).

A mismatch is found in the technical and functional life span of a building. Buildings have a technical lifespan for at least eighty years; however the functional lifespan is expired through technological progress which causes changes in the users requirements. Changes which make the functional lifespan outdated from a user's point of view. The users leave the building vacant, structural vacancy occurs which finally ends the economic lifespan of the building (Remøy, 2010).

The nature of real estate

A part of investing in real estate is forecasting the expected market conditions to make estimates of future cash flows. If supply and demand are out of balance, the effects on vacancies and rents should be taken into account to forecast future cash flows, if done properly, estimates of value and investment returns will reflect these

expectations (Brueggeman & Fisher, 2010). This phenomenon is called the cyclical nature of real estate (figure 1.4), when real estate owners and investors detect decreasing vacancy and rising market rents, opportunity is rising."Because of the highly competitive nature of the real estate industry and its difficulty in forecasting demand, there are certain times when excess supply is unintentionally produced, thereby increasing vacancy rates, reducing rents, and causing volatility in property values" (Brueggeman & Fisher, 2010, p.340).

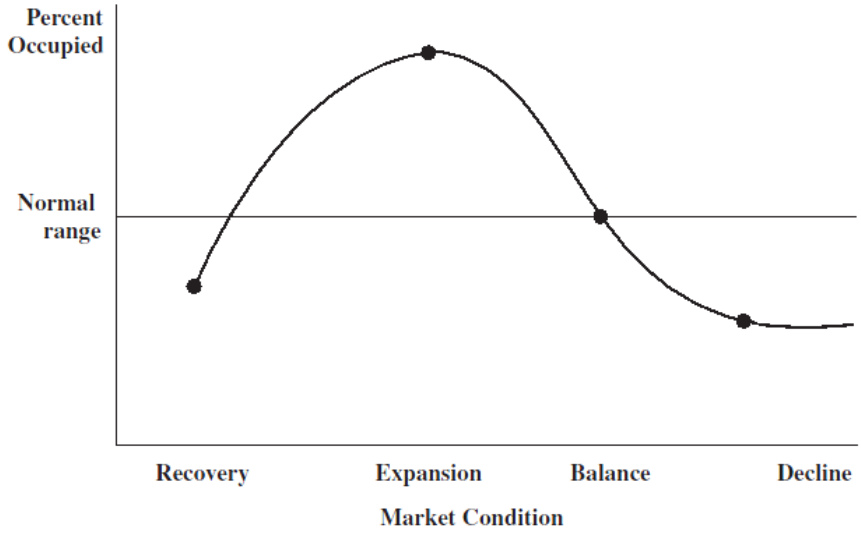


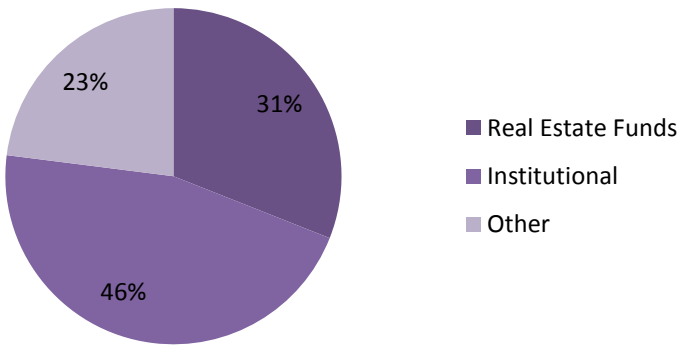
Figure 1.4: Supply/demand balance based on market conditions (Brueggeman & Fisher, 2010)

According to Cuppen (2011) the real estate market has structurally changed under influence of the economic recession. Real estate is becoming less of a financial instrument, but returns to its basic principles; a long-term investment that can yield stable returns and protection from inflation. Due to the economic recession the value of property is adjusted downwards and there is less activity in the real estate markets than before the recession.

1.1.3 Investors and financiers in trouble

Offices are assets for investors, where the yield is determined by the rental income and value creation. The invested assets in the Dutch office market are ± 50 billion euro, distributed among different types of investors, figure 1.5 (ABN Amro, 2010). Investing in offices is attractive due to high direct returns, and by an attractive purchase price it is relatively simple to gain a positive operational cash flow. The indirect return deriving from the value development of the underlying asset has been highly volatile in the last years (figure 1.6), with periods of value growth interspersed with periods of sharp decline (ABN Amro, 2010).

Figure1.5?: Investors in the Dutch office market (ABN Amro, 2010)



At building level, value development is driven by two factors; the development of lease value and the so-called exit-BAR which represents the number of times of the rental value that a prospective buyer is willing to pay.

Relevant for the rental value is the actual development in rent, and the vacancy rate. For the exit-BAR the future expectations of the buyer and the current situation in the financial markets are relevant. In structural oversupply the rental value barely develops (ABN Amro, 2010).

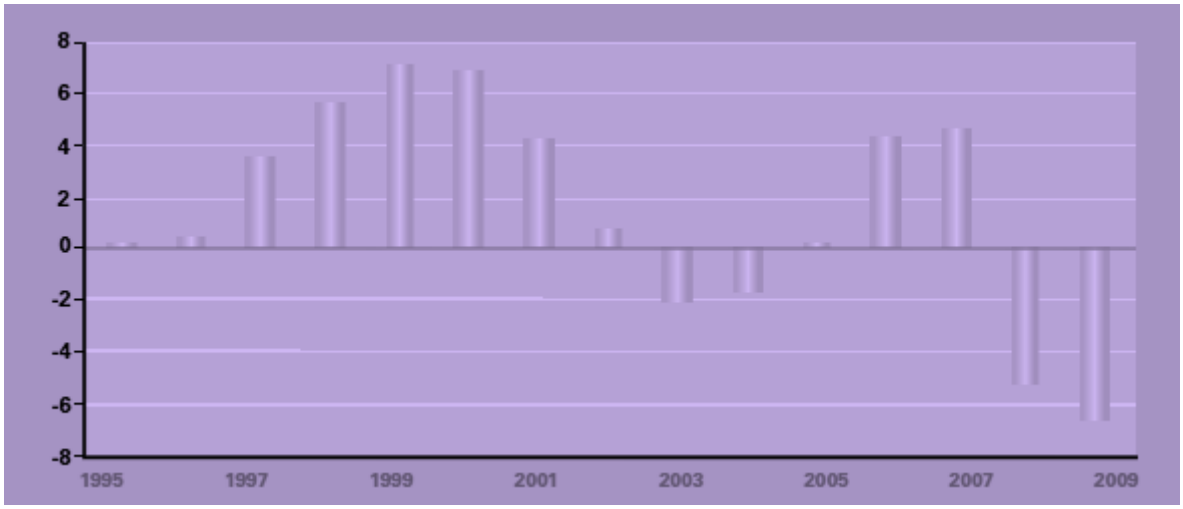


Figure 1.6: Indirect return in% for investment in Dutch offices (ABN Amro, 2010)

Structural vacancy confronts many investors, as their portfolios contain an increasing percentage of vacant properties. Increasing structural vacancy decreases the average value of vacant properties. Devaluation of assets have not yet occurred due to the price elasticity of the real estate market and the commercial interests. This is problematic because a lot of assets are sealed with a high percentage debt capital and only a small percentage of equity capital. The Loan to value (LTV) increases in this case, while the LTV ratio was already high (Mackay, 2013).

> *Obviously the longer it takes for space to be rented, the less income the investor will receive. This affects cash flows and will also have a significant impact on the investment value of a property (Brueggeman & Fisher, 2010).*

Vacancy in real estate portfolios is often part of a diversified portfolio and therefore the impact besides a lack of income is the largest when building depreciation occurs through selling the property (Remøy, 2010).

1.1.4 Adaptive reuse into housing as a solution

Property owners have several options to react on structurally vacant office buildings; consolidation, renovation or upgrading, demolition and new-build, sell the building or conversion (Remøy, 2010; Remøy & van der Voordt, 2014). In the following these solutions are discussed;

- *Consolidation*
  Retain the status quo, search for new tenants and wait for better times (Remøy & van der Voordt, 2014). In addition Borst (2013) argues that consolidation of a building refers to the extension of the life-span of the building through maintaining the building as it is. The original function is retained.
- *Renovation or upgrading*
  Renovating a building enhances the physical and economic characteristics and delays obsolescence. However, upgraded performances cannot replace the whole building or the characteristics of the location (Remøy, 2010). According to Remøy & van der Voordt (2014), upgrading an office in a market with high vacancy levels brings a lot of risks that the benefit of upgrading will be less than the intervention costs.
- *Demolition and new-build*
  By demolition and reconstruction of a structurally vacant office a suitable fit with current and future users' can easily be adapted, but demolishing a building which is technically sound is not sustainable. In addition, redevelopment takes time and cause huge income delays (Remøy & van der Voordt, 2014).

- *Sell the building*
  Selling the structurally vacant office buildings is accompanied by depreciation of the building value. "The market value of an office building is based on rent value; hence the sale of a vacant building yields less than the sale of an occupied building. The building will not be sold in accordance with its book value, which is often based on a presupposed 100% rent for the entire investment period (Remøy, 2010, p.115).
- *Conversion*
  Conversion is transforming a former office building into a new function i.e. residential use. Conversion is a sustainable solution and creates a durable use of the location and building itself. Compared to demolish and new build it disrupt less income (Remøy & van der Voordt, 2014). Conversion enriches the financial environment and social performance of the building (Bullen & Love, 2010).

Most owners choose consolidation, i.e. retain the status quo, search for new tenants and wait for better times (Remøy & van der Voordt, 2014, p. 1). Borst (2013) identifies the problem that investors tend to embrace a passive attitude towards vacancy in their portfolios. This is supported by Remøy (2010), indicating that investors keep waiting for new tenants and hesitate to devaluate their properties, in addition the purchasing price for structurally vacant office buildings is often too high to make conversion or other use possible (p.231).

A structurally vacant office building can be part of a diversified portfolio. According to Vastgoedmarkt, investors tend to divide assets into three categories; deprived, mediocre and promising properties (cited in Borst, 2013). DTZ Zadelhoff also has developed a system of categorizing offices within portfolios into high potential, promising and low potential. This indicates that some part (low potential) will never be used as office space, and the only option will be demolition. However for the promising buildings in key cities, there are opportunities to reduce the surplus of office buildings by conversion (DTZ Zadelhoff, 2014a). According to Remøy & van der Voordt (2006) vacancy threatened buildings are often found in the mediocre part of the building stock and are suitable for conversion. Large risks in conversion projects come from more than one source – one being the building itself, others being the market or the municipality (Remøy & van der Voordt, 2006).

As there is a surplus in the office market, in the housing market these ratios are different; there is a shortage of housing. In 2012 the housing shortage is 440,000 units which is 6% of the total households, this number increases to 510,000 units (6,5%) in 2020 (ABN AMRO, 2014). The growth in households in the Netherlands, now and in the future is approximately 60,000 new households per year. The current building production is not sufficient to accommodate this growth as the construction market expects to build 40,000 houses in 2014, figure 1.7 (ABN AMRO, 2014). The housing shortage thus increases further, especially in the Randstad.

> *"Adaptive re-use means a major change to a building with alterations of both the building itself and the function it accommodates" (Remøy, 2013, p.8).*
>
> *"Transformation is a possible development when a building is structurally vacant and is obsolescence, the building does not yield any financial benefit to its owner and is therefore also considered financially obsolete" (Remøy,, 2010, p.14).*
>
> *Transformation of structural vacant offices into housing can contribute to the broadening and expanding of the housing supply and at the same time offer a solution for office buildings that are no longer eligible for the office function (Remøy, 2007).*

Office conversion can contribute in the housing shortage as it is for investors difficult to find appropriate projects because land prices in many municipalities are at a high level. The risk remains that a strong growth of new build houses holds of in 2014 (ABN AMRO, 2014). Of course existing office buildings can be demolished and new housing can be build. However, the conversion of the existing building structure is sustainable: building materials are reused, and the morphological structure of an urban area is retained. This contributes to an understanding of the place and increases its historical value (Remøy & van der Voordt, 2006).

Developments in building production, population growth and the demand of new housing, leads to a significant mismatch between supply and demand. However, investment in real estate is rising according to FGH Bank, and the main challenge for the next decade can be found in creating the right conditions to enable conversion (FGH Bank, 2014). According to FGH Bank it is necessary that investors make a transition to entrepreneurial property owners to increase transformation projects (2014).

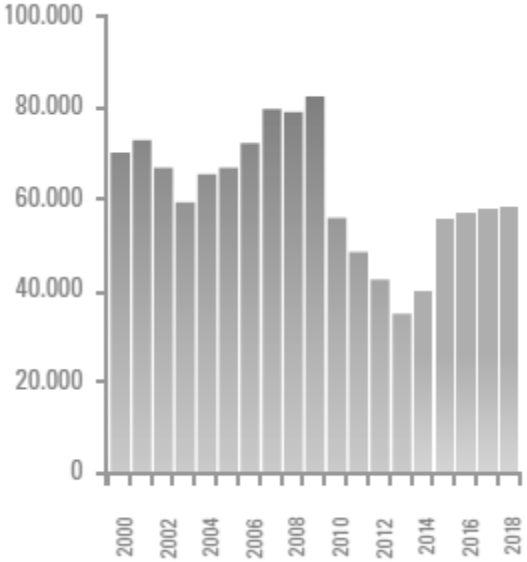


Figure 1.7: Housing construction from 2000-2018 (ABN AMRO based on CBS and Primos 2014)

Risks in the housing market

In particular, the risk-return profile in the housing segment is a positive point for investors compared to other segments. It is therefore attractive for investors to invest in this segment. The direct return on residential investment proved to be more stable in recent years compared to other real estate segments such as retail, office and industrial properties (ABN AMRO, 2014). Compared to 2012, there is an absolute and relative growth of the investment volume in housing. The share of residential investment (26% in 2013) continues to grow compared to previous years and confirms the growing interest of investors in this segment (ABN AMRO, 2014).

1.1.5 Residual value vs. Market value

Investors are forced to take action in their own portfolio of structurally vacant offices, because the financial unfeasibility of conversion is usually caused by a difference in the perceived value of vacant offices. The residual value a developer would pay for a property is often not in line with the price (the capitalized rental value) that the investor wants to receive (Sprakel & Vink, 2007). According to IAS 16 "the residual value of an asset is the estimated amount that an entity would currently obtain from disposal of the asset, after deducting the estimated costs of disposal, if the asset were already of the age and in the condition expected at the end of its useful life" (2009, p.2).

Investors are currently experiencing that buildings with vacancies are often not selling at the recently externally appraised market value (van Gool, 2013). This forces the investor into a new expertise, in which waiting for the right tenant or selling the property is not an option. The IAS 16 describes depreciation for all depreciable assets wherein the depreciable amount (cost less residual value) should be allocated on a systematic basis of the asset's useful life. At least each financial year the residual value and the useful life of an asset should be reviewed, also the depreciation method should be reviewed annually. Depreciation begins when the asset is available for use and continues until the asset is derecognized, even if it is idle (IAS 16, 2014). According to IAS 40, the disposal of an investment property may be achieved by selling or by entering into a finance lease. The gain or loss on disposal should be calculated as the difference between the net disposal proceeds and the carrying amount of the asset and should be recognized as income or expense in the income statement (IAS 40, 2014).

Valuation is an important issue wherein different expertise's take in different positions. Real estate valuations are essential for the real estate sector, particularly concerning the valuation of investment property at market value. For buying and selling decisions and funding of these decisions, valuations are of great importance (Konings & Teuben, 2013). The appraised market value of office buildings is normally based on the income approach, described by the potential rental income. Although structurally vacant office buildings generate no income and may have little prospect of a future tenancy, appraisal of structurally vacant office buildings is typically based on potential tenancy of the property using either the cap rate or discounted cash flow methods (Hendershott, 1996; Hordijk & van de Ridder, 2005; Ten Have, 1992, 2002 cited in Remøy & van der Voordt, 2014).

The accounted value is too high for redevelopers, who calculate land and existing building value residually. As long as these two ways of calculating the value of structurally vacant office buildings are not compatible, the developers will perceive the price as too high and the owners will perceive it as too low (Remøy & van der Voordt, 2014). Valuation of structurally vacant office buildings is therefore problematic, it is therefore difficult to estimate how much financial value transformation might add to the building.

1.2 Problem Statement

The following chapter describes the problem statement in this research, deriving from the previous problem analysis. First, the main problem to solve is discussed, followed by the conceptual model of this research.

1.2.1 Main problem to solve

The current Dutch office market shows a major oversupply of office space. A part of this oversupplied office space is structurally vacant. Structural vacancy will increase in the upcoming years as 1) there is a lot of hidden vacancy as a consequence of the new ways of working, in which employees use less square meters and 2) as the shrinking working population. This characterizes the current real estate market as a replacement market wherein there is no need for expansion. The high vacancy rate is mostly concentrated in the mediocre part of the existing office stock. These buildings are suitable for conversion.

Increasing vacancy confronts many investors: due to oversupply of offices, the rental value barely develops, which decreases the value development of the property. The indirect return deriving from the value development of the underlying asset has been highly volatile in the last years, with periods of value growth interspersed with periods of sharp decline. Devaluation of assets is problematic due to the price elasticity of the real estate market and the high percentages of debt.

Investors have several options to cope with structural vacancy: consolidate, renovate or upgrade, demolition and new build, sell the property, or conversion. Conversion into housing can contribute to the expanding of the housing supply and at the same time offer a solution for office buildings that are no longer eligible for the office function.

While only 15-20% of the total office stock is suitable for conversion, postponing and denial are still a common used strategy by office owners (de Jonge, 2014). Financial unfeasibility of conversion is usually caused by a difference in the perceived value of vacant offices. The residual value a developer would pay for a property is often not in line with the price (the capitalized rental value) that the investor wants to receive (Sprakel & Vink, 2007). Investors are currently experiencing that buildings with vacancies are often not selling at the recently externally appraised market value (van Gool, 2013). Besides financial motives, the project complexity of adaptive re-use is one of the crucial barriers to entry to this sector of property development for practitioners (Kurul, 2007).

> *This research is therefore focusing on to which extent converting structurally vacant offices into residential use adds financial value to the property. Furthermore, this research explores who appropriates this added financial value.*

The findings of this research will give more insight into the financial feasibility of office conversion and the position of the various actors involved.

Why? There is a high level of structural vacancy in the office market in the Netherlands, which shifted from an expansion market towards a replacement market.
What? Office conversion into residential use is a possible solution to cope with the structural vacancy.
For whom?The developer and the investor.
How? By determining the added financial value of office conversion into residential use, and to determine by whom this financial added value is appropriated

1.2.2 Conceptual Model

The conceptual model (figure 4) shows the input and output of this research and how the different topics are related to each other.

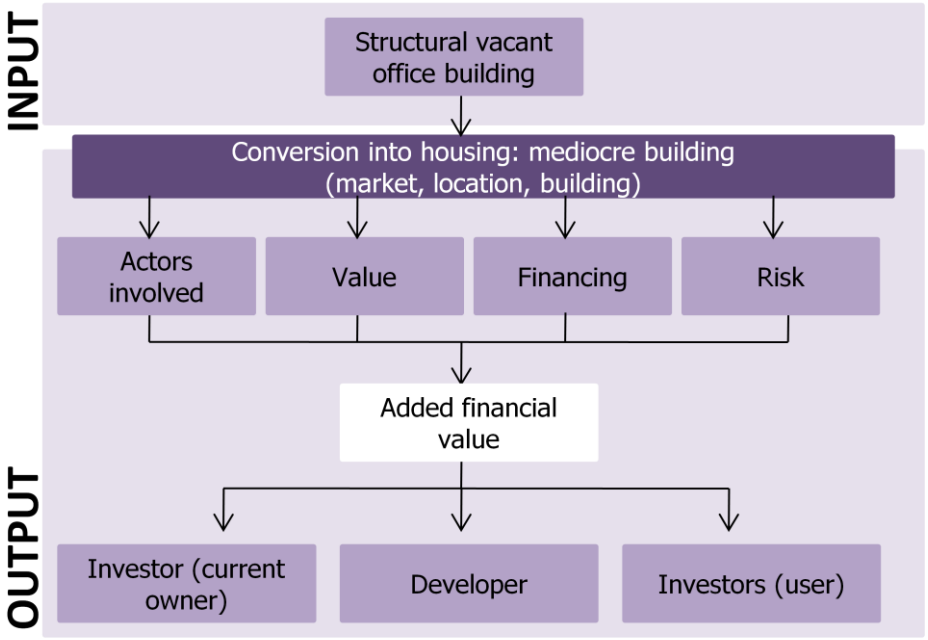


Figure 4: Conceptual model (own illustration)

1.3 Research Questions

Deriving from the problem statement, this chapter presents the main research question and the detailed research question of this research. Followed by the research objectives and final result.

1.3.1 Main research question

The main research question is formulated on the basis of the defined problem statement. The proposed research aims to answer the following question:

To which extent does office conversion into residential use add financial value to real estate and by who is this added value appropriated?

1.3.2 Detailed research questions

The sub questions are formulated into a theoretical part and empirical part of the research in order to give a complete answer to the main research question.

Theoretical framework

T1: How does the construction chain of a conversion process of a structurally vacant office into residential use vary from a new build process and how are various actors involved

T2: How is the financial value of a (partly) vacant office buildings determined?

T3: How are the standing investments in the investor's portfolio valued, and to which extent do these values vary from the market value?

T4: How are the risks among actors involved in a conversion process divided and can the actor who carries most risks, appropriate the added value?

Empirical research

Case study

E1: How are structurally vacant office buildings purchased and how are the negotiations conducted?

E2: Which positions do actors occupy within a conversion process, how does this relate to risk/return?

Survey

E3: What is the relationship between the risks taken and the development margin?

E4: Does the actor who carries most risks, appropriate the added financial value?

1.3.3 Objectives

This research aims to give an overview of the financial added value of conversion projects as it will make decision making on structurally vacant offices more substantiate. In addition this research aims to create more transparency among stakeholders in the conversion process as to determine who appropriates the financial added value. The objectives of this research are in three-fold namely:

- Tightening of the vacancy problem in the office market of the Netherlands;
- To deepen in the knowledge of the financial added value of conversion of structurally vacant offices into residential use, in order to give more insight in the financial feasibility of office conversion;
- Find out who appropriates the added financial value to allow more transparency between the involved stakeholders.

The target group of this research are (figure 1.9); the real estate investor, real estate developer and the new real estate investor (or owner/user).

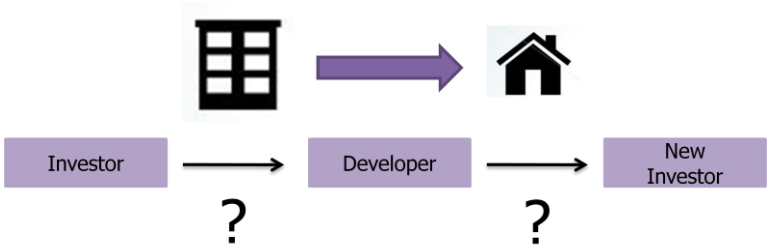


Figure 1.9: Target group of this research

First, a literature study is conducted in order to gain insight in the existing scientific knowledge about office conversion, investor's behaviors, value development and value determination, and risk/return in project development. This new theoretical framework is used as an input for the empirical research which contains a field research wherein knowledge is tested among case studies and a survey.

1.3.4 End result

The end result (conclusion) of this research should contain a matrix wherein the various variables which influence the added financial value are pointed out. In addition, recommendation will be given for the target group; investors and developers, and the most influential actors.

1.4 Research Methodology

This section discusses the research methodology. First, the research design is presented and is elaborated on the quantitative and qualitative nature. This is followed by the research instruments used for data collection.

1.4.1 Research Design

A research design provides a framework for the collection and analysis of data and sets out the specific details of the enquiry (Bryman, 2012; Kumar, 2011). Kumar (2011) describes the main function of a research design as a way to explain how you will find answers to the research questions. Bryman (2012) and Kumar (2011) both define that answers to the research questions and the path followed in order to answers these questions must be: reliably, replicable and validly. The research design supports this process.

> "The strength of what you find largely rests on how it was found" (Kumar, 2011, p.44).

In order to conceptualize a research design, the first step is to define a research strategy. Former research into the topic of adaptive reuse at the Technical University of Delft shows to be qualitative research, using case studies, Delphi studies and interviews. This research explores to which extent conversion of a structural vacant office building into housing adds financial value to the real estate. Furthermore this research explores which actor appropriates the added financial value. Identifying this process and the various collaborations between actors, which is accompanied by specific behavior, is researched by qualitative research methods. A quantitative research method is used to collect numerical data to exhibit a relationship between theory and research. Sensitive information about projects financials and risk/return profiles is gathered through a quantitative method.

According to qualitative and quantitative research strategies, various types of research designs can be distinguished. In this research case study design and cross-sectional design are combined in order to find answers to the research questions: mixed methods research. Using a mixed method research has its specific strengths and weaknesses and can have some practical difficulties. Combining quantitative and qualitative research has a triangulation wherein results of an investigation of one method can be cross-checked by the results of the other research method. Its completeness of answering research questions is higher compared to a single method as the answers include both quantitative and qualitative results (Bryman, 2012). The weakness of a mixed methods research lies in the potential lack of connection and coherence between the different parts of the research (Groat & Wang, 2002 cited in Remoy, 2010). Knowing the strengths and weaknesses of the research design increased the awareness of enhancing its strengths, which is taken into account while designing the research design (figure 1.10).

This research is divided into four phases. Phase 1 covers the problem analysis and problem statement which result in a research proposal with the main research question. Phase 2 contains the theoretical framework, with a literature review. The outcome of the literature study covers the first theoretical framework as input for Phase 3&4 which contains the empirical research. The theoretical framework is tested among interviews with experts and a survey. The case studies are inductive in order to generate new theories. Phase 5 covers the overall conclusion and recommendations.

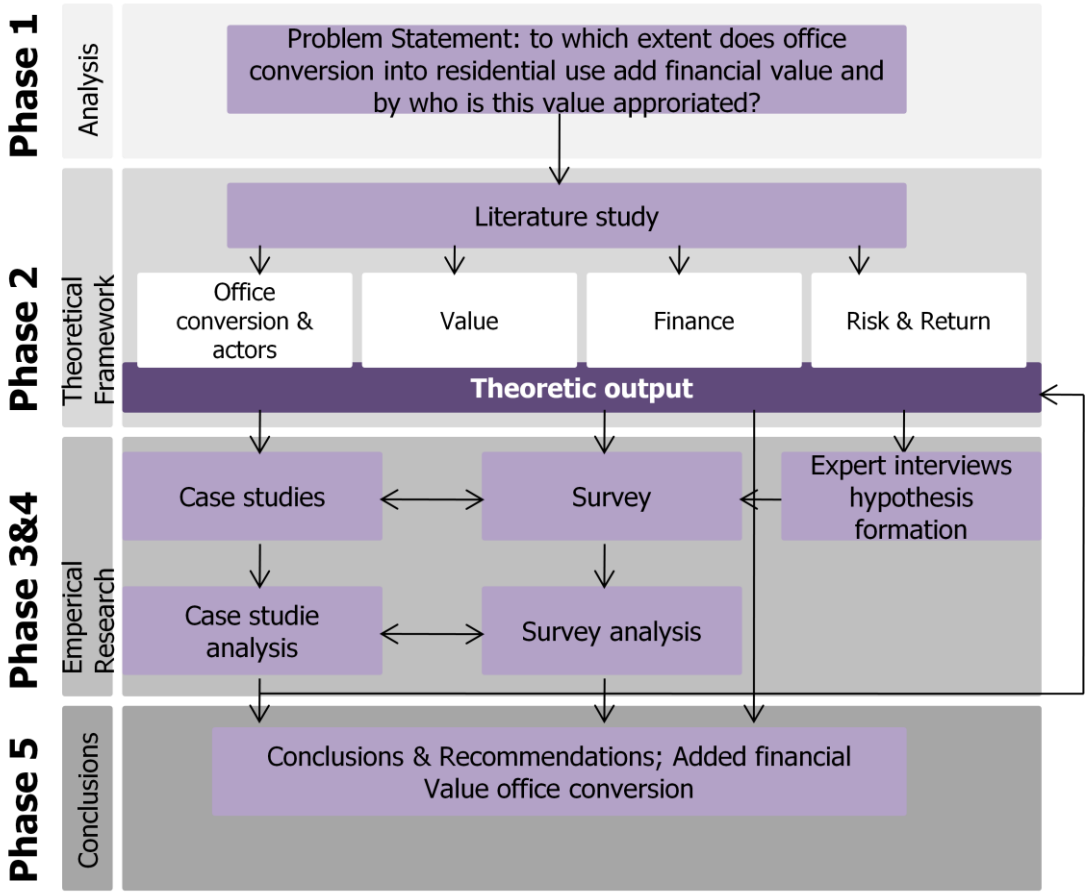


Figure 1.10: Research Design (own illustration)

1.4.2 Research Methods

In order to collect data for this research, various research instruments are chosen. These instruments are quantitative or qualitative and this research is using both. The data is collected through; a literature review, case studies, a survey and interviews.

Literature review

One of the first steps in research projects is to read existing literature. Existing literature is an important element in all research as it determines; what is already known about the topic, what concepts and theories have been applied to the topic, what research methods have been applied to the topic and what controversies about the topic exist (Bryman, 2012, p.8). Literature in this research is used to set out the problem analysis in order to identify the research questions. Also the literature is used as to focus on the topic and to create a context for the empirical part of this research. There has been written a lot about adaptive reuse; key books and articles about the office conversion process, value and value capturing, risk and return profiles in real estate projects are reviewed. The literature review is used to create theoretical framework 1.0, which gives an input for the empirical research. In this early stage of the research, literature is reviewed on the topics of: office conversion, financial value, risk and return in real estate projects.

Empirical research:

Case studies

Case study is a common instrument used in research of adaptive reuse. In a case study the selected cases become the basis of a thorough, holistic and in-depth exploration of the aspect(s) that you want to find out about

(Kumar, 2011). The case studies in this research exist of successful office conversion projects which are converted into housing. The selected aspects examined in this research are mapping out the conversion process, and the behavior, collaboration and involvement of various actors participating in this process. Several cases are studied in order to gather information about the previous mentioned aspects.

Survey

Grovers et al. (2009) describes a survey as "a systematic method for gathering information from (a sample of) entities for the purposes of constructing quantitative descriptors of the attributes of the larger population of which the entities are members" (p.2). The survey is a method to in order to understand the way societies work and to test theories of behavior. The way a survey is systematic, distinguishes it from other research methods. By choosing a sample, you do not measure everyone in the population and the statistics are quantitative summaries of observations on a set of elements (Groves et al., 2009). In this research the survey is used to gather sensitive financial information in conversion projects, this sensitive information is coupled to the behavior of the developer and investor. The statistics in this research are analytic statistics, as they measure how two variables are related (Grovers et al., 2009). Anonymity of the survey suits this research in order to gather sensitive information about the financial side of conversion projects.

Interviews

Qualitative interview is used in this research to collect data on several topics; the conversion process, value, financing, risk/return profile. The interview is used as a methodology to collect data from banks and experts in conversion processes (developers and professors with knowledge about conversion processes) and is used as input during forming of the hypothesis of this research. The interviews were prepared as semi-structured interviews wherein theory is tested. The semi-structured character is always flexibility; however a series of questions linked to their topics were prepared, called the interview guide. In semi-structured interviews there is a flexibility to vary the sequence of questions and to ask further questions (Bryman, 2012). The interviews were recorded, transcribed and send to the interviewee for approval.

1.5 Research Relevance

This research is set up according to the problem analysis, and this chapter attempts to justify the scientific and social relevance of conducting this research. Afterwards, the relationship between this investigation and specific research themes will be pointed out

1.5.1 Scientific relevance

Adaptive re-use is a research topic which has been conducted by various institutions including the Department of Real Estate and Housing of the Technical University in Delft. However, there are limited publications on the added financial value of office conversion into residential use, and the behavior of various actors involved in this conversion process. According to Remøy (2013), public and private real estate investors hold portfolios with an increasing percentage of vacant properties, wherein the decreasing value of these vacant properties is an issue. These surpluses of assets lead to strategic planning processes with large sums of investments and, therefore, often resulting in strategic collaboration with (other) private parties and financial institutions. The issues that rise are 1) the current value of vacant properties and the measures that can be taken to increase value, 2) how to consider value development and depreciation in a life cycle approach to portfolio management, 3) participation of stakeholders, and 4) financing conversion projects.

In addition, Nozeman (2014) in his paper concerning the future real estate research agenda, argues about structural changes in the real estate market. He highlights conversion and various forms of financing real estate projects (i.e. alternative financing forms) as the main themes. According to Nozeman (2014), there is a shift towards a demand-driven replacement market, in which he notes that there is still little knowledge about how this influences the development of the real estate cycle and how actors in such a market steer. In this new demand-driven market, there is a shift in the commercial real estate from an expanding market towards a replacement market with a lower level of investment in fixed assets. The theme in this replacement market is conversion (Nozeman, 2014). Besides the changing market, the financial market is changing as well; there is a temporary reduction in available funds, which results in an increasing risk management and finding dept finance is more difficult (Nozeman, 2014). These changes result in indistinctness in several areas: 1) the impact of the replacement market on the behaviors and motives of various real estate actors, 2) where the main hurdles lay in the attitudes of the parties involved and organizational processes of conversion projects, 3) if debt financing is reduced, what opportunities does that give to alternative forms of finance and how should restructuring of real estate with an decreasing yield be financed.

There is a lack of knowledge in 1) valuing vacant properties and added value after office conversion 2) the participation of stakeholders in conversion processes and 3) the financing of these projects if debt financing is reducing. This research aims to contribute to the existing scientific knowledge about adaptive re-use by focusing on the added financial value of office conversion into residential use and how stakeholders claim the added financial value.

1.5.2 Social relevance

There is a high vacancy level in the Dutch office market, wherein 7.3 million square meters is vacant office space, while 60% has no prospect of future use (DTZ Zadelhoff, 2014b). The large stock of structural vacant offices has a negative effect on its surroundings and costs only money instead of bringing a positive cash flow into the investors balance. For society, structural vacancy leads to insecurity and social uncertainty which result in criminality, negative building image and deterioration of an area (Remøy & Van Der Voordt, 2006). Real estate investors hold portfolios with an increasing percentage of vacant properties, as they normally intend to wait for the right tenant, which is not an option anymore. At the moment there is a dichotomy wherein the difference of book value and market value of the property makes selling structural vacant offices difficult (van Gool, 2013). This research aims to provide insights into the added financial value of office conversion into residential use in order to determine its financial feasibility. Examination of the risk/return profile of office conversion projects linked to the appropriation of this financial value by actors summarizes the complex adaptive re-use process. This research will provide more guidance to the decision making process of an investor with a structural vacant office and developer who acquires a new project. To sum up: 1) investors need a positive cash flow, 2) society needs

housing, and 3) vacancy is unnecessary and unprofitable, thus undesirable. This research is aimed to solve these problems.

1.5.3 Relation with specific research theme

Adaptive re-use means a major change to a building with alterations to both the building itself and the function it accommodates (Remøy, 2013, p.8). Adaptive re-use is a key research topic in the research program of Real Estate & Housing. Currently, research in adaptive re-use has focused on the technical, functional and financial aspects that influence the potential and the feasibility of conversion (Remøy, 2013). In 1995 the first research was initiated by Hans de Jonge, Rob Geraedts, and Theo van der Voordt on conversion of vacant office buildings. From then on several studies other were conducted on: SWOT analysis to decide the conversion possibilities of specific buildings, tools have been developed to determine the adaptive re-use potential of buildings with its original function into a different function (Geraedts, 2014). There are several works on this topic published by researchers from the department of Real Estate & Housing. All these investigations relate to market, location and building.

A wide range of subjects has been researched on the topic of office conversion. B. Djajadiningrat (2013) and A. Mensing (2014) both studied the valuation of structural vacant offices. Djajadiningrat studied the HBU-principle (Highest and Best Use) to valuate structurally vacant office buildings, and Mensing is creating a valuation model to estimate the most probable re-development value of vacant office buildings for conversion to housing.

R. Mackay (2007), R. Muller (2008), and R. Schmidt (2012) have already graduated on the financial feasibility of office conversion. Mackay has studied the conversion building costs of vacant offices into residential use. In Muller's thesis, the conversion potential of vacant offices in Amsterdam is researched, which he tested by the yield generators. Schmidt studied under which circumstances (e.g. location, building properties and market demand) conversions of offices into housing are financially feasible for developers. Further J.I.M. Borst (2014) researched the structural vacancy within an investor's portfolio.

The relationship with former research investigations lies in the financial feasibility of office conversion. However, this research determines the added financial value in relation to the office conversion process. Furthermore, this research deepens out who appropriates this added financial value, which indirectly positions the various actors involved in a conversion process. Results of former research investigations have been used as source for the theoretical framework 1.0. This framework is used as input for the empirical research.

B. THEORETICAL FRAMEWORK

2. Office Conversion

This chapter discusses the conversion process and actors involved. The following sub-question; *T1: How does the construction chain of a conversion process of a structurally vacant office into residential vary from a new build process and how are various actors involved?* will be answered. First, the conversion process is discussed then; the actors involved in a conversion process and their perspectives on conversion are represented.

2.1 Conversion Process

A building is redundant when it is empty for a long period of time and its previous use may not be in demand. Adaptive reuse may be required to ensure the building's continued beneficial occupancy (Douglas, 2006, p. 14). Adaptive reuse means a major change to a building with alterations of the building and a change in use (Remøy, 2013). This change in use is the convertibility of a building allowing changes in use at an economical, legal and technical level (Douglas, 2006).

Buildings function in a cyclical process (figure 2.1), first the building is created in the initial phase. During operation phase the building's future usability and value have to be assessed. Obsolesce may occur in this phase when the building's technical or functional characteristics are obsolete if the cost in use exceeds the benefits of occupation. At this point a possible solution is to initiate a new process; converting the building and conduct major adaptations (Remøy, 2010).

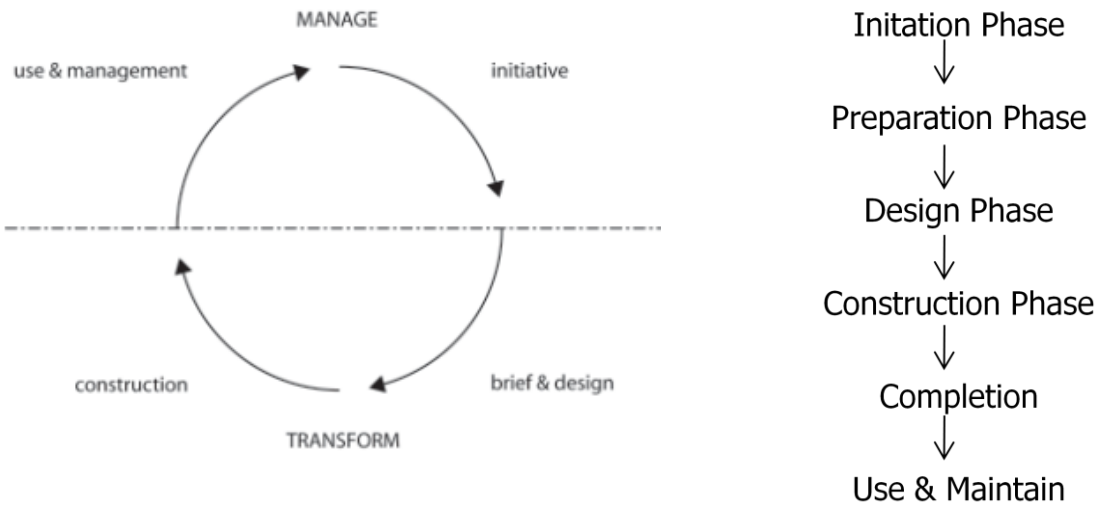


Figure 2.1: The building life cycle (Remøy, 2010) & Conversion process (own ill. based on Andriessen, 2007)

A conversion process is similar to a new build process. Both processes contain an initiation phase, preparation phase (with feasibility studies), a design phase, construction phase, completion, use and maintain phase. However, there are differences as a conversion process is more complex than a new build process due to the existing building and conditions (Andriessen, 2007). Complex projects consist according to Baccarini (1996) of many interrelated parts (cited in Williams, 1999, p.1). The product, which is the building, is the physical deliverable; "A project to develop a more complex product must normally be a more complex (in this sense) project" (Williams, 1999, p.2). In his paper Williams (1999) refers to project complexity characterized by two dimensions; structural uncertainty and uncertainty. The increased complexity of adaptive reuse projects could potentially prolong project duration and increase uncertainty associated with the actual cost/value (Kurul, 2007, p.555). According to Kurul (2007) project complexity is one of the crucial barriers to participate in this sector of project development. Kurul (2007) identified the complexity of the reuse process as a result of differentiation and interdependency. The developers risk behavior defines the differentiation at each stage of the process and influences 'the interdependency between commencing design detailing and the timing of development control

decisions' (Kurul, 2007, p. 568). When a developer is taking a lot of risk, the process starts simply and becomes more complex as the project progresses. If a developer manages the associated risks, of transferring them, the projects starts complex and will maintain a certain level of complexity throughout (Kurul, 2007). This project complexity remains to be an issue that has a strong influence on investment decisions regardless of the strength of the market (Freer et al., 1999 cited in Kurul, 2007, p.555).

Decision making in a commercial development process is according to Fisher & Collins (1999) based on experience (which are subjective personal experiences) and instinct rather than good information and research. In the same manner Fisher and Collins (1999) argue that the development process is infinitely flexible and evolves upon structural forces (which are not only economic), and the actors who become involved. Due to the constantly evolvement of the development process into new forms it is impossible to prescribe a set sequence of events (Fisher & Collins, 1999). However, Andriessen (2007) identified some events which vary from a new build development process; the initiation phase of a conversion process needs more research and specific knowledge (architectural aspects, construction historical aspects, procedural aspects and the opportunities and constraints in case of a listed building) about the existing building and regulations, and the change of function which requires a change of use in the current zoning plan.

2.2 Actors Involved

Office conversion is a complex process; a variety of actors are involved each with their own characteristics. These characteristics are according to Fisher & Collins (1999) distinguished into; aims, status and roles. Actors have their personal aims and values and their status limits them to take part in a development. Actors adopt one or more roles within the developments process (Fisher & Collins, 1999). The various actors have little affinity with other actors, which makes the conversion process more complex. Office conversion is carried out when structural vacancy is recognized as a problem by the active actors involved in management (Remøy, 2010). According to Freer et al. (1999), in order to facilitate investment decisions which are based on objective assessment of risk, complexity, cost and value, it is necessary to map out the investors'/developers' perception of these variables (cited in Kurul, 2007). Remøy (2010) identified the active actors involved in management with their perspective on office conversion:

- *Municipality*
  Municipal organization have a facilitating role in conversion projects by maintaining zoning plans, building decree and other municipal legislation. Municipalities experience structural vacancy as undesirable, conversion is a solution to increase the quality of life of specific areas and to stimulate interests for new developments (Remøy, 2010). Several initiatives have been initiated by municipalities as the "Kantorenloods" in Amsterdam, a facilitating organization which encourages office owners to redefine their structurally vacant office buildings. Rotterdam has the "Transformatieplatform Lege Kantoren" which shifts towards "Kenniscentrum Leegstand" in the beginning of 2015. A platform that combats all types of vacancy within the municipality of Rotterdam.
- *Owner;Investors*
  Investors are part of management in the real estate life cycle but rarely participate in conversion projects as investors have a certain distance to the market (Remøy, 2010). Structural vacancy usually occurs in an investors or private owner's portfolio. More often investors chose to consolidate the building in the expectation of future market improvements. According to Oudijk et al. (2007) when investors were active in a conversion process, the investor sold the building to a developer with the intention to purchase the building, or parts of the building, back after conversion (cited in Remøy, 2010, p.117).
- *Project Developers*
  Conversion is an interesting alternative for developers to develop in areas where it is difficult to find land to develop new projects, for example in inner cities. Developers may work on projects in cooperation with, or for the investor, or they develop a project of their own and sell it after completion. Developing for an investor has a benefit of reduced risks, through development and construction risks. An obstacle among investors and developers is the different perspective of residual value and market value of the building (Remøy, 2010).
- *Housing associations*
  Besides developers, housing associations are one of the two most active actors in conversion processes.

Housing associations use conversion as a strategy to cope with the office buildings from the 1970s which are build in mono-functional housing locations. Converting these offices upgrades the housing locations (Remøy, 2010).

Decisio (2006) has coupled the various actors involved in the conversion process with their possible interests (table 2.2).

Municipality	Structurally vacancy undesired; decrease of livability, image, land allocation Increase housing supply Reallocation as a means of restructuring Possibility of mixed use
Owner; (ex) user	Value development of the property Deductible value depreciation Cost of vacancy (financial losses) Available liquid assets Positive development for environment
Owner; investor	Value development of the property Return on portfolio level, not at the object level Cost of vacancy (financial losses) Image Positive development for environment
Project Developer	Low purchase price Profit after redevelopment Prestige projects Positive development for environment
Housing associations (developer)	Social objectives Low purchase price Profit after redevelopment Prestige projects
Matches	**Positive impact for environment & social objectives**
Contradictions	**Low purchase price with direct profit vs. value development of property**

Table 2.2: Actors and their interests (adapted from Decisio, 2006 in van der Voordt, 2007)

Bullen & Love (2010) conducted an interpretative research to understand beliefs, actions, and experiences of stakeholders involved in the decision-making process of adaptive reuse. The majority of actors find commercial performance weighting high in order to decide to convert a building (table 2.3). Secondly, costs and risks weight medium to high. According to the table there is a diverse in range of views with regard to the importance of variables. However, amongst all stakeholders there is a general consensus that "buildings are unique systems as their design, construction, functionality (particularly in the use of space) and ownership would generate dissimilar outcomes" (Bullen & Love, 2010, p.218).

Profession	Variables						
	Commercial performance	Building demand and function	Costs	Risks	Operational attributes	Suitability of building	Sustainability performance
Architects	High	Medium	Medium	Medium	Low	High	Low
Property developer	High	High	High	High	Medium	Low	High
Property consultant	High	High	High	High	Medium	Low	High
Cost consultant	High	Medium	High	High	Medium	Medium	Medium
Project manager	High	Medium	High	High	Medium	Medium	Medium
Building manager	High	High	Medium	Medium	High	Medium	High
Planning Consultant	Medium	Low	Medium	Medium	Low	Low	Low
Town planner	Medium	Low	Medium	Medium	Low	Low	Low

Table 2.3: influence of variables about adaptive reuse decision-making (Bullen & Love, 2010)

Bullen & Love (2010) argue that commercial performance should not be the only criteria that are used to determine adaptive reuse. Some other criteria include; prolonged vacancy, reaching the end of the service life, deterioration of the fabric or structure (Cantacuzino, 1989 cited in Bullen & Love, 2010). Both Decisio (2006) and Bullen & Love (2010) found that commercial performance, costs and risks weight high for the developer.

Structural vacancy starts in an investor's portfolio. When the investor decides the building is no longer viable there are several options; retain the current building but carry out adaptive reuse, demolish existing building an replace it with a new one, retain existing building without refurbishing or adapting it, sell the current building and buy a new one (Bullen & Love, 2010). However, this actor has a certain distance to the real estate market and investors participation in conversion projects are still scare. Investors do not always acknowledge the vacancy in their portfolio, due to the positive revenue of their diversified portfolios. Structural vacancy is not directly a problem because it is absorbed by other assets of the entire portfolio. It is therefore important to understand what kind of investor deals with vacancy in its portfolio and what kind of investment style this investors uses in order to make the active actor in management aware of taking action by; depreciate, refinance or selling the property.

According to Mackay (2007) the various actors involved have the same role in a conversion process as in a new build process. The conversion process is not seen as an obstacle according to the participating stakeholders; however, the complexity is seen in the existing structure, and the financial feasibility of a conversion process. Developers determine the financial feasibility of a conversion project (Mackay, 2007) . The cost consultant only provides a budget, which can be used as a basis for the developer's feasibility calculation. Mackay (2007) states that the architect has no role in determining the financial feasibility. A positive difference between the construction process of new build and conversion process is that information is already available in an early phase of the process. In contradiction with Andriessen (2007) who argues the existing building and conditions make a conversion process more complex than new build.

2.3 Conclusion Office Conversion

Office conversion is a complex process, consisting of many interrelated parts and involving many different actors, each with their own interest. Project complexity is a barrier for actors to participate in this sector of project development. This complexity has a strong influence on investment decisions. Due to the constant evolvement of the development process into new forms, it is impossible to prescribe a set sequence of events. However, there are some events which vary from a new build development process: the initiation phase of a conversion process needs more research and specific knowledge (architectural aspects, construction historical aspects, procedural aspects and the opportunities and constraints in case of a listed building) about the existing building and regulations, and the change of function which requires a change of use in the current zoning plan. The various actors in a conversion process have little affinity with other actors, which makes the process also more complex. The most important actors in this research are:

- The municipality, which has a facilitating role by maintaining zoning plans, building decree and other municipal legislation.
- The investor, who rarely participates in conversion projects; usually they sell the vacant property to a developer. However, if this actor participates the investor sold the building to a developer with the intention to purchase the building or parts of the building back after conversion.
- Developers, who may work on projects in cooperation with an investor (end user), or develop a project of their own. The risk behavior of developers strongly influences the interdependency between commencing design detailing and the timing of development control decisions.
- New owner/investor: is the actor financing the process and participates in the value development of the property.

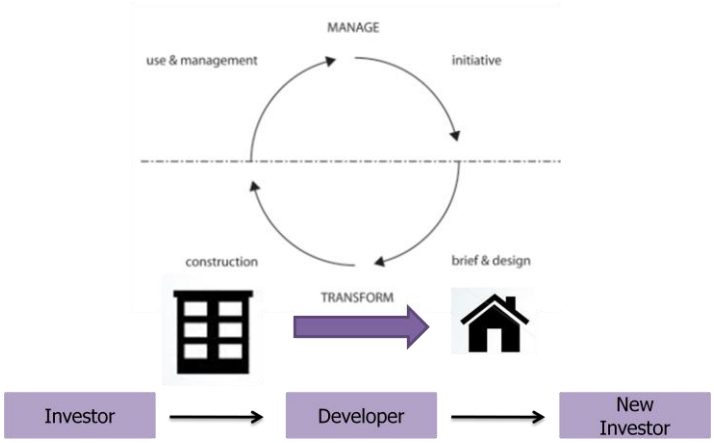


Figure 2.4: Conversion process and actors (own ill. based on Remøy, 2010)

3. Financial Value

Appraising structurally vacant offices can be problematic as they generate no income. In order to find out how to deal with this problem, the central sub-question in this chapter is *T2: How is the financial value of a (partly) vacant office building determined?* First the added financial value is determined, followed by a detailed description about appraising structurally vacant offices and the option to use the Highest and Best Use method. Last the re-development value is highlighted.

3.1 Added Financial Value

The financial dimension of value is also called; value-in-exchange, economic value or financial value. It is the amount paid by the buyer to the producer for the perceived use value (Bowman and Ambrosini, 2000 cited in Coenen, Alexander, & Kok, 2012). The exchange value is in case of outsourcing when the client actually pays the service provider for their service (Coenen et al., 2012, p.84). Lush and Vargo (2009) argue that the exchange value is described as exchange of money for a market offering (cited in Coenen et al., 2012, p.84). This value in exchange is according to Douglas (2006) obtained through a comparison of recent similar property transactions in the area. The use value of the building is best obtained through a discount cash flow (DCF) technique, which determines the net present use value to the owner (elaborated on more in paragraph 3.2). If this use value exceeds the financial value, retaining the building (and possible adapt it) is more profitable than dispose (Douglas, 2006).

Van Beukering (2008) determined the financial value as direct and indirect return. The direct return is obtained during operational phase when the maintenance costs are less than the rental income. Indirect return is obtained when the increased property value yields at the end of the operating period (van Beukering, 2008, p.56). Figure 3.0 shows the life cycle costs (with direct and indirect return) (de Groot, 2014).

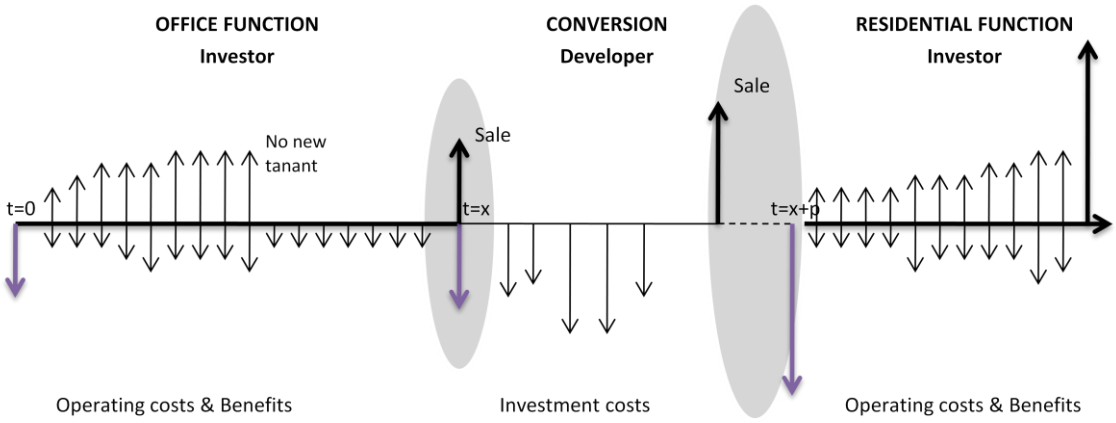


Figure 3.0: Office building life cycle costs (de Groot, 2014)

Throughout the buildings lifecycle owners have to deal with declining commercial and operating performance and might fall below the expectations of owners and occupiers (Bullen & Love, 2010). Constantly changing market demands have an impact on the building, apart from the natural depreciation of fabric and systems (Petersdorff et al., 2006 cited in Bullen & Love, 2010). When a building becomes structurally vacant in an early stage of the operating period, results are the residual lifecycle expectancy not being fully operated. According to Wilkinson et al. (2009) there is a growing acceptance that adaptive reuse can be used as a strategy to cope with changing needs (i.e. building becoming obsolete, structural vacancy) (cited in Bullen & Love, 2010). Bullen & Love (2010) argue that buildings with no value generally are demolished, however, in most cases the market sets this value sometimes based on incomplete information. The value of the location and the quality of new build is not necessarily better than the old building. According to Heat (2001), adaptive reuse occurs when the demands and rents for obsolete offices are much lower than for the same building in residential use. Conversion is not an

exciting proposition for many building owners, as conversion "means that the value of the building for office use has dropped so dramatically that a residential conversion becomes economically viable" (Heat, 2001, p. 175).

3.2 Appraising structurally vacant offices

Estimates of value are needed in a variety of circumstances, buyers and sellers of property need opinions about value on which to base negotiations. Lenders peg mortgage loan amounts to the market value of the real estate that is being used for collateral and also help lenders to differentiate properties on the basis of their relative risks (Lusht, 2001). Valuing real estate; it is important to determine what value should be approached (i.e. a market value or investment value), and how this value is determined; the method used to determine this value. According to Hitchner (2011) there are two overarching valuation premises which are the value in exchange and value to the holder:

- These valuation premises reflect the value to whom. The value in exchange is the value assuming the business or business interest in a real or hypothetical sale, wherein the buyer exchanges the interest for cash or cash equivalents. The market value is a value in exchange (Hitchner, 2011).
- Value to the holder is a value of a property that is not being sold but instead is being maintained in its present form by its present owner. The result of this premise is that the value can be more or less than the value in exchange, which is in many cases an overlooked aspect. Investment value is a value to the holder (Hitchner, 2011).

Among literature identification of types of value varies, also the importance of value terms varies. Table 3.1 shows the different value concepts from (van Gool et al., 2007; Geltner et al., 2010; Lusht, 2001; Hitchner, 2011) to determine which value concepts are used most common. According table 3.1 the following definitions of market value and investment value have been adopted throughout this research:

> "Market value is the expected price at which the asset can be sold in the current property market" (van Gool et.al., 2007; Geltner et al., 2010).

> " The investment value of a property is its value to a particular owner, who would be owning and operating the asset for a long period of time, and explicitly not planning to sell the asset for a long period of time" (Geltner et al., 2010, p. 265).

	Van Gool et al. (2007)	Geltner et al. (2010)	Lusht (2001)	Hitchner (2011)	Common used value terms
Market Value	X	X	X	X	**X**
Open market value	X				
Liquidation value	X				
Investment value	X	X	X	X	**X**
Accounting value	X				
Fair Value	X			X	**X**
WOZ-value	X				
Use- value		X	X		
Assessed value	X		X		
Land value			X		
Intrinsic value				X	

Table 3.1: Value determination

To be able to measure the results and performance of a real estate investor, regular periodic valuations of the investment properties are required (van Gool et al., 2007). According to Lusht (2001) there are three different approaches to approximate market value: the sales comparison approach, cost approach and income approach. The comparison approach, also referred as the one-price rule, involves two steps; the collection of information about the prices of properties and the adjust prices of comparable properties which results in the following formula:

Value of subject= Prices of comparable properties ± Adjustments for differences

The cost approach is based on its reproduction (or replacement) costs. This means that the price of an existing property should not exceed the cost (including profit) to purchase a comparable site and have comparable improvements made. The cost approach is easy to apply and will produce a close approximation of the market value. This results in the following formula (Lusht, 2001):

> *Value= Cost to reproduce (or replace) the improvements as if new – Accrued depreciation on the improvements + Land value*

The income approach is anticipates the flow of income into a value estimate, which requires a forecast of income. Referred to as (Lusht, 2001):

> *Value= Present value of anticipated income*

These three appraisal approaches have variations within their approach, table 3.2 shows the different variations by category.

Sale comparison approach	Cost Approach	Income approach
Direct sales comparison	Estimates value by comparing with a newer version of itself	Direct capitalization (NOI) (i.e. DCF model)
Direct sale comparison using statistical inference		Gross income multiplier (GIM) & the direct extracted overall capitalization rate (OAR) (i.e. Bar/nar methods
Sales comparison using regression analysis		Overall capitalization by use of the weighted average

Table 3.2: Appraisal approaches and there variations (Lusht, 2001; Djajadiningrat, 2013)

According to Hendershott, 1996; Hordijk & van de Ridder, 2005; Ten Have, 1992, 2002 , the appraised market value of office buildings is normally based on the income approach, described by the potential rental income. Although structurally vacant office buildings generate no income and may have little prospect of a future tenancy, appraisal of structurally vacant office buildings is typically based on potential tenancy of the property using either the cap rate or discounted cash flow methods (cited in Remøy & van der Voordt, 2014). IPD (2013) set up a directive for vacancy; in DCF valuations vacancy should be included in the income and not in the operating costs. When using the BAR / NAR appraisals, the following distinction is made between structural vacancy and mutation vacancy; structural vacancy must be processed in the income, and temporary vacancy is included as an adjusting entry (IPD, 2013).

According to Rodermond (2011), the majority of vacant office buildings are valuated using methods of the income approach (figure 3.3). The figure shows that mainly BAR/NAR methods are used in order to value a vacant office building. If the office will be rented out again in a short time and generates new income, then this would be an appropriate method, however, structural vacant offices will not be rented out again (Rodermond, 2011). Appraising according to the income approach gives an overestimation of the market value of the property.

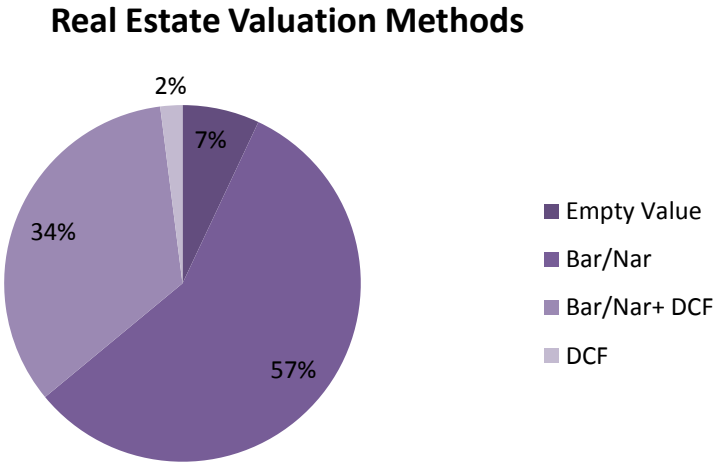


Figure 3.3: Real estate valuation methods used for structurally vacant offices (Rodermond, 2011)

Rodermond (2011) suggest to use a comparative model rather than an income approach to value structurally vacant offices. Likewise, van Gool (2013) argues that the BAR/ NAR method is the most common method to value offices. Investors experience vacant offices not being sold at the external appraised market value. This is attributed to; delay and valuation bandwidths, the absence of references, lack of a willing buyer and willing seller, inadequate marketing and obsolescence of the property (van Gool, 2013). Van Gool (2013) argues that many parties experience the market value as a 'fixed' price, it remains unclear to many that the market value is negotiable. In order to value structurally vacant office buildings van Gool (2013) suggest to use 1) a combination of valuation methods or 2) use a discounted cash flow (DCF) method, whereby the certain cash flows made as discounted cash flows and adding an estimated residual value. This is called a Term and Reversion method which is hardly used in the Netherlands. The Term and Reversion methods splits the value of the property into 1) value of the current lease contract, 2) value of the property when leased after the current expired lease contract and 3) value of the object when vacant (residual value) (van Gool, 2013).

Redevelopers calculate with the land and existing building value, the calculated value through the income approach is too high for redevelopers. As long as these two ways of calculating the value of structurally vacant office buildings are not compatible, the redevelopers will perceive the price as too high and the owners will perceive it as too low (Remøy & van der Voordt, 2014).

3.3 Residual value calculation

The highest and best use premise dominates the appraisal practice since the first literature written about it by Babcock's 1931 text (Lusht, 2001). According to Lusht (2001) " the highest and best use premise is a deterministic concept which holds that the expected use is the single, specific use that maximizes the value of the land" (p.69). Valuing land with the underlying assumption that it will be put to its highest and best use as if vacant. If the property is under- or overdeveloped, the difference in the total property value between 'what is' and 'what would be if vacant' is properly assigned to the value of the building (Brueggeman & Fisher, 2010; Lusht, 2001).

Heat (2001) argues that the viability of re-developing versus conversion of an existing building depends upon the relationship between the capital value of the cleared site (for its best use) less the costs of demolition and construction of a new building compared to the capital value of the existing building and site (in its best use) less the cost of conversion (Baum, 1991, cited in Heat, 2001, p. 182). The development decisions changes over time due to this relationship.

Brueggeman & Fisher (2010) describe an example in applying the highest and best use method on an existing building:

> "For example, an apartment scenario produces a residual land value of €1,500,000 at a *vacant* site. This would be the maximum price that a developer would pay for the land if it were vacant. *But what if the site was not vacant and there were already improvements on the site?* For example, assume that there is an old warehouse on the site that is currently producing NOI of €192,000 per year. Because it is older, the NOI is expected to increase by only 1 percent per year and investors currently require a 13 percent rate of return. Based on this information, the value of the old warehouse (land and building) would be €192,000/(.13 – .01) = €1,600,000. Should the old warehouse be torn down and apartments built? In this case, the answer is that the warehouse should not be torn down. An investor would be willing to pay €1,600,000 for the old warehouse, whereas a developer of apartments could only afford to pay €1,500,000 for the land. Thus, the apartment developer would be outbid. The existing building is currently adding €100,000 to the land value that would be lost if the building were to be demolished and the site left vacant. However, now suppose that, instead of producing NOI of €192,000 per year, the warehouse property only produces NOI of €168,000. We would now have a value for the warehouse (land and building) of €168,000/(.13 – .01) = €1,400,000. This value is less than the value of the land if it was vacant and available to be developed. The apartment developer can afford to pay more for the land to develop apartments than an investor could pay for the existing warehouse. One additional consideration is the demolition costs. Since the land is not actually vacant, the developer would have to incur some costs to demolish the existing warehouse. But as long as these costs are less than €100,000, the warehouse should still be demolished. For example, suppose the demolition costs were €50,000. The

> developer of apartments could pay €1,500,000 – €50,000, or €1,450,000 for the site. This is still more than the €1,400,000 that could be paid to keep the warehouse" (p.315).

The example indicates that if the value of the building on the site is higher than the residual land value as if vacant the building should not be demolished. In this case an investor is willing to pay more for the building than a developer would pay for it. The additional costs for the developer are demolition cost to make the site vacant. However when the Net Operating Income (NOI) drops, the value of the building drops and then the case would be that a developer is willing to pay more than an investor. This example reflects the difference in calculating value between the investor and developer; and thus who is willing to pay more, or in other words, what an investor would like to receive for an i.e. vacant building on a site and what a developer is willing to pay. Kohler and Yang (2007) proffer that the costs of reusing buildings are lower than the costs of demolition (cited in Bullen & Love, 2010, p. 215).

According to Djajadiningrat (2013), the highest and best use is a possible method to determine the value of structurally vacant offices buildings. However, Djajadiningrat (2013) found several input variables that can lead to discussion as; the market conditions can be interpreted differently, future market is not a given fact and conversion is not a solution for every structurally vacant office building. "Another point of discussion is whether a value can be granted to a certain vacant office building when there is no potential user or actor willing to invest in the property"(Djajadiningrat, 2013, p.7).

3.4 Re-development value

According to valuation guidelines of the IPD, valuation of re-development complexes has to be in accordance with the Asset Standards IVS 233 Investment Property under Construction of the International Valuation Standards (2011). The definition of the valuation of a re-development standard is:

"The market value of a partially completed investment property will reflect the expectations of market participants of the value of the property when complete, less deductions for the costs required to complete the project and appropriate and all key assumptions used in the valuation should reflect market conditions at the valuation date." (article C7, IVS 233 2011) (IPD, 2013, p.23).

By valuing a re-development, the value of the property is the value after completion minus the remaining costs associated with the completion of the complex and its adjusted yield and risks (IPD, 2013).

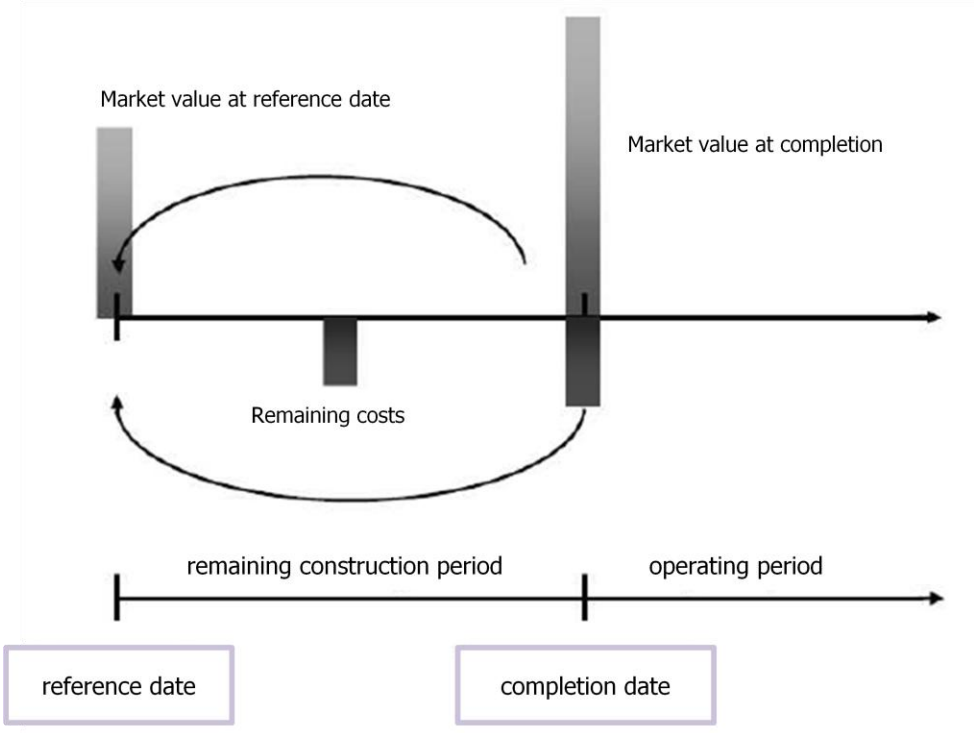


Figure 3.4: Re-development value (IPD, 2013)

3.5 Conclusion financial value

The financial dimension of value is also called; 'value-in-exchange', 'economic value' or 'financial value'. It is the amount paid by the buyer to the producer for the perceived use value. If this use value exceeds the financial value, retaining the building (and possibly adapting it) is more profitable than disposal Adaptive reuse occurs when the demands and rents for obsolete offices are much lower than for the same building in residential use. Conversion is not an exciting proposition for many building owners, as conversion "means that the value of the building for office use has dropped so dramatically that a residential conversion becomes economically viable".

Structurally vacant office buildings market value is appraised based on the income approach, described by the potential rental income. Although structurally vacant office buildings generate no income and may have little prospect of a future tenancy, the income approach is used in the majority of structural office valuation. Using this method creates an overestimation of the value. Developers calculate structurally vacant offices residually, the calculated value through income approach is too high for developers. These two ways of calculating create different values, developers will perceive the price as too high and the owners will perceive it as too low.

4. Investors Portfolio

T3: How are the standing investments in the investor's portfolio valued, and to which extent do these values vary from the market value? **is the sub-question that will be answered in this chapter. First, the investor and their objectives are explained in order to understand how this actor operates. This is followed by their reaction on vacancy. Then the book value vs. the market value is discussed.**

4.1 Investors

"Investors buy and sell capital assets, thereby making up both the demand and supply side of the capital markets. Through the process of buying and selling, investors determine the market values of capital assets, that is, the prices at which these assets trade. In deciding the prices at which they are willing to trade, investors consider the fundamental characteristics of the assets' future cash flow prospects. Investors also consider the nature of the capital markets in which the assets trade and how the functioning of those markets may affect the prices at which assets can trade" (Geltner, Miller, Clayton, & Eichholtz, 2010, p. 124)

Investors' objectives

Investing in real estate, is the direct or indirect capture of assets in real estate, with the aim of the operation and sale of the property to realize a future cash flow (van Gool, Jager P., & Weisz R.M., 2007). An investor has different motivations to invest his equity in real estate: first, investors anticipate that market demand for space in the property will be sufficient to produce net income after collecting rents and paying operating expenses. Second, investors will sell properties after a holding period expecting them to grow in value over time. Third, to make a diversified portfolio, besides real estate investors tend to invest in stocks, bonds and money market funds. And a final reason investing in real estate is the preferential tax benefits (Brueggeman & Fisher, 2010).

Investors always keep in mind their own objectives and constraints (Geltner et al., 2010). According to Geltner et al. (2010), there are two different investment objectives namely; the growth (or saving) objective and the income (or current cash flow) objective. The growth objective implies a relatively long time horizon with no immediate need to use the cash being invested. If the investment generates income, this will be put back into investments to maximize the growth of accumulated capital. Income objective implies a short-term need to use cash generated from the investment. "The growth objective is typical of young to middle-aged individuals, of wealthy individuals of all ages, and of institutions such as pension funds of growing companies that expect to experience more cash inflow than outflow liabilities for many years into the future. Investors with an income objective would typically include retired individuals and institutions such as endowment funds or pension funds with more retired members than current contributors" (Geltner et al., 2010, p.125).

Real Estate Investments

As mentioned before, investing in real estate has various forms namely; direct and indirect. A direct investment in real estate is an investment in bricks and indirect investment in real estate is an investment in real estate stocks (van Gool, et al., 2007). Figure 4.1 shows how a real estate investor can build his portfolio consisting of direct and indirect real estate.

An investor may have a diversified portfolio to spread risks as showed in the figure. Portfolios are often constructed in a way that creates diversification benefits and reduces the risk of the portfolio (Brueggeman & Fisher, 2010). Structurally vacancy can therefore occur in a diversified portfolio. Considering conversion as an option so that the building can be remained in the portfolio is a useful consideration as the sale of a property can affect the risk of the remaining portfolio if it means that the portfolio will be less diversified after the sale (Brueggeman & Fisher, 2010). Besides balance between a diversified portfolio, efficient management must be taken into consideration in acquisition

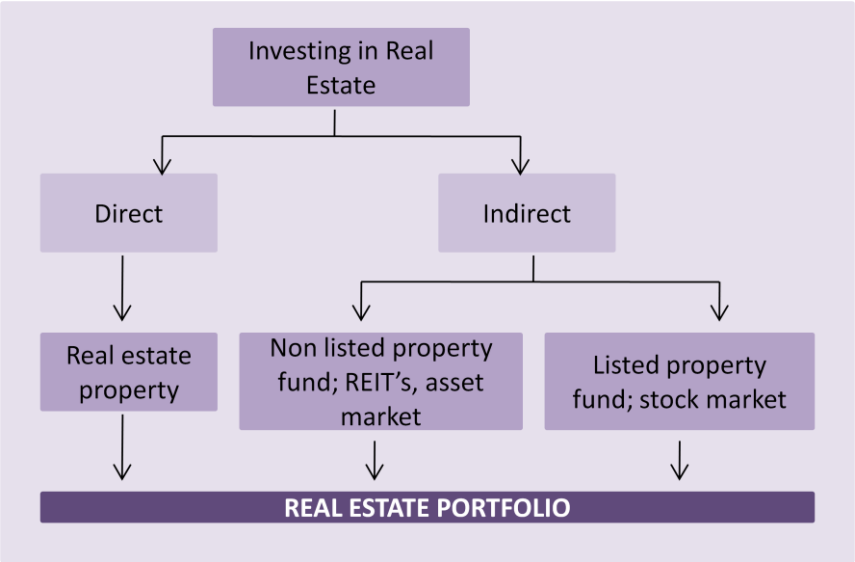


Figure 4.1: Investing in Real Estate (adapted from Cuppen 2011, Borst 2014).

and disposition decisions. The properties within the portfolio must fit with the overall strategy for the portfolio and managing of these properties must fit within the strategy. An investor may decide to sell certain properties when they are more difficult to manage, or when an investor has a lack of expertise in that property type which makes it more difficult to make longer-term decisions, and when the properties do not align with the portfolio strategy (Brueggeman & Fisher, 2010).

To make forecasts of future cash flows given the expexted market supply and demand and captial market conditions, investors use a stragegy or style to do so. Cuppen (2011) indentifies different types of investors namely; institutional investors and private investors. In accordance with Cuppen (2011), institutional investors are pension funds, insurance companies and investment institutions (van Gool et al., 2007). Private investors can be subdivided into; private investors who invest in listed real estate funds, private investors who invest in private real estate funds and family funds.

4.2 Reaction on vacancy

Investors do not always experience the vacancy itself as a problem because a major part of the portfolio or building is not vacant, and thus remains an 'acceptable' return. This results in an investor who sees no urgency in devaluation and / or intervention (van Elp & Zuidema, 2010). Besides this phenomenon investors experience a prisoner's dilemma, which is according to van Elp & Zuidema (2010), an investor who takes his loss as first and restructures or convert his building, might increase the likelihood that the neighboring owners profit from the quality of the site. In other words, no investor would like to take action first, afraid that the surrounding owners benefit from this first investment without having to invest additionally. However, Wilkinson et al. (2009), argues that there is a growing acceptance that a process of adaptive reuse can be used as a responsive strategy. Many owners are confronted with the decision whether to adapt or demolish their building (Bullen & Love, 2010).

According figure 4.2, the vacancy rate in portfolios of institutional investors are relatively limited as this group of investors takes low risks and focuses on quality offices in quality locations. More opportunistic investors (including the indirect real estate funds) own the highest vacancy rates.

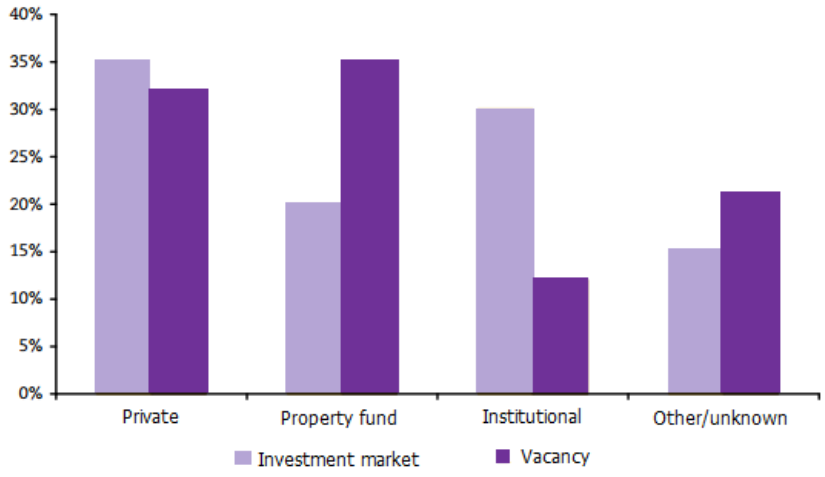


Figure 4.2: Vacancy classified by ownership (van Elp & Zuidema, 2010 adapted from Jones Lang LaSalle, Bak)

The decisiveness and flexibility of an investor determines to what extent an investor can respond to vacancy. The decisiveness is mainly related to the space available for devaluate the building and to attract additional investment capital. The more decisive an investor is, the faster the necessary actions are taken to reduce more losses. Private and institutional investors are relatively decisive and flexible. A fluctuating value is one of the risks of investing and these parties can often respond to this. However, unlisted indirect property funds have a more rigid structure; these funds usually have several shareholders so that the decision making is more complex (van Elp & Zuidema, 2010). Douglas (2006) identified different option outcomes for adaptation represented in figure 4.2a. This research focuses upon adaption across use (change in function). Selling the building to a developer can still cause a conversion initiated by the developer.

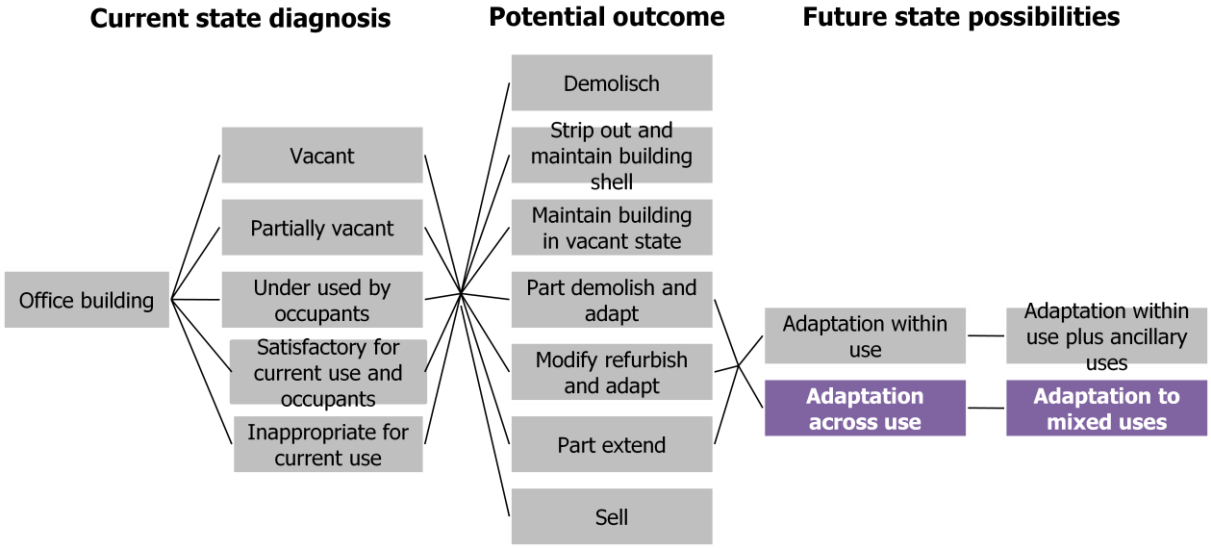


Figure 4.2a: Options for adaptation (Douglas, 2006)

Real estate investment funds are not always able to convert their vacant office building according to the restrictions in the statutes, which may include the fund should only act as an investor, not as a (re)developer. These funds are sealed with a high finance degree, i.e. a 20% loss in value means the shareholders loses 20% of the invested fortune. High level of funding makes it difficult for these funds to attract additional financing necessary to renovate or convert the building (van Elp & Zuidema, 2010).

4.3 Book value vs. market value

Brueggeman & Fisher (2010) argue that some authors assume that the residual value of real estate will be equal to the book value of the property, or the original acquisition cost less accounting depreciation at the expiration of the lease term. According to Brueggeman & Fisher (2010) residual value is the reversion value of land and improvements at the end of the lease term (p.491). Book value comes along some difficulties, as real estate is carried at book value on corporate balance sheets because 1) book values are based on costs which are equal to the original acquisition cost minus accumulated depreciation, 2) the real estate value is difficult to determine as the investment community is not aware of the market value of real estate, 3) when real estate is carried at book value but is financed with a mortgage based on its current value, when this occurs the proportion of financing (loan-to-market-value ratio) is lower than the loan-to-book-value ratio. Thus, a mortgage can increase a corporation's overall debt ratio, which is based on assets carried at book value. This results in higher risk that appear to shareholders and a lower stock price (Brueggeman & Fisher, 2010, p.491).

Investors may know that real estate has a higher value on average than its book value. But without details of the market value of the real estate for a specific company, the best they can do is to assume the market value is higher than the book value by some arbitrary amount (Brueggeman & Fisher, 2010, p.491). However, when real estate is not valued periodically the investors may not realize that the real estate is worth more than book value (figure 4.3). According to the IAS 16, 'the residual value and the useful life of an asset should be reviewed at least at each financial year-end and, if expectations differ from previous estimates, any change is accounted'. The

depreciable amount (cost less residual value) should be allocated on a systematic basis over the asset's useful life (IAS 16, 2014). Mensing (2014) describes two phenomena why there is a difference in the book value and market value 1) usage of inappropriate valuation methods and 2) unexpected accelerated economic depreciation. Structurally vacant offices book values are usually higher than the actual market value (Sprakel & Vink, 2007), so it is the other way around. The value of an office building is based on the potential rental yield and hence the sale of a vacant building yields less than its book value, which means a financial loss for the seller, this results in the problem that the owner is not willing to sell the building for a reasonable price due to this high book value (Remøy & van der Voordt, 2014, p.2).

As mentioned before, the market value of a structurally vacant office building is based on rent value. However, a vacant building yields less than the sale of an occupied building, this causes a difference in the expected sale price compared to its book value which is based on a 100% rent of the entire investment period. An investor regards selling his building below book value as facial loss for the seller. On the other hand, housing market investors and real estate developers will not buy and convert the building due to the high asking prices (Remøy, 2010).

A lot of vacancy occurs in the office market which gives a downwards pressure on rents. This downward pressure on rents is absorbed by office owners giving discounts in the form of investment grants, relocation allowances or rent-free years. These discounts are known as the 'incentives' that are necessary to persuaded a tenant to sign the rental contract. In crisis years the incentives were above 20%, and in extreme cases 40% of the value of a lease. Applying incentives means that the book value at the balance sheet remains unchanged. Normally a rent reduction of 10%, means a value decrease by 10%. An explanation for the use of incentives and thus unchanging book value is; investors still believe in better times and expect that over time the market recovers and the vacant office may be sold at a high price, from tax regulations owners are allowed to cross off the loss from a vacant office against gains on other premises. It is therefore more attractive to make an incentive compared to devaluate an office. Also a lot of offices are funded with a high LTV-ratio of 70%, if the office building declines 30% in its value, this means a negative equity for the investor (van Elp & Zuidema, 2010).

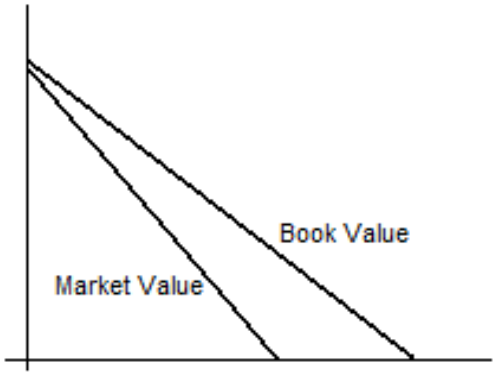


Figure 4.3: Market value vs book value (Koppels, 2014)

4.4 Conclusion Investors portfolio

Investors buy and sell capital assets, thereby making up both the demand and supply side of the capital markets. Investing in real estate is the direct or indirect capture of assets in real estate, with the aim of the operation and sale of the property to realize a future cash flow. An investor may have a diversified portfolio to spread risks. Various types of investors have a variety of office vacancy in their portfolios; institutional investors have limited vacancy, as opportunistic investors experience the largest vacancy rates. Despite the high vacancy rates, investors do not always experience the vacancy itself as a problem because a major part of the portfolio or building is not vacant, and thus remains an 'acceptable' return. The residual value and the useful life of an asset should be reviewed at least at each financial year-end and, if expectations differ from previous estimates, any change is accounted. The value of an office building is based on the potential rental yield and hence the sale of a vacant building yields less than its book value.

5. Risk & Return

The following chapter explores the risk/ return profile by answering the sub-question *T4: How are the risks among actors involved in a conversion process divided and can the actor who carries most risks, appropriate the added value?* Conversion and risk, is pointed out even as the risk for investors and developers. This chapter is concluded with a theoretical outline about value capturing in real estate projects.

5.1 Conversion and Risk

Conversion is a complex and challenging process, the uniqueness of the project requires a creative process in overcoming building challenges (Shipley, Utz, & Parsons, 2006). Remøy and van der Voordt (2014) conducted cross-case studies to identify the opportunities and risks of conversion projects into housing. According to their research, the risks are divided among five categories; legal, financial, technical, functional and cultural historical risks (figure 5.0). Douglas (2006) identified risk among disadvantages as; background, functional, technical, economical, environmental and legal. According to Remøy and van der Voordt (2014) legal risks refers to the possibility of the municipality not allowing exceptions or variations into the zoning plan (needed for conversion), the municipality is not willing to cooperate. The financial risks are the high development costs and the slow handling of procedures which result in a loss of income. It is considered more difficult to estimate the costs of conversion compared to new build (Bullen, 2007). Another financial risk is the owner not willing to sell the property for a reasonable price due to the high book value. If a building is subjected to conversion there is no guarantee it will attract investors or tenants (Bullen & Love, 2010). However, most of the revealed risks were technical issues. Technical issues influence the financial feasibility highly as; high construction cost and spending time in developing solutions during construction. A poor state of the main structure and insufficient shafts are major costs (Remøy and van der Voordt, 2014). Estimating the environmental and social viability of conversion compared to new build is seen as a major barrier (Bullen, 2007). On the other hand, this research identifies opportunities for technical innovation (Bullen, 2007).

	Aspect
1. Legal	• Zoning law: impossible to meet municipal requirements, zoning law or city policy • Building code: impossible to meet requirements, *e.g.* regarding the noise level and fire precautions; the municipality is unwilling to cooperate • Historical protection: the listed status does not allow adaptations that are required to match new user needs
2. Financial	• Development costs: slow handling of procedures (loss of income, high interests) • Vacancy: failing incomes from exploitation or sale of the apartments • Owner not willing to sell for a reasonable price due to high book value
3. Technical	• Incorrect or incomplete building structure assessment • Poor state of the main structure/foundation (rotten concrete or wood, corroded steel) • Insufficient shafts available; construction allows no extra shafts being made • Insufficient thermal and acoustic insulation in the floors and facades • Insufficient daylight for housing
4. Functional	• Present grid does not fit with the measurements required for new purposes, resulting in a waste of space or costly adaptations of the technical structure • Private outdoor space is impossible
5. Cultural–historical	• Appearance of the building does not fit with the required appearance of the new function

Figure 5.0: Risks in conversion projects (Remøy and van der Voordt,2014)

The measurements and technical state of the building structure are critical building characteristics for conversion according to Remøy and van der Voordt (2014). The most striking risks of conversion are the technical aspects which eventually translate into a financial aspect. However, if these risks are taken account in the initiative phase of the project, most risks can be dealt with which increases the feasibility of a project (Remøy and van der Voordt, 2014). Shipley et al. (2006) argues that there is a range of profitability attached to conversion, but there is a greater degree of uncertainty. Especially securing financial backing is uncertain. Three sources of financing were identified: personal equity, private investment and bank loans (Shipley et al., 2006). Banks are hesitant in financing conversion projects because they believe the risk is higher than other real estate investments. The banks can place conditions on the financing i.e.: 65% of the units has to be pre-sold or a minimum of 25% of the total project cost has to be personal equity (Shipley et al., 2006).

5.2 Investors and Risk & return

Investors hold real estate as a part of the portfolio of diversifying the risk of the total investment portfolio. Return on investment is measured in the change of value of the investment portfolio, while risk is related to the chance that future portfolio values will be less than expected. Real estate investors buy property with initial capital interments and expect a growth of the future value of the property. A change in value (expected return) is not certain in the future, risk as a chance of a lower return then expected exists before the return is realized (Xu, 2002, p. 10).

An investment decision has two sides 1) the estimated rate of return, and 2) the estimated risk. In well functioning markets, when the expected return increases, the risks increases and vice versa (Lusht, 2001). According to Lusht (2001) and Brueggeman & Fisher (2010), there are several measures of risk; the breakeven point, the risk absorption capacity, the IRR partitioning and the sensitivity analysis, scenarios and simulation. The breakeven point is that point where there is exactly enough net operating income to cover operating expenses and debt service, there is nothing left for the equity investor. The risk absorption capacity determines to which extent an average decline in annual cash flow can be absorbed before the investors yield falls below a minimum level. The Partitioning IRR is a single number that captures all expected future cash flows. The sensitivity analysis, scenarios and simulation which asks the 'what if' questions based on future levels of important variables.

It is essential for investors that the market risk to some extent is predictable (FGH Bank, 2014). Combining investments into a portfolio it is possible to reduce risks. By developing a portfolio of different investments and combining properties, stocks and bonds an investor can significantly reduce risk by diversification and can reduce the overall risk of the portfolio.

> *"Diversification lowers the variance of total returns from all investments in a portfolio because high and low returns tend to offset one another when combined, resulting in less variation about an expected mean return for the entire investment portfolio" (Brueggeman & Fisher, 2010, p.430).*

As mentioned before reducing risk can be done by combining investments into a portfolio."Developing a portfolio of different investment properties, and also including stocks and bonds, the investor can significantly reduce risk through diversification. Diversifying among the three investment types rather than choosing only one can reduce the overall risk of the portfolio. Diversification lowers the variance of total returns from all investments in a portfolio because high and low returns tend to offset one another when combined, resulting in less variation about an expected mean return for the entire investment portfolio" (Brueggeman & Fisher, 2010, p. 430).

The risk/return profile of indirect private property (non listed property funds) is basically in accordance with the risk/return profile of an identical direct invested property portfolio. The direct and indirect returns are determined by the underlying real estate markets and the development of interest rates and inflation. (van Gool et al. 2007). The European Association for Investors in Non-listed Real Estate Vehicles (INREV) classified management styles used by fund managers in non listed property funds. These ratings give an overall picture of the management style and the associated risk / return profile, table 5.1 (Cuppen, 2011; van Gool et al., 2007). The management styles are; core, core-plus, value-add and opportunistic.

Investment style	Return	Risk	Leverage
Core	6-8%	Low risk, low return	0-50%
Core-Plus	8-11%	Medium risk, medium return	50-60%
Value-add	11-15%	Medium risk, medium return	50-75%
Opportunistic	15%+	High risk, high return	65%+

Table 5.1: Risk versus Return (Borst, 2013; van Gool et al.,2007)

With this form of investment, the investor is not named as a party in litigation with other market parties as there is no direct contact. In addition, the investor may invest extensively than with a portfolio under own management and even the management is given out of hands which creates a greater convenience (van Gool et al., 2007).

Besides non listed property funds, there are listed property funds, investing in indirect listed property means the investor becomes shareholder in a listed property. There are several real estate funds from very wide to very specialized, there are three types of funds: internationals, multinational sector funds and national multi-sector funds (van Gool et al., 2007). The risk/return profile of listed property funds has several components 1) the

risk/return profile of the property itself. The leverage effect can have a major influence on the risk/return profile of real estate stocks. 2) movements of the stock market in response to economic developments, 3) the way the funds in conjunction with the use of leverage its equity management shapes. The result of value creation, the investor receives by the sale of its shareholding (van Gool et al.,2007).

Property owners and investors are very reluctant to participate in the office conversion process, mainly due to financial reasons. Many investors find conversion not feasible because of financial (in)feasibility and the difference between book value and market value (Sprakel & Vink, 2007).

> *"Though structural vacancy is a problem for real estate investors, they do not seem to feel the urgency of doing something about it" (Remøy, 2010, p.231).*

Conversion potency according to investors lies in financial feasibility and increasing value of the property through conversion. Remøy & van der Voordt (2014) name three reasons why conversions are still scare; the sectorial separation of real estate markets; investors do not develop, and developers do not invest in real estate for a longer period of time. Also, property (real estate) markets tend to be functionally separated, and hence office investors do not invest in i.e. housing, and vice versa. Another reason is that the possibilities of conversion are not clear to office owners. However, conversion sustains a beneficial and durable use of the location and building, implies less income disruption than redevelopment, and can have high social and financial advantages (Remøy & van der Voordt, 2014).

5.3 Developers and risk & return

Developing or re-developing real estate comes along with various risks; municipal permit procedures, long term land positions, high construction costs, developments in the capital market and a fluctuating real estate market. All these risks influence the yield. Gehner (2003) defines risks in relation to project development as "a predictable and stochastic modeling definable event that leads to a negative deviation from the required return of a project" (p. 4). Project development is a dynamic process, risk management of a dynamic process is a cyclic process (Gehner, 2003). Risk management according to figure 5.2 is divided into 3 steps: risks analysis, risk response and risk controlling. Risk management is identifying and controlling risk during realization of a project in order to increase the success factor.

In every phase of the project process the developers carries various risk:

- *Initiation phase:* according to market research and a financial feasibility study, the developer decides whether the expected return is in proportion to the risks.
- *Preparation & Design phase:* during this phase negotiations of the ground position or building starts, the purchase time of the building determines the interest rates, and is a big risk if the building is purchased in an early stage; especially when various certainties as; building permit, change of the land use plan etc. are missing.
- *Construction phase:* the developer has a controlling function.
- *Completion:* developer decided to sell or keep ownership.

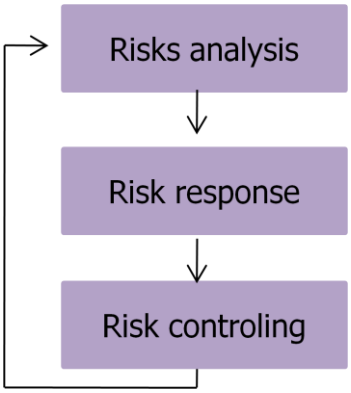


Figure 5.2: Risk management cycle during project development (Gehner, 2003)

The developer makes an investment in a project, and thus controls the investment curve of a project (figure 5.3). According to the figure, after preparation and design phase, the developer already has invested 45% of the total investment sum into the project. During the realization phase a major expense, the construction costs, are invested into the project. When looking at figure 5.4, the same investment curve is linked to a certainty and influence curve. By making an agreement, the developer has more certainty in the process, which reduces the risk.

However a side effect is influence decreases. The horizontal axis describes the milestones in a project process (Gehner, 2003).

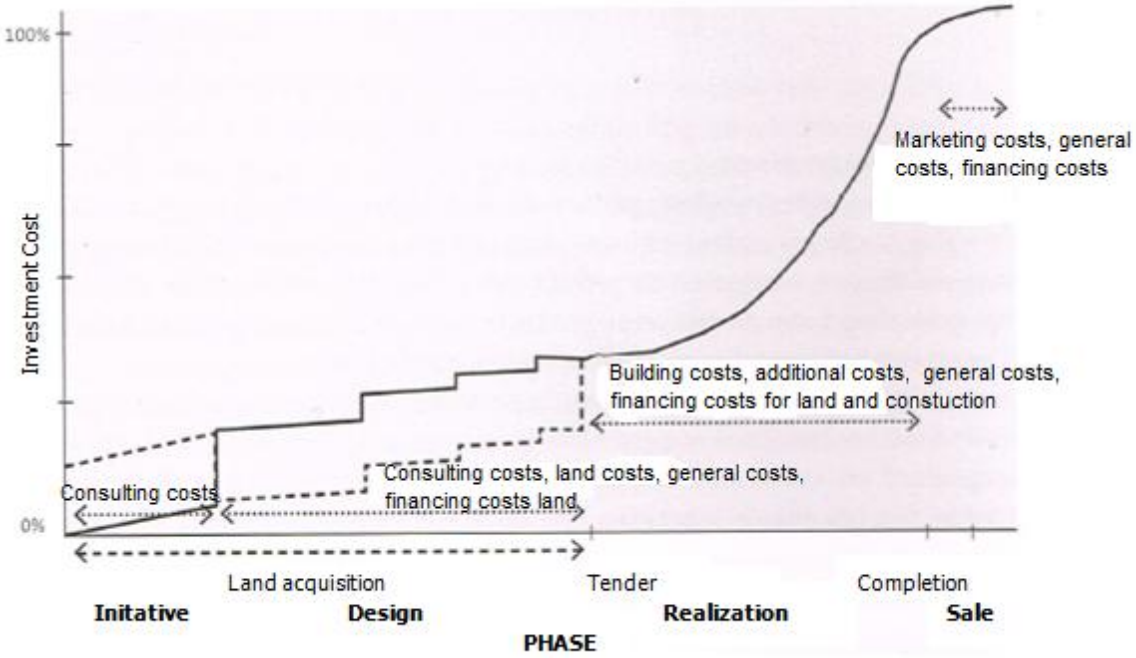


Figure 5.3: Investment Curve linked to the certainty and influence curve (Gehner, 2003)

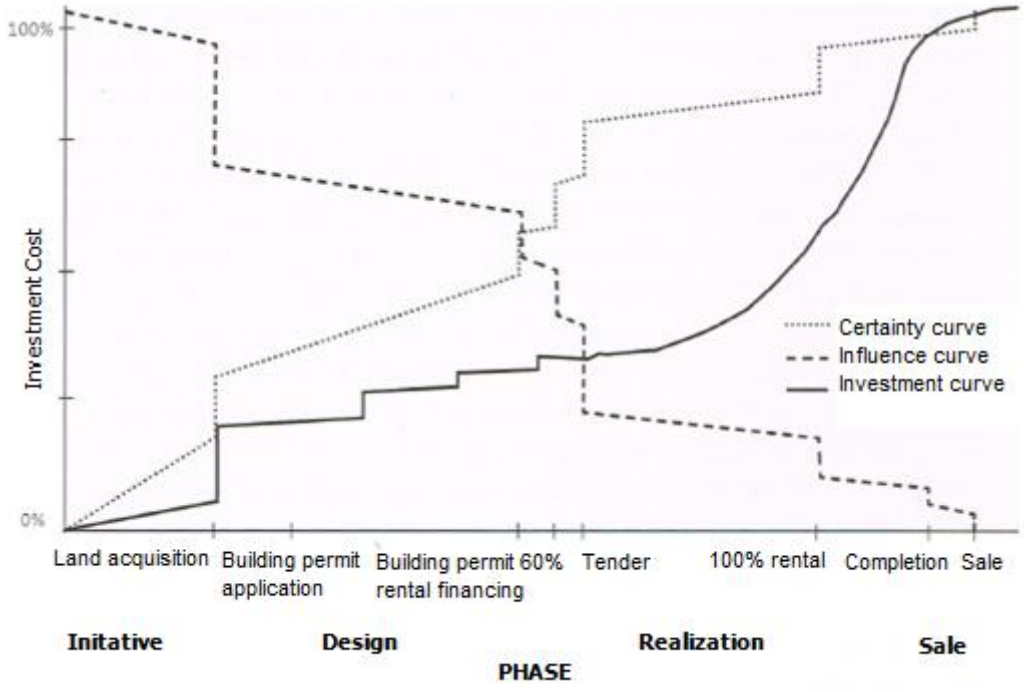


Figure 5.4: Investment Curve (Gehner, 2003)

Nowadays, investors provide capital for developers to work with, this costs developers their return. Investors can get competitive prices. While a developer previously could make a return on investment (ROI) of 20-25% (if successful), this is much lower in these days. When possible, developers will take projects at own risk, and use equity of other parties in a later phase of the process (Boiten, 2014). A developing project has to make money, Shipley et al. (2006) indicated a range of profitability attached to adaptive reuse, however, there is a greater degree of uncertainty. The business of adaptive reuse is very lucrative, with a ROI varying between 20-30% or 10-15% (Shipley et al., 2006). 'Some developers claim that ROI is enhanced because of the savings involved in reusing existing buildings' (Shipley et al., 2006, p. 511).

As mentioned before, banks are hesitant in financing conversion projects, which makes developers seeking for private financing for their projects in order to avoid restrictions and time limitations. Especially in smaller and medium sized markets projects are financed primarily private (Shipley et al., 2006).

5.4 Value Capturing

Brandenburger & Harborne (1996) defining value based on Porter (1980) as a vertical chain extending from suppliers of resources to firms, through firms, to buyers of products and services from firms. The value is created by the players of such a vertical chain. "The key to a firm's achieving a positive added value is the existence of asymmetries between the firm and other firms" (Brandenburger & Harborne, 1996, p.5). In accordance with Brandenburger & Harborne's (1996) research, they defined who captures value by the use of the concept of "added value" which is defined as; "the value created by all the players in the vertical chain minus the value created by all the players except the one in question" (p.6).

Value capturing is described as a phenomenon of 'recalculate the made investment into the future' in which risks need to be included. The following rule counts; the more or less an actor participates, the more or less an actor invests (Holt & Janssen, 2008; Offermans & van der Velde 2004). Holt & Janssen (2008) distinguish three elements which influence value capturing: 1) value must be added to the property, 2) the financial risks are low, 3) professional and managerial support, legal and institutional arrangements affect value capturing.

The value created is the willingness to pay minus the opportunity cost, wherein there is one supplier, one firm and one buyer (figure 5.5). The figure shows the willingness to pay: "the amount of money at which equivalence arises is the buyer's willingness-to-pay for the quantity of product in question" (Brandenburger & Harborne, 1996, p. 8). And "the amount of money that leads the supplier to gauge the new situation (money minus resources) as equivalent to the original status quo defines the supplier's opportunity cost" (Brandenburger & Harborne, 1996, p.9).

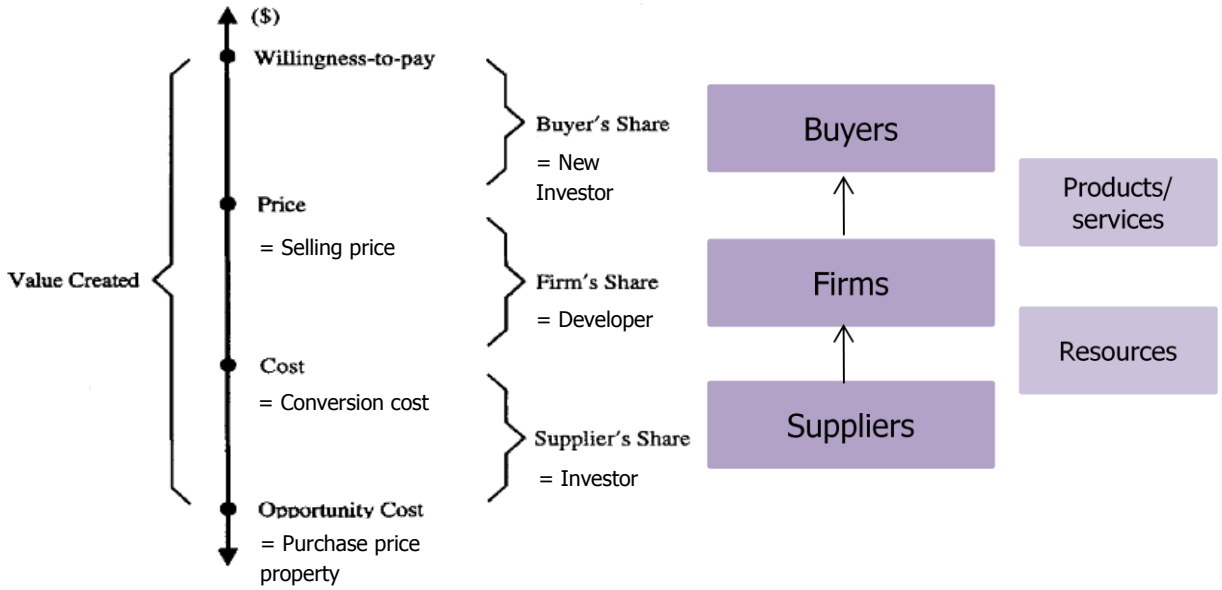


Figure 5.5: Value Capturing (adapted from Brandenburg & Harborne, 1996)

How much of the created value each player appropriates depends on bargaining between the players. The buyer captures value according to the willingness to pay for the firms product minus the price paid to the firm. The firms captured value is the price received from the buyer minus the cost of acquiring resources form the supplier and the supplier captures the same cost minus the supplier's opportunity cost. The exact division of value arises from the bargaining skills between players, and depends on how tough, or how good at bluffing etc. a player is in bargaining (Brandenburger & Harborne, 1996; Holt & Janssen, 2008). The example given is a one-on-one division of value, with more players the bargaining is many-on-many and players try to play one players off against another (Brandenburger & Harborne, 1996). Figure 5.5a shows the value capturing instruments.

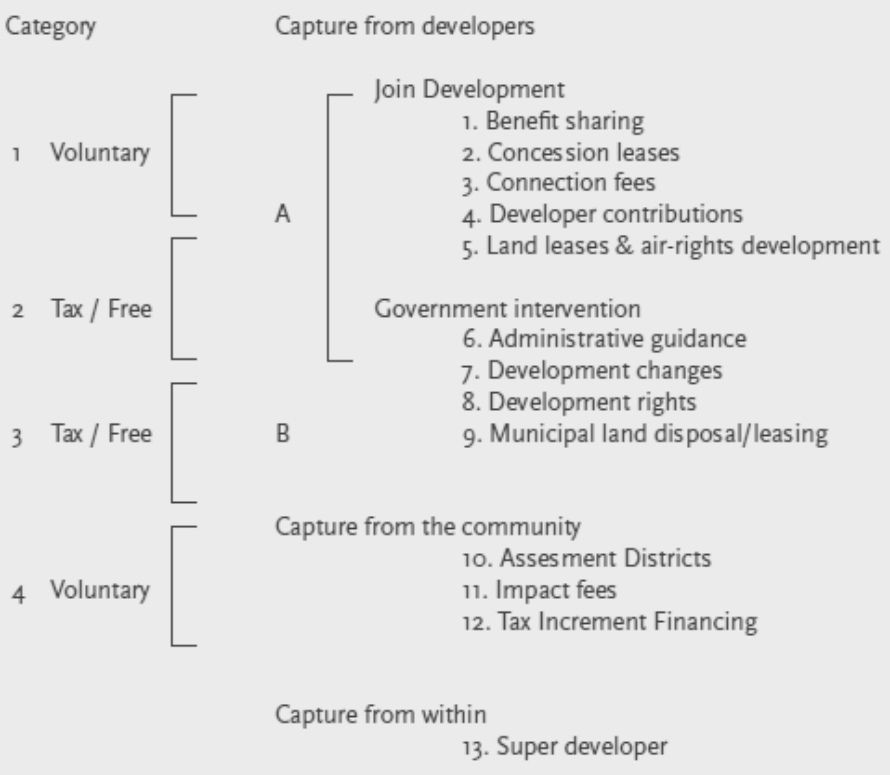


Figure 5.5a: Value Capturing instruments (Holt & Janssen, 2008)

Capturing value in real estate

As mentioned before, the value created is the willingness to pay minus the opportunity costs. The appropriation of the created value depends on bargaining between the actors involved. In a real estate project values are appropriated by different actors involved compensating various risks that were taken. Figure 5.6 shows the construction chain according to a real estate development project starting with purchasing land from the agrarian (Segeren, 2007). The figure shows that in every phase of the project one actor appropriates a value; the market value is divided among all stakeholders involved. Residual land value is only one part of the total market value of the property. Figure 5.7 shows the same figure for a conversion process.

Lusht (2001) argues whether the value can be created or destroyed by dividing the whole, as there are partial interests. Appraisals estimates the value of a complete bundle of property rights, however there are separations as; land and building, the financial components dept and equity, contractual components of leased fees and leaseholds. Or the partial interests in conversion of apartments into condominiums or cooperatives. Most of the time the whole equals the sum of the parts (Lusht, 2001). However, when the whole does not equals the sum of the parts two conditions are necessary to add value by dividing 1) there must be an unsatisfied demand for the parts, the customer must be willing to pay the added price, 2) from the supply side, it must be costly including the opportunity cost which can change if dividing changes the risk, to duplicate the results of the division (Lusht, 2001, p. 405). Dividing is a way to increase value.

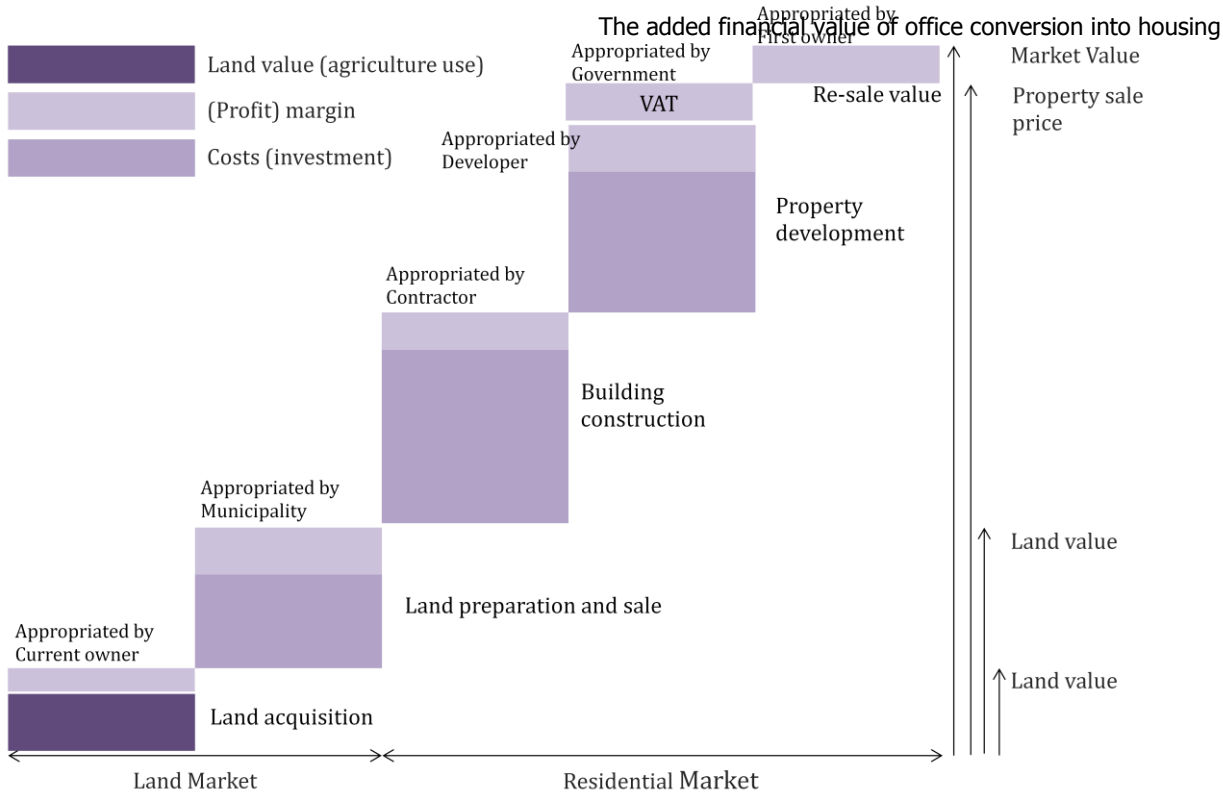


Figure 5.6: Construction chain according to the original situation (Koppels adapted from Segeren, 2007)

Besides the divisions which influence the value, the way of financing of a property affects its value as financing affects risk and expected returns. Loan-to-value ratios tend to cluster (65%-80% range) and all real estate investors have the same attitude towards risk. However there is no rectangular distribution of loan-to-value rations corresponding to investors varying attitudes towards risks, due to the existence of market imperfections such as taxes. These imperfections make certain financing structures more attractive than others and therefore affect property values in general (Lusht, 2001).

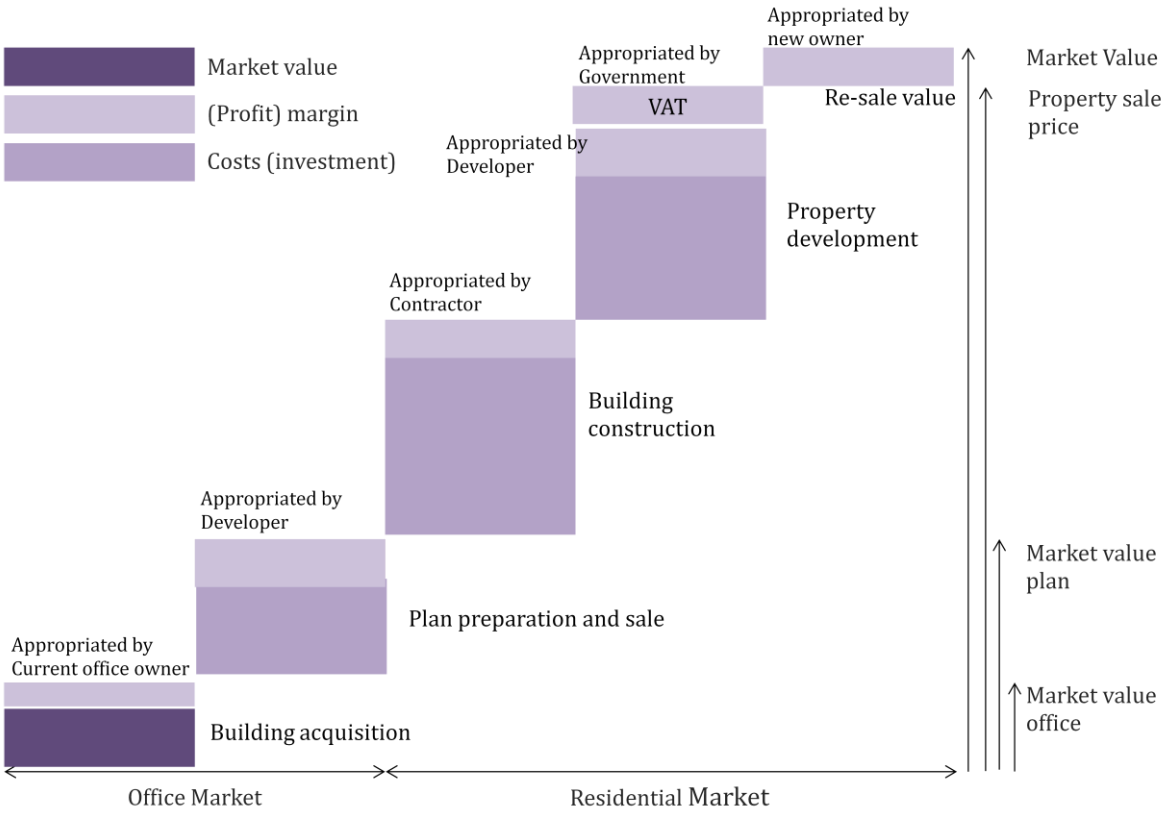


Figure 5.7: Construction chain in a conversion process (own ill. adapted from Segeren, 2007)

5.5 Conclusion risk & return

Risk in conversion (office function into residential use) can be divided into five categories: legal, financial, technical, functional, and cultural-historical risks. The most striking risks of conversion are the technical aspects which eventually translate into financial aspects. Property owners and investors are very reluctant to participate in the office conversion process, mainly due to financial reasons. However, there is a range of profitability attached to conversion, yet there is a greater degree of uncertainty. Securing financial backing is uncertain: banks are hesitant in financing conversion projects because they believe the risk is higher compared to other real estate investments. This makes developers looking for private financing for their projects in order to avoid restrictions and time limitations. Especially in smaller and medium sized markets, projects are primarily private financed.

When investors provide capital for developers to work with, the latter party loses part of its return. When possible, developers will take projects at own risk, and use equity of other parties in a later phase of the process. The business of adaptive reuse is highly lucrative, with an ROI varying between 20-30% and 10-15%.

The value created is the willingness to pay minus the opportunity cost and can be explained according to figure 5.8, wherein there is one supplier, one firm and one buyer. How much of the created value each player appropriates depends on bargaining between the players and the bargaining skills.

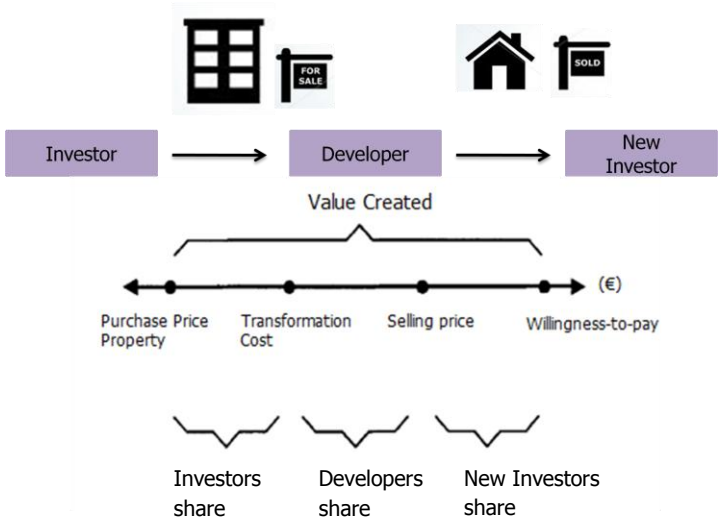


Figure 5.8: Value Capturing (own ill. based on Brandenburg & Harborne, 1996)

6. Conclusion Theoretical Framework

Adaptive reuse is a complex process consisting of many interrelated parts (Andriessen, 2007; Kurul, 2007; Williams, 1999). The increased complexity is a crucial barrier for actors to participate in this field of real estate development (Kurul, 2007). This project complexity remains to be an issue that has a strong influence on investment decisions regardless of the strength of the market (Freer et al., 1999 cited in Kurul, 2007, p.555). Furthermore, the various actors involved in a conversion process have little affinity with other actors, which makes the process more complex. In order to facilitate investment decisions which are based on objective assessment of risk, complexity, cost and value, it is necessary to map out the investors'/developers' perception of these variables (Kurul, 2007):

Investors rarely participate in conversion projects because they have a certain distance to the market. However, structural vacancy starts in the portfolio of an investor but is not always experienced as a problem when the major part of the portfolio or building is not vacant and yields a positive return (Remøy, 2010; van Elp & Zuidema, 2010). Besides that, conversion is not an exciting proposition for many building owners as conversion "means that the value of the building for office use has dropped so dramatically that a residential conversion becomes economically viable" (Heat, 2001, p. 175). From an investors point of view conversions are scare due to; financial infeasibility, investors do not develop, functional separation of property real estate market and unclear possibilities of conversion (Remøy & van der Voordt, 2014; Sprakel & Vink, 2007).

Besides conversion, an investor can sell his structurally vacant office building to a developer. The developer can initiate a conversion. However, there is an obstacle among investors and developers which is the different perspective of residual value and market value of the building (Remøy, 2010). Structurally vacant office buildings are valued based on the income approach, described by the potential rental income. Appraising according to the income approach gives an overestimation of the market value of the structurally vacant property (Rodermond, 2011). Developers calculate residually, which makes the calculated value through the income approach too high for developers. Investors perceive the developers calculated value as too low.

Structural vacancy is not the reason for developers to initiate a conversion, the commercial performance of adaptive reuse is the major reason for developers to initiate this complex process (Bullen & Love, 2010). A developing project has to make money, but the business of adaptive reuse is very lucrative with a ROI varying between 20-30% or 10-15% (Shipley et al., 2006). Securing financial backing is uncertain; banks are hesitant in financing conversion projects because they believe the risk is higher than other real estate investments. Developers seek for private financing for their projects in order to avoid restrictions and time limitations. Especially in smaller and medium sized markets projects are financed primarily private (Shipley et al., 2006). The risks of conversion are divided among five categories; legal, financial, technical, functional and cultural historical risks (Remøy and van der Voordt, 2014). The most striking risks of conversion are the technical aspect which eventually translates into a financial aspect.

All participants in an office conversion process want to get a share; capture a part of the value. In order to capture value 1) value must be added to the property, 2) the financial risks are low, 3) there is legal support (Holt & Janssen, 2008). How much of the created value each player appropriates depends on bargaining between the players, and depends on how tough, or how good at bluffing etc. a player is in bargaining (Brandenburger & Harborne, 1996; Holt & Janssen, 2008). To which extent investors and developers capture value and how this appropriation of value relates to the complex conversion process, risk and return profile will be investigated in the empirical part of the research.

C. EMPERICAL RESEARCH

7. Case study

The following chapter explores the case study research by answering the sub-questions *E1: How are structurally vacant office buildings purchased and how are the negotiations conducted?* and *E2: Which positions do actors occupy within a conversion process, how does this relate to risk/return?* First, the case study technique, sample, data collection and analysis are described. Followed by the case study analysis. This chapter concludes with a cross-case analysis.

7.1 Technique

A case study is characterized by a very flexible and open-ended technique of data collection and analysis (Grinnell, 1981 cited in Kumar, 2011, p. 138). This qualitative method focuses on a bounded subject which is representative; in this research the office conversion process. Case study is a useful design when you want a holistic understanding of the situation. It is therefore suitable for this research, in order to map out the behavior and contribution of actors involved in an office conversion process (Kumar, 2011). These represent the four variables in this research design: 1) Conversion process with actors involved, 2) Value, 3) Finance, 4) Risk/return, in order to find out: 1) to which extent the behavior of actors lead to a successful collaboration and process and 2) which compensation actors involved want for their contribution in an office conversion.

The case study in this research has a qualitative strategy which takes an inductive approach to the relationship between theory and research (Bryman, 2012). There are some prejudices against case study as a research strategy, the most common concern, is that a case study provides little basis for scientific generalization. This so called external validity is generalizable to theoretical propositions and not to populations or universes (Bryman, 2012; Yin, 2009). Scientific facts are based on multiple sets of experiments, which were replicated under the same phenomenon and conditions. In order to generalize in this research, multiple-case studies are used in order to create scientific facts (Yin, 2009).

A single case study will not be suitable for this research as the phenomenon studied 1) the case does not represents a critical test of existing theory, 2) the case is not a rare or unique event and 3) the case does not serve as a revelatory purpose (Yin, 2009). According to Herriott & Firestone (1983) "the evidence from multiple cases is often considered more compelling, and the overall study is therefore regarded as being more robust" (cited in Yin, 2009, p. 45).

7.2 Sample

Sampling in case studies must be distinguished from sampling logic commonly used in surveys. The sampling logic is a number of respondents that represent a larger pool of respondents, so that data from a smaller number of persons are assumed to represent the data from the entire pool. However, in case studies this sampling logic cannot be applied as case studies are not generally used to asses incidence of phenomena (Yin, 2009, p. 47). The replication approach is used to sample cases, wherein each case must be carefully selected so that it either; predicts similar results (a literal replication) or produces contrasting results but for predictable reasons (a theoretical replication) (Yin, 2009). This research focuses upon contrasting results but for predictable reasons, as all conversion processes are unique. In this research three cases are chosen according to the case selection criteria.

- The case should be completed (or in progress) successful conversion from a (structural) vacant office into residential use in the Netherlands.
- The cases should be of multiple sizes.
- The cases should be a relatively new completed conversion (after 2011).
- Each case should contain a different form of collaboration between actors involved.
- Sufficient information should be available on the cases.

7.3 Data collection and analysis

For case studies, three components of a research design are important (Yin, 2009):

- research questions;
- its unites of analysis;
- linking data and interpreting study findings.

Research questions

The following research questions are used in these case studies:

- E1: How are structurally vacant office buildings purchased and how are the negotiations conducted?
- E2: Which positions do actors occupy within a conversion process, how does this relate to risk/return?

According to Yin (2009) the 'how' character of the questions suits the case study research strategy.

Units of analysis

According to Yin (2009) the case study investigator must maximize four aspects of quality: construct validity, external validity, and reliability. The four variables mentioned before are examined; 1) Conversion process with actors involved, 2) Value, 3) Finance and 4) Risk/return in the following selected cases:

- Case study 1:
- Case study 2:
- Case study 3:

Information is gathered through; semi-structured interviews with stakeholders, studying drawings and documents. Data collected during field study was coded in Atlas.ti. The coding scheme is established according to the four variables. Coded data was then used to make network schemes, The links between them were used to understand how the data is related. The networks were analyzed in order to map out the process of the conversion and collaboration between actors. In table 7.1 the studied variables are mentioned.

Variables	**Indicators**	**Data collection method**
Conversion process and actors	Developer Investor (old) Municipality Investor (new) Financier Collaborations Negotiations	Interview and Documents
Value	Book Value Market Value Financial Value Value capturing	Interview and Documents
Finance	Dept capital Own equity	Interview and Documents
Risk/return	Legal risk Technical risk Functional risk Financial risk Marketing risk	Interview and Documents

Table 7.1 : List of variables studied during the case study

Linking data and interpreting study findings

Combining information from different media, the characteristics of behavior and contribution were revealed and compared with the literature. Figure 7.2 represents the followed path of data collection and analysis, and linking to existing theory.

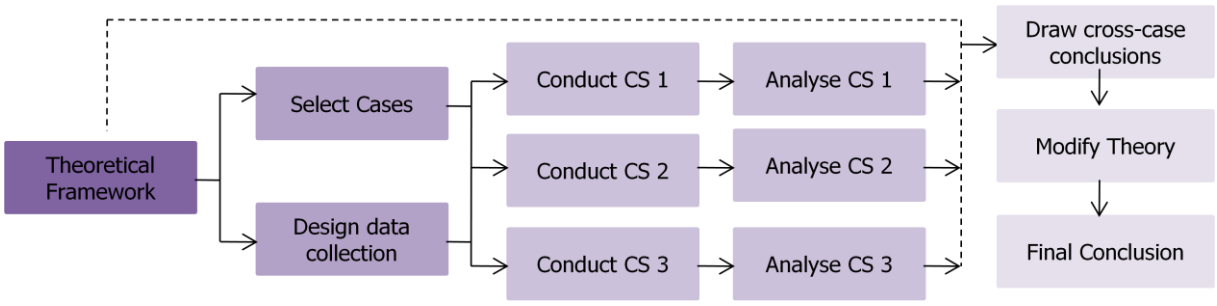


Figure 7.2: Case study process (own ilustration based on Yin, 2009)

7.4 Case analysis

Case study 1

Project information

Year of Production	1972
Completion after Conversion	2013
Surface after Conversion	3.456 m²
Classification	50 apartments: 48 social housing sector 2 rental sector 1 office space
Rental Prices	Social housing: € 560 – € 680 Rental sector: € 800 - € 900
Old function	Office
New function	Office and housing

"Case 1" was built in 1972 with its original use as an office. The building which has 6 floors was partly structurally vacant. In 2013 the ground floor accommodates an office function of 434 m², this will be maintained for another 10 years. Also a small section on the 1st floor currently has an office function, which will be maintained for another 2 years. This section will be converted into 2 starters' apartments' mid-2015.

In total 50 starters apartments divided among 5 floors were realized. 48 – 2 room apartments varying in surface from 38 m² – 60 m² and 2 – 3 room apartments on the top floor with a surface of 85 m². The top floor has a large terrace; which contributed to the decision in making these apartments for the higher rental sector as each apartment on the top floor has 100 m² of outdoor space. All other 48 apartments have no outdoor space, on the top floor there is a collectively outdoor space of 43 m².

The building has a rectangular construction of concrete floors and columns. Stability is provided by an asymmetrically located concrete core where the elevator shaft and stairwells are located. The old core is partly re-used and partly used as a new corridor. The façade had a recent upgrade, only alterations in order to meet the noise requirements were made. The total construction time took 6 months. Case 1 is the second permanent conversion project in this municipality.

Figure 7.4: Floor plan; Old situation and New situation

Process and actors involved

Informed by a real estate agent the developer found a Swiss investor who intended to sell his portfolio of assets in the Netherlands. Case 1 was one of these assets that were for sale. The process of office conversion for Case 1 was initiated by the developer. The developer identified a broad set of parameters which an organization needs to consider when converting a vacant office building. These included the location, surface, building and possibilities of reusing the building, attitude of the municipality, façade, regulations and the target group. These have been recognized by Remøy and van der Voordt (2014). Considering the location and the building, both parameters must suit the target group. In examining the feasibility of the project and testing these parameters; the building and locating of Case 1 are suitable for starters' apartments. The possibility of realizing starters' apartments was a factor that influenced the decision to undertake a conversion.

In this conversion process the municipality had an important role; first, through change of the land use plan. The project of Case 1 fits into the policy of the municipality to stimulate reuse of vacant offices. According to the developer, changing the land use plan proceeded smoothly because the municipality supported the idea of conversion into starter's apartments. However, the developer acknowledges that if the permit is less time consuming, it will be more advantageous for the conversion process. This has been recognized by Remøy and van der Voordt (2014) arguing that the slow handling of procedures which result in a loss of income. Second, the municipality also had a facilitating role during the design phase of the project, as the façade did not meet the noise requirements. The municipality cooperated in the process of finding an affordable solution. This resulted in extra lamella attached to the façade. Extra alterations on the façade were a major expense; however, it was discovered during an early stage of the process and could therefore properly be calculated into the projects investment. In this instance, a good cooperation with the municipality determined part of the feasibility of the conversion project.

A public tender is one way to find a contractor. In case of Case 1, the developer had selected various contractors on forehand; all these contractors were screened. A public tender probably creates a sharper price, the developer was aware of that. However, choosing the contractor had another purpose, the developer wanted to build a business relationship.

"At the moment there is a buyers' market", according the new investor. The developer approached the new investor with this conversion plan. The new investor acknowledges that there needs to be a "click" between individuals and companies in order to collaborate with each other; "but of course it depends on bargaining the price vs. quality". A short time span for realization of the project and this price quality ratio were conditions to be a factor that influenced the decision in purchasing the plan/property. Permits were irrevocable when purchasing the plan, some improvements in the plan could be carried out. Improvements were considered to meet the requirements of starters, and some minor design changes were made (i.e. studio apartments removed from design, finishing). As the construction phase did not start when the new investor got involved, these changes could be made, this was emphasized by the investor who stated: "we just got involved in time; if the construction phase already started we did not have any influence". The new investor an organization which provides in social housing and new owner of Case 1, chose their tenants based on a lottery. Based on this lottery procedure candidates were picked randomly. There were over more than 580 applications for the 50 apartments. Figure 7.6 shows an overview of the process and actors involved.

Value

Case 1 was partly structurally vacant, the ground floor and a small part of the first floor is an office rented by a tenant for another 10 years. The developer made arrangements with the tenant, the first floor will be converted after 2 years (mid-2015) and the ground floor will be converted after 10 years. Further there were some expiring lease contracts. When doing a follow-up project the developer prefers to buy a completely vacant building.

During negotiations, the developer tried to estimate the book value, experiencing that assessing this book value is difficult and it is still up to the seller to determine whether or not to sell the building below book value. However, the developer and current owner agreed upon the price quickly. The investor had internally appraised the office building, the developer used a cost and benefit analysis and bargained based on these outcomes. An important finding was that the developer experienced foreknowledge about motives of selling the property did not

strengthen his negation position as the investor was not in trouble. While Brandenburger & Harborne (1996) and Holt & Janssen (2008) argue that how much of the created value each player appropriates depends on bargaining between the players. The exact division of value arises from the bargaining skills between players, and depends on how tough, or how good at bluffing etc. a player is in bargaining. However, negotiating delivery of the property and covering the risks i.e. permits and a changing land use plan, were long negotiations. Agreed was upon a delayed delivery, the property transfer took place after the required permits were approved. Negotiations were conducted with presence of the local real estate agent, developer and asset manager stationed in The Netherlands. The investor came over from Switzerland twice.

It emerged from the interviews that the negotiations between developer and new investor were experienced as transparent. For example the new investor made the following comment: "it's about giving and taking". The new investor will operate the building for 50 years, with rental prices between: €560 - €900. This makes part of the building social housing. This phase from the first knowledge about the office building being for sale to the transfer of the property to its new owner, took a year.

Finance

Securing financial backing is uncertain, banks are hesitant in financing conversion projects as they believe the risks are higher than new-build (Shipley et al., 2006). In this case the developer used own equity to finance the development costs of the project. In the initiation phase the developer worked out three scenarios in order to finance the project: 1) sell the property to an investor, 2) start up an investment CV, 3) sell to the market. An investor was found by the developer. Developer and investor made an early partnership agreement. The investor is a subsidiary company of a social housing association, this social housing company has own capital and thus secured a bank loan in order for the investor to purchase the property. Because the social housing association secured a loan, the property is on their balance sheets. However it is operated and managed by the new investor.

Risk/return

The analysis of the data revealed four elements which reduced the risk for the developer during the conversion process:

- Delayed delivery (*Dutch: uitgestelde levering)* from current owner (old investor);
- Delivering the property within one day from old owner – developer – new owner;
- Positive attitude from the municipality towards conversion;
- Building is convertible with re-use of materials (i.e. façade, building core);

Development risk is a major risk according to the developer who stated: "during a conversion process there are more unexpected issues compared to new-build, which increases the risk profile". The investor highlighted the importance of reducing risk, which starts for this actor with the purchase of the building. The operating period needs to return the initial investment of the project. The investor which is a subsidiary company of a social housing association steers on minimizing risks.

Figure 7.6: Actors involved in the Case 1 (own ill.)

Case study 2

Project information

Year of Production	Late 19th century
Original Surface	5.400 m² BVO
Completion after Conversion	2016
Classification	22 apartments 350 m² BVO (office function)
Old function	Office
New function	Office and housing

CASE 2 was built in the late 19th century as a factory, but has been transformed into an office. The former headquarter of the fire department was the last tender of the building leaving the building vacant for 3 years now. In total 22 apartments (for sale) will be realized and an office function at the ground floor of a total 350 m².

Figure 7.8: Old situation: Ground Floor and 2nd Floor

Process and actors involved

Case 2 was offered by the Development Corporation of the Municipality through a public tender. The building was vacant for almost 5 years; this is structurally vacant. The Development Corporation of the Municipality first option was to give the building out for rent, but this option has failed so selling the building through a public tender was initiated. First the tender has been won by Investor 1. The building was sold to Investor 1. Investor 1 planned to make a big hostel in Case 2. However, the plans of the biggest hostel (1400 beds) received a lot of protest of the neighborhood.

The mayor of the city and several local residents have been consulting with Investor 1, wherein various possibilities such as; a smaller size of the hostel or moving to another location were explored. The owner then stated to abandon the location. Instead, the company applied for a permit for a hostel with 200 rooms and approximately 750 beds in another part of the city. The municipality bought the building back and paid € 300.000 of expenses.

The developer ended at the second place in the tender; however, the developer was aware of the discussions about the realization of the hostel in Case 2. Therefore they kept close contact with the municipality as they knew the neighborhood reacted very positive on their plans of converting the old office building into housing.

The developer has frequently collaborated in (conversion) projects with end users. This approach is also used for Case 2, a CPC (*collectief particulier opdrachtgeverschap*). The developer started to collect future residents who are interested in purchasing an apartment in Case 2. According to The developer, this is a very small target group, as most people are not willing to participate in a development and rather buy turn-key.

Value

A residually calculation determined the minimum bid of € 6.000.000. Several bids were received, 3 bids below € 6 million and 3 above 6 million euro, in total 6 applicants. The public tender was awarded to the highest bidder, Investor 1. After protest of the neighborhood, the building was awarded to the second highest bidder: The developer. It emerged from the interviews that the neighborhood influences the feasibility of the project, the first plan of building a large hostel was prevented while the property was already owned by Investor 1. The municipality stated: "an application for a major hostel was never expected".

Decision making in a commercial development process is according to Fisher & Collins (1999) based on experience (which are subjective personal experiences) and instinct rather than good information and research. This was emphasized by the developer who stated: "not speculatively start projects, analyze the market and how it evolves".

The analysis of the data revealed several options that should be considered by a developer as part of appropriating the added value of a conversion project:

- Operate and maintain the building for several years;
- Selling the building after conversion when fully operated in its new function;
- Growing the image of the building in the market.

Finance

Financing a conversion project is an interesting task, as banks are hesitant in participating in conversion projects, which makes developers seeking for private financing for their projects in order to avoid restrictions and time limitations (Shipley et al., 2006). According to the developer "every conversion project needs an unique way of financing, the location of the project is an important factor". An option is to involve the end users in the process. Case 2 is initiated following this process; the building has been purchased by the developers' own equity and end users investing in this project if they buy an apartment (with a loan or own equity). This way of financing the conversion has various benefits for the project developer; attracting a bank is unnecessary, and for the end users; this early involvement offers a cheap price for a house. 15 of the 22 apartments are already sold, which

means 68% of the project is financed by the end users. The apartments which are not sold are financed by developers own equity.

Risk/return

Most striking risks in conversions projects relate to technical aspects which translate into a financial aspect (Remøy & van der Voordt, 2014). However, a buildings location determines to which extent developers are willing to take risks. This led the developer state: "the amount of risk you take in a project is context based". Construction costs are an increased risk, however the major risk of conversion is to involve external financing by a bank, this has been recognized by Shipley et al. (2006) arguing that securing financial backing is uncertain. It takes a long time before a project can actually called a project, the acquisition phase holds a lot of risks, when the project progresses this risks reduces. Case 2 uses a transparent process, which allows developer and end users transparently discuss the risks. In this project the developer is the actor who carries all risks. When possible, developers will take projects at own risk, and use equity of other parties in a later phase of the process (Boiten, 2014). The developer experiences most risk at the initial stage during acquisition, when intentions of the current building owner and the future users are unclear.

At 15 September 2014, the environmental permit has been submitted. The municipality made a number of reports public; soil survey and asbestos research. According to the soil survey dated 2008, the soil is heavily contaminated with lead, zinc and copper. These contaminants were found in deeper layers of the soil, an in-depth research is recommended. Other research dated 2010 showed presence of asbestos in board materials for walls and ceilings. These materials have been removed in 2010, however only visual inspection could be done, so there is a possibility of more asbestos behind constructional components.

Figure 7.10: Actors involved in Case 2 (own ill.)

Case study 3

Project information

Year of Production	2000
Original Surface	22.000 m² GBO
Completion after Conversion	2014
Surface after Conversion	± 14.000 m² BVO
Classification	185 apartments
Rental Prices	€ 900 - € 1.300
Old function	Office
New function	Housing

Case 3 is located near the city center. Within a walking distance of everyday facilities (i.e. AH supermarket) and well connected to public transport as the metro, tram and a train station. By car, it takes 5 minutes to reach the highway.

The building was partly rented by Company A', Company B and Company C. Due to reorganization and downsizing Company A moved to their office in another location and the building became vacant. The building is part of an office fund with a shared ownership. This case is a conversion of a former office building into 185 apartments, spread over four towers and seven floors. There is a diversity of houses; studio's, 2,3 and 4 – room apartments, with an average surface of 70-80 m² . The design counts 47 different apartment floor plans.

A design team of architects and various advisors were involved at the beginning of the conversion process. Of the existing materials, a maximum is re-used in the new design; the façade, central entrance hall with marble floors, elevators, outdoor spaces, thermal storage equipment, stairwells and window frames. The characteristic light fixtures are re-used in the corridors of the building.

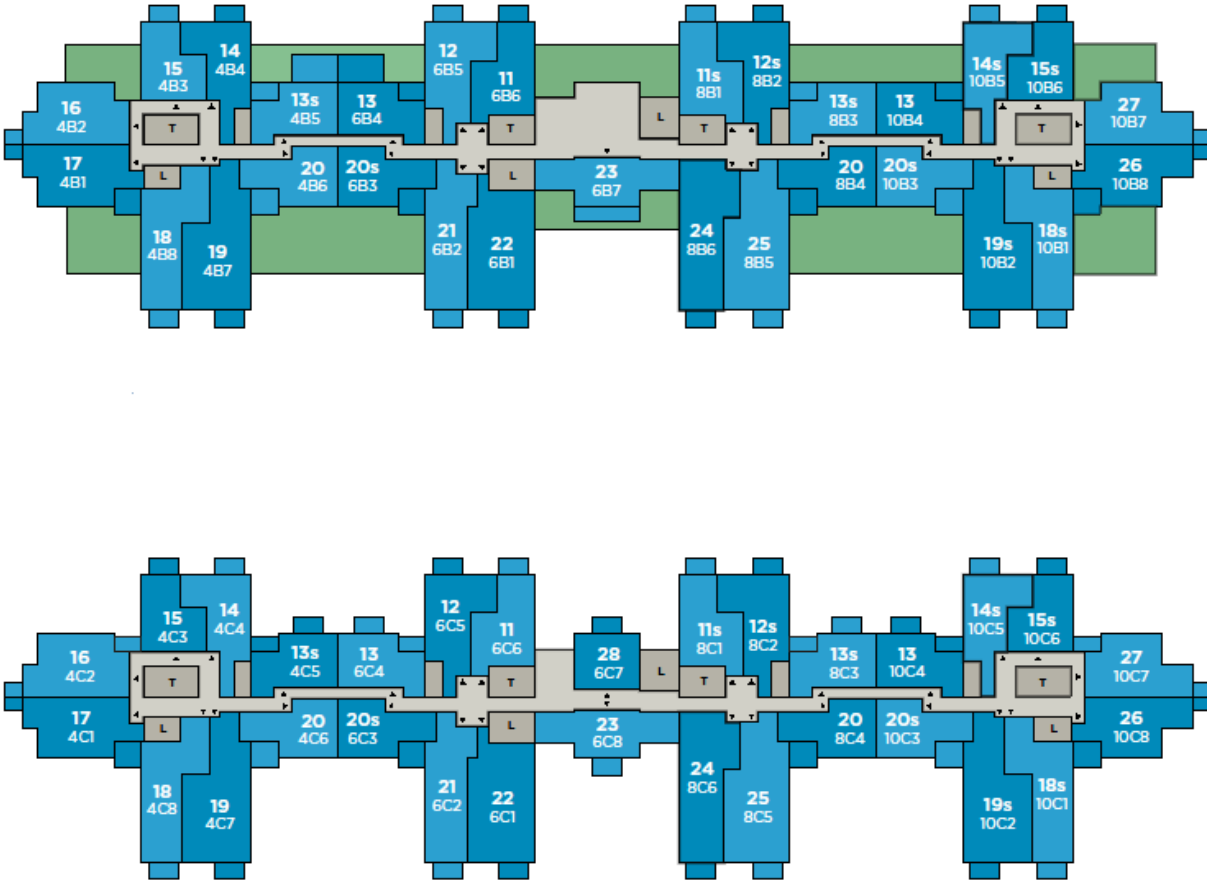


Figure 7.12: Ground floor and 1st floor new situation (Company A, 2014)

Figure 7.13: New situation (Funda, 2014)

Process and actors involved

When the building, Case 3, became vacant Company A Finance worked out three scenarios to cope with the vacancy; lease, sale or convert the building. This has been recognized by Wilkinson et al. (2009) who stated: there is a growing acceptance that conversion can be used as a strategy to cope with changing needs (i.e. building becoming obsolete, structural vacancy) (cited in Bullen & Love, 2010). During the process of these scenarios, every scenario was constantly judged by its financial feasibility. Selling the building was the best case scenario, as you 'sell' your problem. However, Company A did not find a potential buyer. Finding a tender also did not succeed, so the scenario of conversion remained. This project was originally initiated as part of a strategic reorganization and downsizing of Company A'. Company A facilitated the scenarios and their clients, the pension funds, made the final decision by choosing for conversion. Company A presented an investment proposal for the conversion as being a new acquisition for the funds.

Changing the function of the building made it necessary to place the building from an office fund into a residential fund. During this process, shared ownership remained, but one fund stepped out and was replaced by another fund. Investments were made by the funds according to their interests. An allocation of return was made between the various parties according to their investment contribution and taken risk. Figure 7.15 shows the process, Fund A remained involved, while Fund B stepped out of the project and was replaced by Fund B'. Multiple contractors were approximated for the realization of the project; the development risk was resigned to a contractor which delivered a turn-key project. A turn-key agreement was signed by the parties. The building was delivered to the contractor while the land remained in the clients' possession. The contractor was paid according to the progress of construction; this is unusual in turn-key agreements. According to Oudijk et al. (2007) when investors were active in a conversion process, the investor sold the building to a developer with the intention to purchase the building, or parts of the building, back after conversion (cited in Remøy, 2010, p.117).

The municipality was an important actor in the progress of this conversion as they facilitate processes on environmental planning. A close collaboration with the municipality facilitated a change in plans of the municipality; this was a planned noise barrier at the highway. The construction of the noise barrier was rescheduled, so Company A did not have to design extra alterations to the building's façade in order to meet the noise requirements. The municipality has a facilitating role in conversion projects (Remøy, 2010). This suggests that collaboration and a facilitating role of the municipality has a direct influence on the feasibility of the project. Changing the zoning plan proceeded smoothly as the municipality has the ambition to re-develop parts of the location (the Case 3 is part of this location) into housing.

Value

Generally, offices have a higher value compared to the value of housing. Meaning conversion results in a depreciation of the property value. This is emphasized by Heat (2001) arguing that conversion is not an exciting proposition for many building owners, as conversion "means that the value of the building for office use has dropped so dramatically that a residential conversion becomes economically viable" (p. 175). Sell the building with a loss might be more attractive than conversion due to the new investments that have to be made in converting the building. Both options have a different risk profile, selling the "problem" is more preferable according to the investor.

However, a structural vacant office building has a lower value than a fully operated office building which led the investor state: "a structural vacant office might have a low value, that only the residually value remains". In such case, compared to a filled (after conversion) apartment building, it may be that the converted building has a higher value. Heat (2001) also identified this point, conversion occurs when the demands and rents for obsolete offices are much lower than for the same building in residential use. In this case, the funds made additional investments to convert the building in order to achieve the initial return or even a higher return. Both IRR models (building operated as an office and converted building operated as housing) were compared, concluding that after an investment in order to convert the office building will result in achieving the initial return. The value develops over a longer period of time, which will recover the initial investment. In this case the building was build in 2000, which means the structurally vacancy of this buildings started already in an early stage of the operating period, according to (Bullen & Love, 2010) when a building becomes structurally vacant in an early stage of the operating period, results are the residual lifecycle expectancy not being fully operated. Which led the investor

state: "conversion extents the lifecycle of a building", it will be more preserving the value; avoiding depreciation with a possible value development in the future.

Finance

The additional investments in order to convert the office building were made by the pension funds. Attracting external financing from a bank was unnecessary. Choosing conversion in this case is also identified by Douglas (2006) arguing that if the use value exceeds the financial value, retaining the building (and possible adapt it) is more profitable than dispose. When the net present use value to the owner is higher than the financial value (which is the amount paid by the buyer to the producer) retaining the building and convert it is more profitable than dispose (Douglas, 2006; Coenen et al. 2012).

The direct and indirect return of the converted building were identified as critical factors that would determine the success of this conversion. This made the investor state: "The direct return is successful as all apartments are rented, however, the indirect return has to prove itself, assumptions are made for over 20 years". This is elaborated on more by Xu (2002) real estate investors buy property with initial capital interments and expect a growth of the future value of the property. A change in value (expected return) is not certain in the future, risk as a chance of a lower return then expected exists before the return is realized (p. 10). Rental prices are varying from € 900 - € 1.300. Also the growing housing market has a beneficial effect on the direct and indirect return. To increase success and return on the property, as much effective rentable meters were added (i.e. roof top units). In this case 40% effective rentable square meters were lost: 22.000 GFA to 13.000/14.000 UFA (usable floor area).

Risk/return

It emerged from the interview that Company A who act on behalf of the clients, cannot take any risk in conversion projects. The clients are investors and not developers, and therefore cannot take the development risk. They resigned the development risk to a contractor. The project was delivered to the contractor, and after completion delivered turn-key to the clients. The expected return is divided among the funds according to their risk taken en made investment. Acknowledging this, the following rule counts: the more or less an actor participates, the more or less an actor invests (Holt & Janssen, 2008; Offermans & van der Velde 2004). Achieving a positive added value depends on the existence of asymmetries between the firm and other firms (Brandenburger & Harborne, 1996).

Re-using the façade and a large part of the installation resulted in a higher financial feasibility of the project. The financial feasibility was also increased due to close collaboration with the municipality, wherein the municipality rescheduled a planned noise barrier which made extra façade alterations unnecessary. A various range of apartments attract a mixed target group, which is consciously chosen in order to minimize marketing risk (*Dutch; afzetrisico*). After completion in September 2014, more than 85% of the apartments were rented out. Within two months after completion 100% of the building was occupied. Despite a successful conversion in this case, however, selling the building in the first place was more preferable as the problem had then been sold.

From an investors point of view the following options should be considered as part of a successful conversion process:

- The location is important, the initial investment needs to return over time;
- Spreading the marketing risk by attracting a various target group (i.e. 2,3, and 4 rooms apartments);
- Approaching a conversion project as new-build;
- Resign development risk to contractor.

For example, the investor stated: "Most striking risk in conversion projects are the financial aspects which can make a conversion project unfeasible". According to Remøy and van der Voord (2014) risks translate into a financial aspect, however, if these risks are taken account in the initiative phase of the project, most risks can be dealt with which increases the feasibility of a project.

Figure 7.15: Actors involved in the Case 3 (own ill.)

7.5 Cross-case analysis

This section concentrates on the cross-case analysis of CS 1, CS 2 and CS 3 in order to identify 1) to which extent the behavior of actors leads to a successful collaboration and conversion process and 2) which compensation involved actors desire for their contribution to an office conversion. The collaboration, conversion process and the compensation (i.e. risk return ratio) were identified through the comparison of the network schemes of CS 1, CS 2 and CS 3. The results are classified according to their variables: process and actors involved, value, finance and risk/return in table 7.16.

	CS 1	**CS 2**	**CS 3**
Conversion process and actors involved	Developer is initiating conversion Investor involved in early process + invested in the plan Important role municipality: solution noise requirements (lamella)	Developer is initiating conversion Owner/users involved in early process (CPC) Structurally vacant office building purchased from municipality, residential function part of land use plan	Investor (funds) is initiating conversion Design team involved Changing funds during project Municipality important role: realization sound wall highway, alterations façade unnecessary
Value	Value development over time; for investor Value division depends on: bargaining, giving and taking, future collaborations	Value development over time: for user/owner	Additional investment: same or higher return in new function
Finance	Initiated with own equity Investor used leverage in order to purchase the converted plan and invests in project	Initiated with own equity User/owner obtains mortgage from bank Invests in project	Initiated with own equity, during process no external financier
Risk/return	Risk taken by developer, after transfer property development risk remained Well thought out marketing risk	Risk taken by developer Well thought out marketing risk	Full (development)risk assigned to contractor Turn-key project Same or higher return in new function Well thought out marketing risk

Table7.16: Cross-case analysis classified according to their variables of the 3 cases

Conversion process and actors involved

From the findings presented, it can be observed that the initiators'attitude towards a conversion process is the key in the collaboration and bringing together different actors to participate in the conversion process. The developers risk behavior defines the differentiation at each stage of the process (Kurul, 2007). As seen in CS 1 &CS 2, the developer is initiator of the conversion and therefore the actor bringing together all other actors involved: the municipality, architect, contractor, advisors and end users or new investor. CS 3 is initiated on behalf of an investor; again the initiator is the gathering party, bringing together all actors. A primary reason for converting a building is the commercial performance, even in CS 3 where vacancy was the reason to take action, the commercial performance influenced the decision to convert the building. Bullen & Love (2010) identified commercial performance as the main reason to determine a conversion, followed by costs and risks.

There was a general consensus among the interviewees that the municipality is the actor who 'makes or breaks' the conversion process. A positive attitude of the municipality towards a conversion process and willingness to change the land use plan is experienced as one of the most important key factors of the conversion process. Remøy & van der Voordt (2014) have also identified these risks. It influences the initiative for a conversion and financial feasibility of the project. This is reflected in CS 1 and CS 3 in which the municipality plays an important role to meet the noise requirements. Remøy (2010) already highlighted the importance and facilitating role of the municipality by maintaining zoning plans, building decree and other municipal legislation.

According to Sprakel & Vink (2007) property owners and investors are very reluctant to participate in the office conversion process, mainly due to financial reasons. Many investors find conversion not feasible because of financial (in)feasibility and the difference between book value and market value (Sprakel & Vink, 2007). The analysis of CS 3 revealed that selling the vacant property, or finding a new tenant, was preferable compared to conversion, but both options failed. Conversion remained as the only possible solution and was carried out through assigning all risks to a contractor, which is a possible solution to the problem van Elp & Zuidema (2010) highlight: real estate investment funds are not always able to convert their vacant office building according to the restrictions in the statutes, which may include the fund should only act as an investor, not as a (re)developer.

The research finding indicated that all three cases involved different new investors, but in all three cases this end investor (end user) participated in the conversion process before the construction phase. In all cases the new investor has an active role as stakeholder and influences the design and provides capital.

Value

The financial value is divided into direct and indirect return (van Beukering, 2008). The actor who invests in the project as end user is the actor who appropriates the direct (sale after operating period) and indirect return of the property. However, developers purchase the old vacant office building often at a low price, but sell their plan with the converted building for a relatively high price. The new investors are willing to buy this plan for this obtain this plan at these proportionally higher costs (i.e. CS 1). Thus, the developer appropriates part of the financial value development in the form of a return on the project. The value created is the willingness to pay minus the opportunity costs. In a real estate project values are appropriated by different actors involved compensating various risks that were taken (Brandenburger & Harborne, 1996). The exact division of value arises from the bargaining skills between players, and depends on how tough, a player is in bargaining (Brandenburger & Harborne, 1996; Holt & Janssen, 2008). Regardless of these bargaining skills, research findings reveal that reaching an agreement also depends on 'giving and taking' and vision on future collaborations. Examining the presented findings, there are other options that could be considered by a developer as part of appropriating the added value of a conversion project:

- Operate and maintain the building for several years;
- Selling the building after conversion when fully operated in its new function;
- Growing the image of the building in the market.

Generally, offices have a higher value compared to the value of housing, meaning conversion results in a depreciation of the property value. This is emphasized by Heat (2001) arguing that conversion is not an exciting proposition for many building owners, as conversion "means that the value of the building for office use has dropped so dramatically that a residential conversion becomes economically viable" (p. 175). Sell the building with a loss might be more attractive than conversion due to the new investments that have to be made in converting the building. In CS 1 and CS 2 the investor/owner managed to sell the (partly) structural vacant office building. In CS 2 the municipality was prepared to residually determine the property value. In CS 3, however, the investor did not manage to sell the building or find a new tenant, and conversion was the only option that remained (consolidation was in this particular case not an option, the building was too 'new' to demolish). Conversion, from an investor point of view (current owner of vacant property) is to extents the lifecycle of a building while preserving its value: avoiding depreciation with a possible value development in the future.

Finance

Finding cases was not very difficult, but people willing to share the detailed financial information, on the other hand, were. Limited, yet important statements are made in this paragraph about financial features. In the presented findings can be noted CS 1, 2 and 3 where initiated with own equity. It is remarkable that the purchase of the building and the project development costs were all financed with own equity. During this process of conversion, no external financier was involved. This is identified by Shipley et al. (2006), arguing that banks are hesitant in financing conversion projects because they believe the risk is higher compared to their real estate investments. This makes developers look for private financing for their projects in order to avoid restrictions and time limitations. On the other hand, Boiten (2014) argues that nowadays, investors provide capital for developers to work with, this costs developers their return. There are several ways in order to finance a project: 1) sell the property to an investor, 2) start up an investment CV 3) sell to the market, 4) initiate a CPC. There was a general consensus among the interviewees that each project requires a unique approach in order to find a way to finance it. The analysis revealed that in all three cases which are a conversion from a vacant office into housing, are financed in different ways.

Only the new investor (i.e. end users), arrange financing for the purchase of the apartment or apartment building. The developer is the actor who uses his own equity. In CS 3 the investor used own equity in order to convert the office building, further financial details were not revealed.

Risk/return

The project risks and the conversion potential of an old office building are determined by the developer/initiator of the conversion process. The research findings indicated that developers experience technical and functional risk properly to estimate, however, the most striking risks of conversion are the technical aspects which eventually translate into a financial aspect (Remøy and van der Voordt, 2014). Legal risk depends on the municipality, so close contacts with the municipality is considered to be necessary in order to estimate the legal risk (i.e. changing the land use plan and to meet various requirements). According to Remøy and van der Voordt (2014)legal risks refers to the possibility of the municipality not allowing exceptions or variations into the zoning plan (needed for conversion), the municipality is not willing to cooperate.

The research findings indicate that there are various risks which are experienced as the most striking risk during the conversion process. These include:

- There are more unexpected issues compared to new-build, which increases the risk profile;
- Building's location determines to which extent developers are willing to take risks;
- The financial aspects which can make a conversion project unfeasible.
- The amount of risk taken in a project is context based;
- The initial stage during acquisition, when intentions of the current building owner and the future users are unclear.

Remøy and van der Voordt (2014) and Douglas (2006) have also identified these points. Not only in CS 1, but also in CS 2 and 3 the marketing risk (*Dutch: afzetrisico*) is well thought out even though there is a high demand for housing units. It seems that the vacancy of the office building influences the estimated vacancy of the converted project.

The data analysis revealed five elements which reduced the risk for the developer during the conversion process:

- Delayed delivery (*Dutch: uitgestelde levering)*from current owner (old investor);
- Delivering the property within one day from old owner – developer – new owner;
- Positive attitude from the municipality towards conversion: due to close collaboration with the municipality;
- Building is convertible with re-use of materials (i.e. façade, building core);
- Minimize marketing risk.

From an investor's point of view, the following options should be considered as part of a successful conversion process:

- The location is important, the initial investment needs to return over time;
- Spreading the marketing risk by attracting various target groups (i.g. 2,3, and 4 rooms apartments);
- Approaching a conversion project as new-build;
- Resign development risk to contractor.

Shipley et al. (2006) argues that there is a range of profitability attached to conversion, but there is a greater degree of uncertainty. However, the returns were not revealed in the case studies. In a real estate project values are appropriated by different actors involved compensating various risks that were taken(Brandenburger & Harborne, 1996; Holt & Janssen, 2008). The business of adaptive reuse is very lucrative, with an ROI varying between 20-30% and 10-15% (Shipley et al., 2006). 'Some developers claim that ROI is enhanced because of the savings involved in reusing existing buildings' (Shipley et al., 2006, p. 511). The survey research will elaborate on this point.

7.6 Conclusion Case study

Structurally vacant offices are purchased in different ways, (i.e. through a public tender or normal sale procedure) yet all three cases revealed that the initiating party bought the property with own equity. The exact division of value arises from the bargaining skills between players, regardless of these bargaining skills, research findings reveal that reaching an agreement also depends on 'giving and taking' and vision on future collaborations. Various actors are involved in a conversion process wherein the initiator brought together all other actors. A developer takes the position of an initiator and therefore involves other actors as: municipality, architect, contractor, advisors and end users/investors. Nowadays, investors provide capital for developers to work with, costing developers their return. The cases revealed several ways to finance a project: 1) sell the property to an investor, 2) start up an investment CV 3) sell to the market, 4) initiate a CPC. Each project requires a unique approach in order to find a way to finance it. The research findings indicate that:

- The municipality is seen as the actor that 'makes or breaks' the project, as this actor determines the land use plan and the legal regulations. Close collaboration with the municipality is seen as a must for a successful conversion project;
- The contractor, architect and advisors are part of the process, but only appropriate a certain percentage of the financial benefit as part of the work they have done;
- Financiers (i.e. banks) are not part of these conversion process, developers invest in projects with own equity, however, the end user (new investor) is being financed by a bank in order to invest in the project in these cases;
- The end user/new investor is the actor investing in and financing the conversion project in these cases. This actor appropriates the financial value in the form of direct and indirect return.

8. Survey

The following chapter explores the case study research by answering the sub-questions *E3: What is the relationship between the risks taken and the development margin?* and *E4: Does the actor who carries most risks, appropriates the added financial value?* First, the survey technique, sample, hypothesis, data collection and analysis are described. Followed by the results of the survey. This chapter concludes with conclusion and discussion.

8.1 Technique

The survey is a quantitative research methodology (Bryman, 2012; Field, 2009; Groves et al., 2009), which is described by Groves et al. (2009) as a 'systematic method for gathering information from (a sample of) entities for the purposes of constructing quantitative descriptors of the attributes of the larger population of which the entities are members' (p.2). The research process of a survey starts with research questions, followed by generation of theory. From this theory predictions are made also known as hypothesis. To test these hypothesis, data is collected (through a survey), and analyzed which may support the theory or give cause to modify the theory (Field, 2009). Quantitative research is a research strategy that emphasizes quantification in the collection and analysis of data that has a deductive approach to the relationship between theory and research, in which the accent is placed on testing theories (Bryman, 2012, pp. 35-36).

In this research the survey is used to gather sensitive financial information of conversion projects (i.e. building costs, return, LTV-ratios). In addition, the survey examines how the risks are divided amongst actors from the perspective of a developer. The financial information and risks are the indicators which are measured. This survey needs to:

- Allow respondent to participate anonymously;
- Provide an easy platform to participate to minimize the risk respondent will fail to follow the questions;
- Ask the key questions in a way that respondents could minimize fatigue;
- Form minimum obstacles for processing of the results (Bryman, 2012).

Looking at the requirements described above; a digital survey suits this research best. In addition, this way of researching through a digital survey offers the possibility of repetition in the future, which contributes to the reliability of this research (Bryman, 2012).

8.2 Sample

The sample is referred as 'the segment of the population that is selected for investigation. It is a subset of the population' (Bryman, 2012, p.187). Selection of a sample is based on a probability or non-probability approach; in this research the non-probability sample is used (a sample that has not been selected using a random selection method) as the selection of population for investigation is already made; developers and investors. According to table 2.2 in chapter 2 the owner (ex) user and the owner investor (i.e. new user), are the actors who appropriate the value development of the property. The same table describes profit of the (re) development as a part of the value the developer appropriates.

The non-probability sample approach is in this research a convenience sampling which means a sample that is simply available to the researcher by virtue of its accessibility (Bryman, 2012). During the first phase of this research it turned out that developers and investors are a difficult group to reach for research as 1) they have 'no' time, 2) they have no interest or 3) they find the results from research to theoretical to use in their practical field. Yet, in order to achieve a high response rate as possible, there is chosen to set out the survey via platforms in order to approach a relatively 'large' group of developers and investors at a single point in time. Organizations which were willing to participate are: NEPROM, NRP and IVBN:

- The NEPROM (Association of Dutch Project Development Companies) aims to promote cooperation between government and developers in the development of real estate projects (NEPROM, 2014).

- The NRP (National Renovation Platform) is a unique network of private parties of the real estate industry. NRP creates conditions that make redevelopment and investment in existing property more attractive (NRP, 2014).
- IVBN (Association of institutional investors in Real Estate, The Netherlands) IVBNs' mission is to promote the investment climate in Dutch real estate market (IVBN, 2014).

Parties which were approached but did not respond and/or were not willing to participate:

- Vastgoed Belang;
- NVB: Vereniging voor ontwikkelaars & bouwondernemers.

Each organization has indicated which way of spreading the survey is considered most desirable with regard to their members (table 8.1):

- The NEPROM will spread the survey through there two weekly digital newsletter and their private LinkedIn group. In this way, it is difficult to send a reminder.
- The NRP selected a group of investors and developers which are relevant to this research. These members received a personal email.
- The IVBN preference was also the newsletter.
- Besides the organizations, I gathered a group of developer willing to participate in the survey, which I personally emailed (this is a very time consuming process, which will be used as a Plan B in order to increase the response rate if necessary in a later process of the research).

Organization	**Scope (members)**
NEPROM	50
IVBN	30
NRP	11
Own contacts	8
LinkedIn Groups	?
Total	**99**

Table 8.1 Scope survey

8.3 Hypothesis

This research focuses on the added financial value of adaptive re-use and the appropriation of this added value. This is attached in the main question: *To which extent does office conversion into residential use add financial value to real estate and by who is this added value appropriated?* This paragraph formulates, from the theories described in section B and the qualitative research of the case studies and expert interviews, the expectations associated with the different (potential) relationships.

According to Andriessen (2007) a conversion project exhibits similarities with a new build process; however, the adaptive re-use process is more complex. This is confirmed by the research of Kurul (2007), who argues that the project complexity is one of the crucial barriers to participate in this sector of project development. This complex process increases this risk of the project.

Hypothesis Process and actors involved

Looking back at the table 2.2 in chapter 2, according to Decisio (2006), the main reasons for developers to participate in an conversion project is the profit after re-development, and the reasons for an investor to participate is the value development over time. Besides the commercial point of view, developers experience a shift in the market from developer towards a re-developer (Developer A., 2014; Muller, 2014).

H1: Developers participate in office conversion projects due to; changing real estate market and from a commercial point of view.
H2: The (new) investor participates in an office conversion project because the value of the converted office develops over time.

Hypothesis Value

Due to the way in which structurally vacant offices are valued, an overestimation of the value is common (van Gool, 2013; Rodermond, 2011; Remøy & van der Voordt, 2014). However, developers are willing to pay a higher price for the vacant property as the land use plan and building permits are irrevocable, which reduced the risk for the acquiring party (Developer A, 2014). So the value a potential buyer is willing to pay is then more in direction of the book value.

According to the cases studies, in all cases the office conversion is financed with equity of the developer; the purchase of the building and the development costs. The developer investing and risk taking character, makes the developer an actor who appropriates part of the financial value.

H3: Changing the land use plan before selling the project adds value to the property for the (ex)owner/ investor.

Hypothesis Finance

The case studies show that in all cases the purchase of the building and the development costs were equity of the developer. This is confirmed by Muller (2014) who indicated that most conversion projects are financed with equity, mainly due to the short negotiation time of building purchase and banks which have become cautious in financing projects.

H4: The purchase and development costs of an office conversion project are financed with equity which makes the involvement of an external financier unnecessary.

Hypothesis Risk/return

According to Kurul (2007) the developers risk behavior defines the differentiation at each stage of the adaptive re-use process. During the initiation phase of a project developers decides whether the expected return is in proportion to the risks (Gehner, 2003). Adaptive re-use projects are projects which fall in an opportunistic (15% +) category because of the risks associated with redevelopment (asbestos, delays, uncertainties, regulations etc). It is necessary to make high yields (returns) in order to be able to hedge the risks (i.e. this is associated with a low purchase price) (Muller, 2014).

H5: The developer is the actor who takes most risk in an office conversion project and therefore focuses on high returns due to high risks.

8.4 Data collection & analysis

The variables of the survey are determined by literature and interviews. These variables were translated into a Dutch survey. The preparation of the survey was carried out in five phases. These phases are, respectively, 1) selection of valid survey questions, 2) schematize questions in a logical order, 3) rewrite themes into one survey, 4) testing and controlling the survey (the survey was tested by my two thesis supervisors (H. Remøy and P. Koppels), and by M. Schepman from the NEPROM) , 5) rewrite and rearrange questions. The final survey can be found in Appendix IV.

The survey is created online with Google Forms, and creates a Web address to which respondents can be directed in order to fill in the questionnaire. The final survey consist of three routes; [1] for the developer participated in an office conversion, [2] the developer who did not participate in a office conversion, and [3] for the investor. The first route contains 32 questions, the route 18 questions and the third consisted of 22 questions. Figure 8.2, shows the routing through the survey and the subjects being questioned.

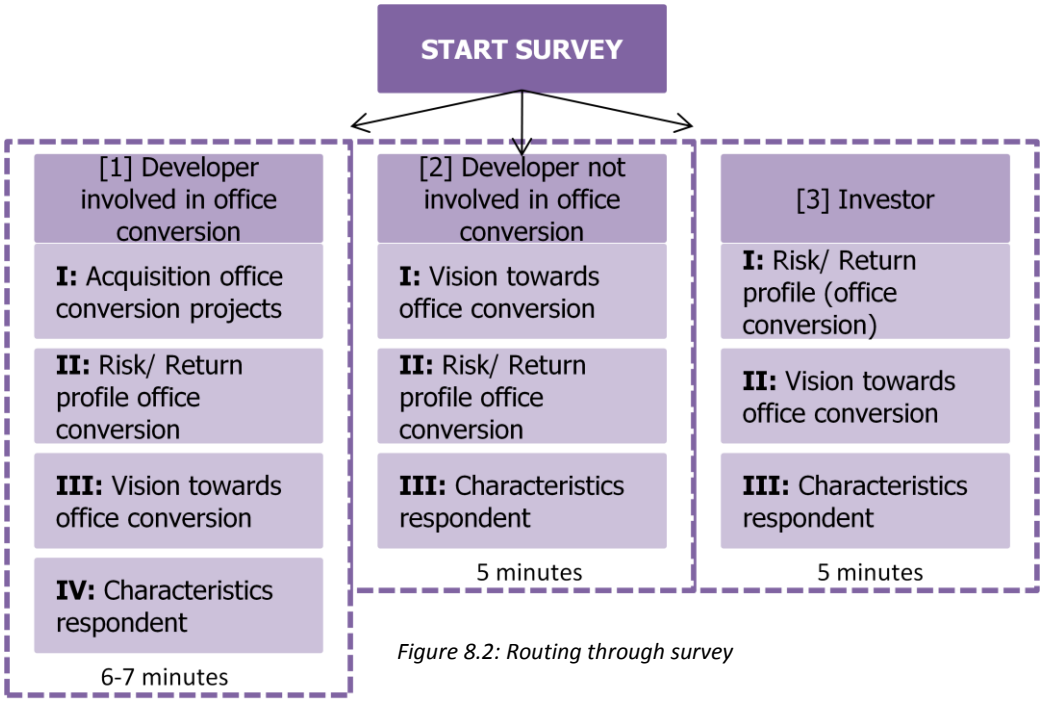


Figure 8.2: Routing through survey

As mentioned before the respondents were contacted in various ways, [1] through an advertisement in the 2-weekly digital news-paper of the NEPROM and IVBN, [2] by opening a discussion page in the private LinkedIn group of the NEPROM, and [3] they were emailed directly with the request to participate in the Web survey and directed to the questionnaire by a link (NRP and own contacts).

SPSS

The program IBM SPSS Statistics 22 is used to analyze the data. Due to the digital questionnaire made with Google Forms ensured that the results could be loaded in the analysis program SPSS without pretreatment.

8.5 Survey results

The sample of this survey research was set on 99 members. In total 25 respondents filled in the survey, this leads to a total percentage of 25%. These 25 respondents are divided among; 14 developers, 5 investors and 7 others (i.e. bank, government agency, citizens' initiative). The 7 'others' fall outside the scope of this research and will be excluded for the analysis of the survey. This results in a total response rate of 19% (table 8.3).

The survey was set up for; [1] the developer involved in an office conversion, [2] a developer not involved in an office conversion and [3] the investor. It is remarkable that none of the second group, [2] developers not involved in an office conversion, filled in the survey. This means that there are no results for this part of the survey. However, the survey is designed in a way that all questionnaires for each group can be analyzed independently (figure 8.2) so it has no influence on the further analysis. A complete analysis for part [1] and [3] can be worked out. Part [1], is the most important part for this analysis, part [2] and [3] were designed in order to trace equitation's or differences in the attitudes of a specific group (developers) towards office conversion. A direct comparison between two different groups of developers cannot be made, but this has little effect on answering the proposed research questions.

As a result of the response rate of 19%, an univariate analysis is used to analyze the data (Bryman, 2012; Koppels, 2014). According to Bryman (2012), the lower a response rate, the more questions are likely to be raised about the representativeness of the achieved sample, however, when the sample is not selected on the basis of a probability sample method it could be argued that the response rate is less of an issue. In this research a non-probability sample is used, which makes the response rate less of an issue (Bryman, 2012). However, this means only descriptive statistics are suitable in order to analyze the data (descriptive statistics means one variable at the time is analyzed referred as univariate analysis).

Survey Response Rate

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Developer	14	56,0	56,0	56,0
	Investor	5	16,0	16,0	72,0
	Other	7	28,0	28,0	100,0
	Total	25	100,0	100,0	

Table 8.3: Response rate Survey

Developers (participated in office conversion)

The following results show the analysis of the developers who filled in part [1] of the survey. Results of the characteristics of the developers (N=14) who participated in this survey, show that 78,57% works in a small company (< 50 employees). This also indicates that especially the small companies were 'triggered' to participate in the survey, Figure 8.4. Based on these results, small companies are the biggest group participating in the office conversion field. However, a larger response rate is required

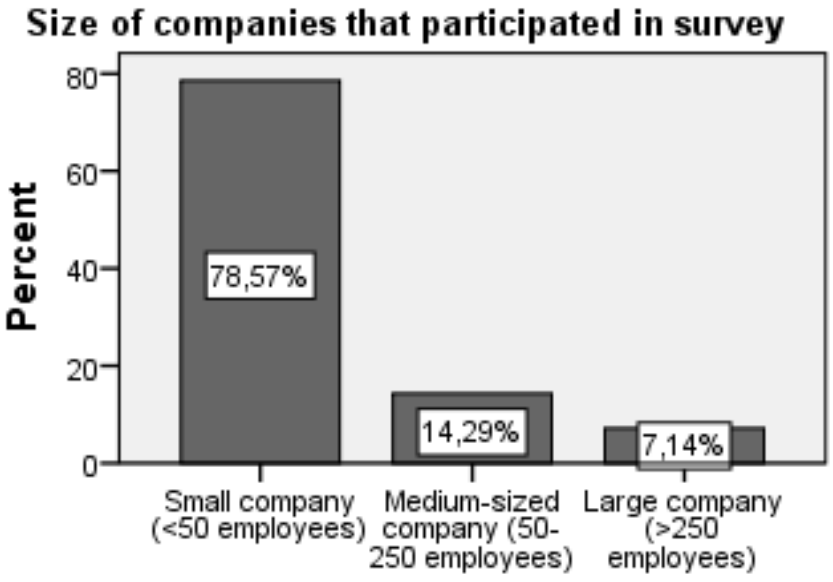


Figure 8.4: Size of developers companies that participated in survey (N=14)

in order to make this statement reliable. Yet, the results which will be discussed in the following derived primarily from the smaller developers companies (<50 employees).

When looking at the positions the respondents have within the company, 61,53% shows to be a director and 30,77% has an actual 'developers' function. In total (N=14), the developers represent 53 office conversion projects. The average number is set to 3.79 per developer. This differs widely as some developers have been involved in one conversion and a few at 9 or 10 conversions.

Total SUM Office Conversions

Developers

N	Valid	14
	Missing	0
Mean		3,79
Median		3,00
Mode		1
Sum		53

Table 8.6: Cconverted offices (N=41)

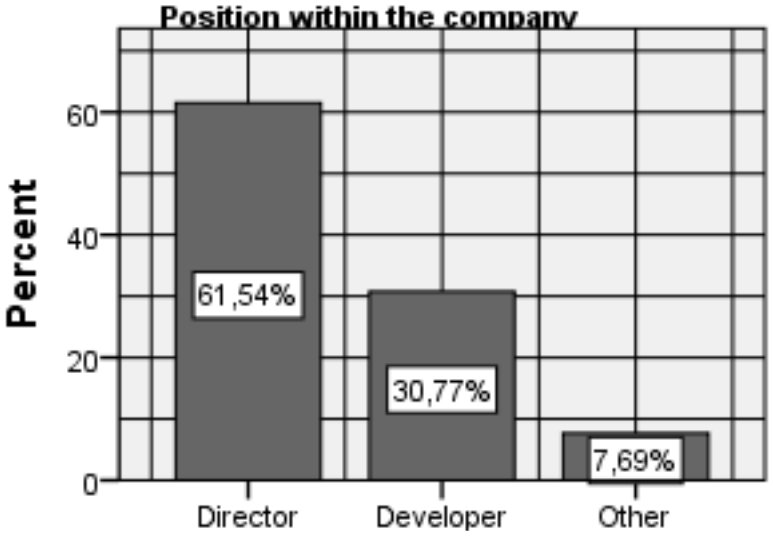


Figure 8.5: Position in developing company (N=14)

78.57% of the surveyed developers have ever been an initiator of an office conversion. In 21,43% of the cases another party initiated the office conversion (figure 8.7).

Developers participate in office conversion processes due to different principles, these principles were tested in the survey (figure 8.8). The figure shows that the two main reasons to participate in those project developments are; 1) from a commercial point of view, and 2) a changing real estate market (from a demand driven market towards a replacement market). In addition, other principles scored significantly lower which means that these principles are less important; distinctive identity, alternative way of acquiring land positions and corporate social responsibility.

Participating in office conversion from a commercial point of view confirms that developers experience/ aim profitability in these projects.

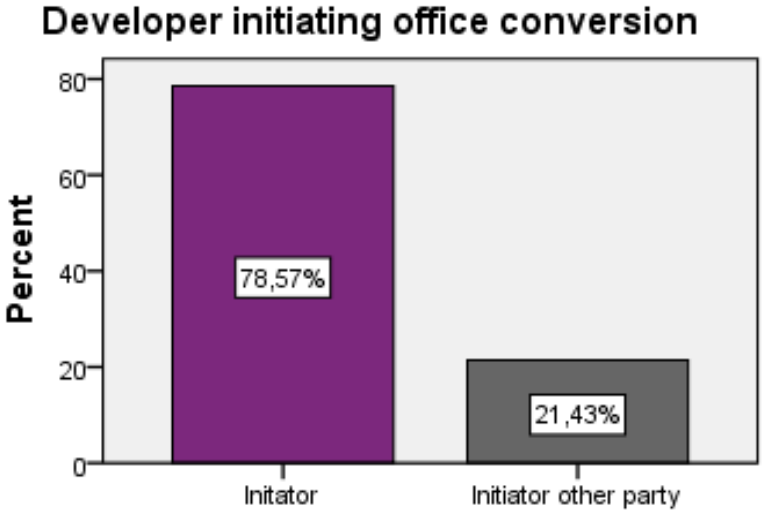


Figure 8.7: Developer initiating office conversion (N=14)

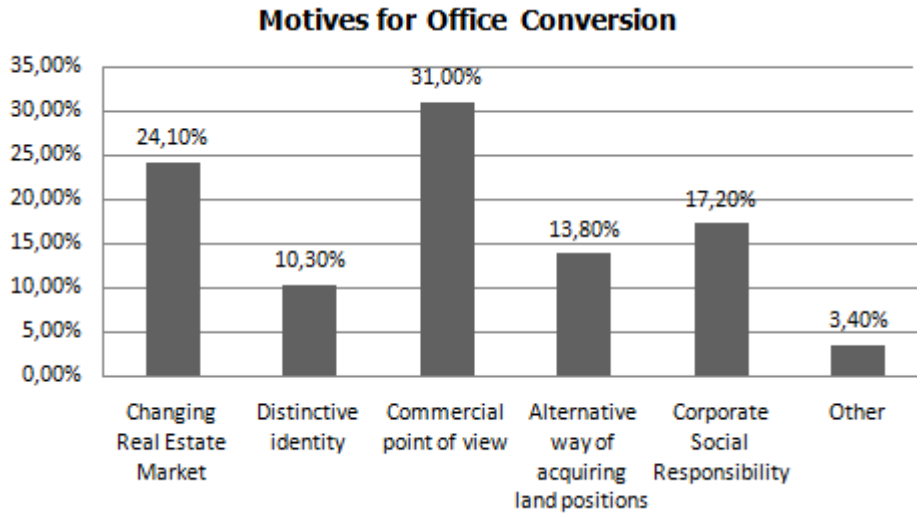


Figure 8.8: Motives to participate in office conversion processes (N=14)

To test whether developers experience a changing real estate market, they were asked if they perceive a shift in their field of expertise from a developer to re-developer.

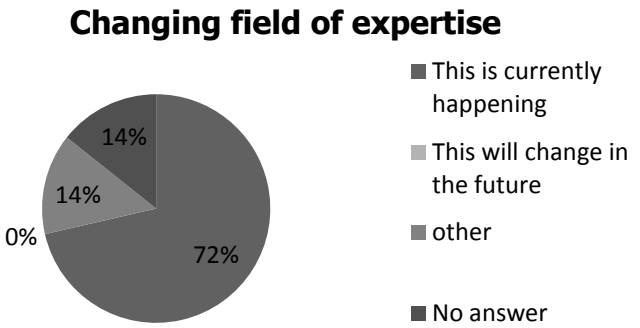


Figure 8.9: Changing field of expertise of a developer (N=14)

In order to achieve a successful (profitable from a developers point of view) conversion process, critical points deriving from the case studies were requested. These critical points are (which correspond with figure 8.10):

1. The cooperation and positive attitude of the municipality regarding office conversion;
2. The land use plan is approved before transfer of the property (from current owner to developer);
3. The building permits are approved before transfer of the property (from current owner to developer);
4. Willingness of the bank to finance the project;
5. Owners of office buildings are willing to calculate their property residually;
6. Early involvement of an investor in the office conversion process;
7. Willingness of developers to discuss the risks and returns with partners transparent.

The graph shows the outcome of the relevance of the critical points on the success factor of office conversion. Respondents were asked to rate the critical points 1 till 7 (see previous page) with 1 (=irrelevant) till 5 (= extremely relevant). There is a significant degree of relevance in all the critical points on the success factors with the exception of critical point 3 and 4. It is not necessary that building permits are approved before transfer of the property, even as the willingness of the bank to finance the project which indicates that conversion projects are financed with other sources than the bank (i.e. equity).

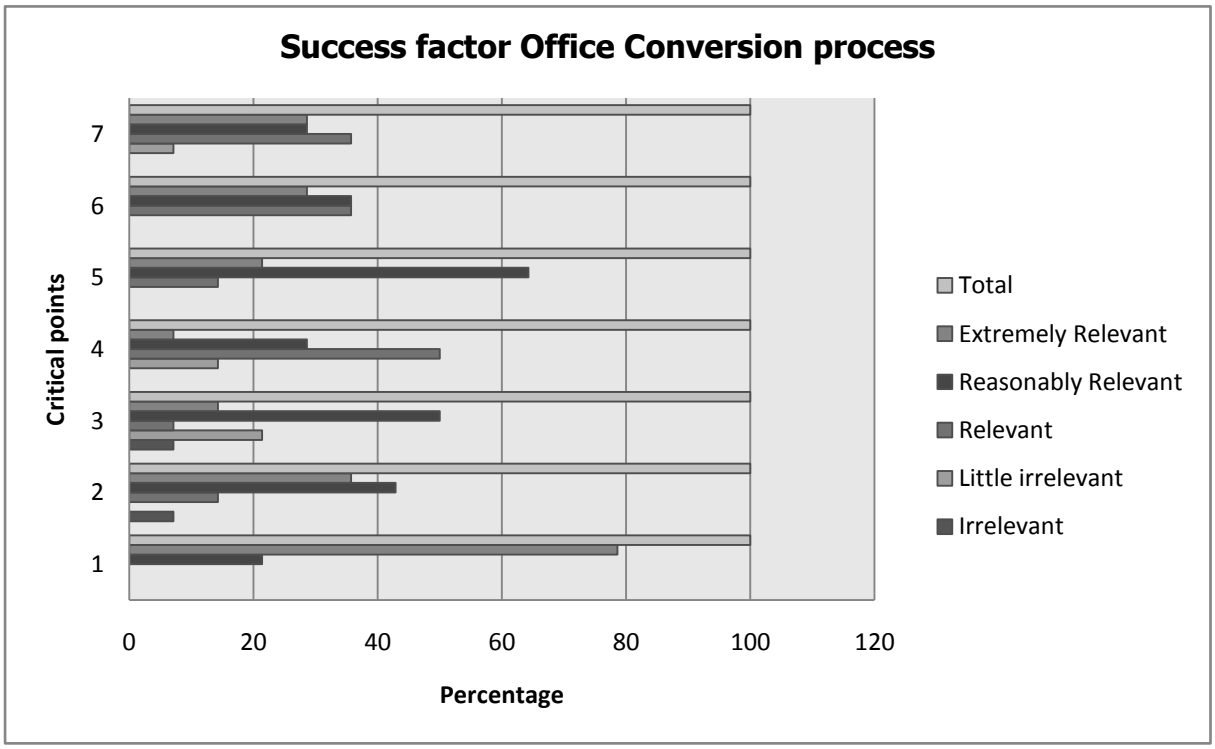


Figure 8.10: Success factors in office conversion process (N=14)

Outstanding is critical point 1; the cooperation and positive attitude of the municipality regarding office conversion, which is seen as a key point in the success of a conversion process.

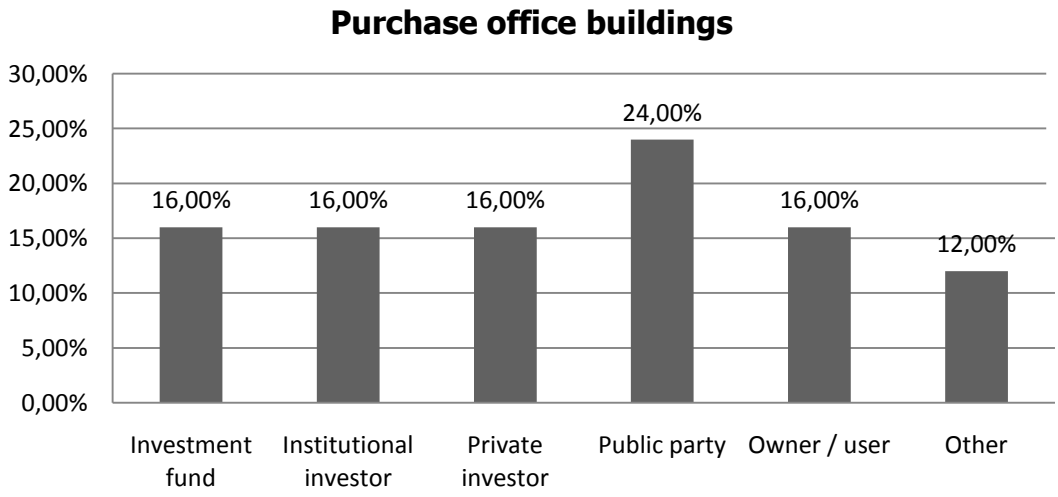


Figure 8.11: Purchase office buildings (N=14)

Office buildings (to convert) are purchased from various parties, as illustrated in figure 8.11; investment fund, institutional investor, private investor, public party and owner/user. The graph shows that most office buildings are purchased from public parties. Office buildings for conversion are mostly (partly) structurally vacant, if this is compared with the graph, this research indicates that public parties might be in possession of most of the vacancy, which contradicts the literature that indicate a high vacancy rate in funds and private parties who are defined as opportunistic investors (van Elp & Zuidema, 2010). However, to make a more valid statement, a higher response rate is necessary in order to test were the highest vacancy rates come from. There may be other reasons why public office buildings are purchased; i.e. they are on a preferred location, they have a reasonable or inexpensive price etc.

When analyzing the acquisition were developers focus on while acquiring office properties, 57,1% focuses on normal sales, 23,8% focuses on forced sales and 19% uses another method. Despite the knowledge that most developers agree (71,4%) that their negotiating position is strengthened when the office property is a forced sale (because the willingness to deprecate increases), the results show only 19% of the developers actually focuses on these properties. When looking at the characteristics of such an office building (is it completely vacant, partly vacant etc.), figure 8.12 shows that completely vacant office buildings are preferred compared to partly vacant office buildings. Partly leased with a descending lease contract are preferred over a partly leased office building.

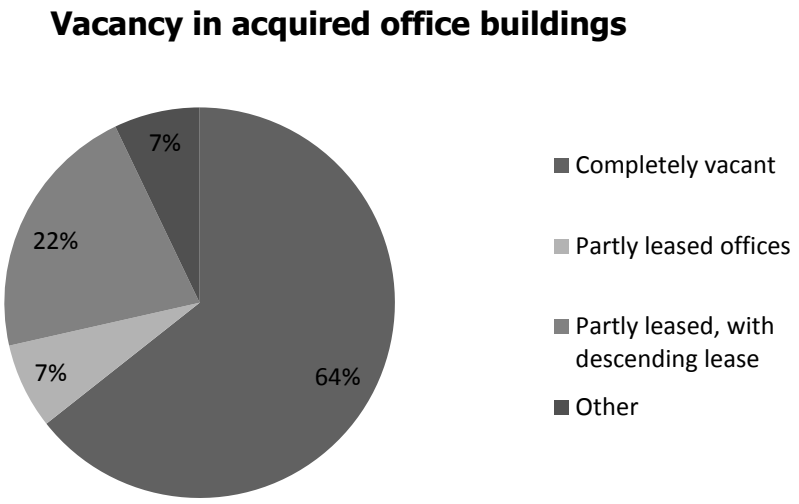


Figure 8.12: Vacancy in acquired office buildings (N=14)

However, according to the results only 35,7% of the purchased office buildings where completely vacant. All other purchased office buildings were partly leased which vary from 5% up to 100%.

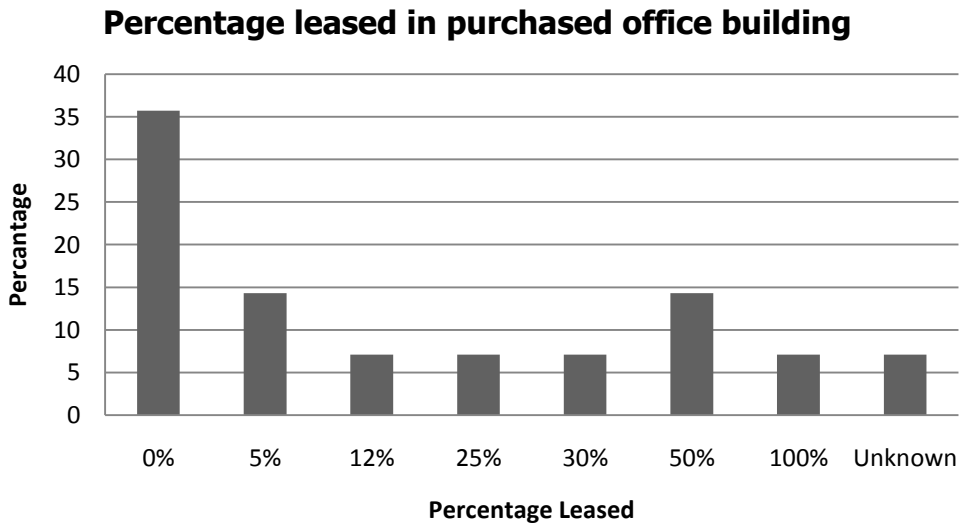


Figure 8.13: Percentage leased in purchased office building (N=14)

The respondents indicated purchasing real estate is partly leveraged (64,3%). Figure 8.14 shows a majority of the developers uses a leverage in order to acquire real estate properties. This is contradictory to the case studies elaborated in the previous chapter, in which equity is used to purchase the property. If a majority of developers refers to a purchase with leverage, there must be an external financier involved which believed in the developing plan and was willing to invest.

There has been asked how much leverage is used in order to purchase office buildings for adaptation. Majority of the respondents uses leverage between 25% and 50% (LTV-ratio) in order to purchase an office building. Figure 8.15 shows a high response (21,5%) on the 'other' answer, and remarkably all respondents answered the same; the used LTV-ratio total depends on the project, and its location.

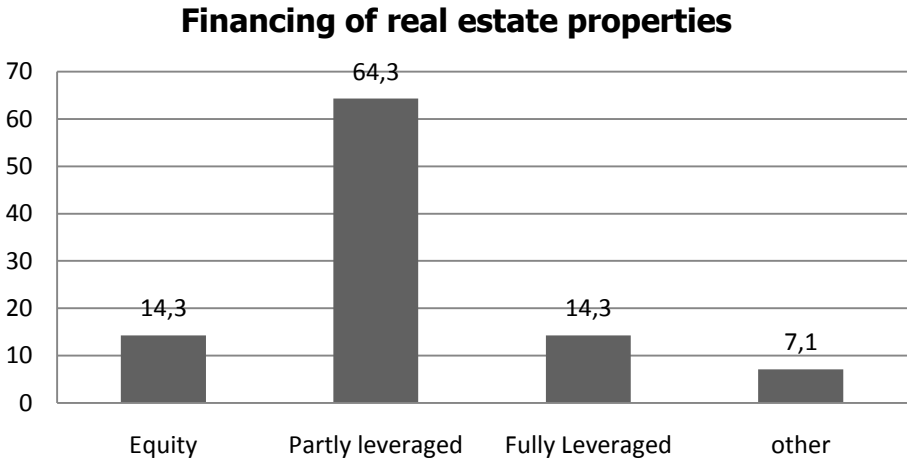


Figure 8.14: Financing of real estate properties (N=14)

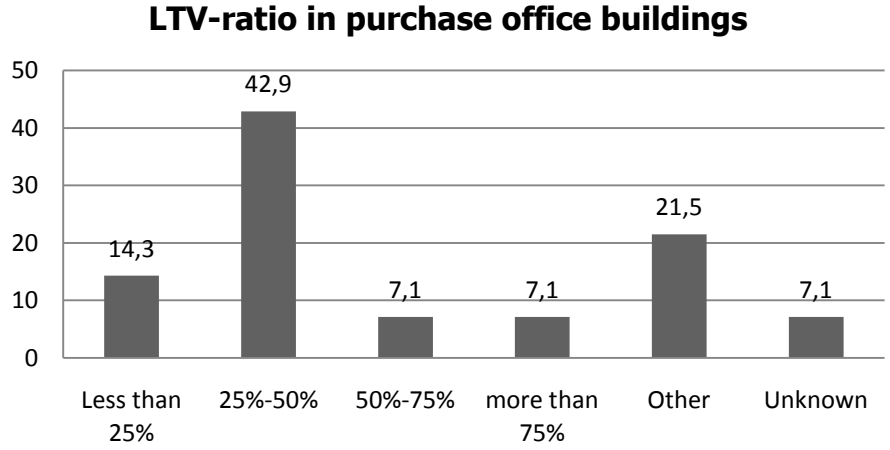


Figure 8.15: LTV-ratio purchase office buildings (N=14)

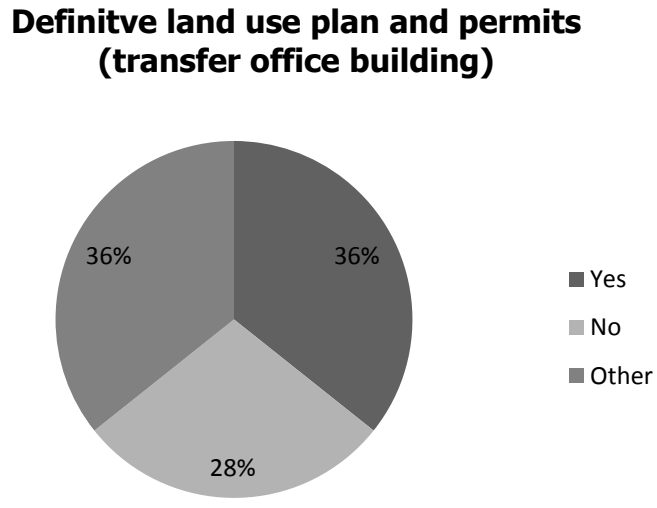


Figure 8.16: Definitive land use plan and permits before transfer of office building from old owner to developer(N=14)

In addition, the respondents were asked if it is a requirement that the land use plan and permits are definitive before transfer of the property from the old owner to the developer. According to the results, shown in figure 8.16, the answers are evenly distributed. When respondents answered 'other' they all left the comment that cooperation of the municipality must be certain. This can take the form of a commitment by the municipality towards the plans and the willingness to change the land use plan.

After questioning the respondents about the purchase and reasons to participate in office conversion project, questions were asked about the risk/return profile from the respondents (developers) point of view. They were asked to estimate the risk return profile of office conversion projects as appears in figure 8.17. The results show that developers have various views on the risk return profile of office conversion projects, as 4 and 5 were both answered for 14,3%. And 1 and 7 for 7,1%. However, 50% of the respondents answered 3

which stand for medium risk/ medium return ratio. The expectation was that 5 (high risk with a high return (above normal return)) or 4 (high risk with medium/high return) are representative for office conversion project. The results, however, show otherwise wherein 50% of the developers find office conversion projects have medium risk, which indicates they estimate the risks properly.

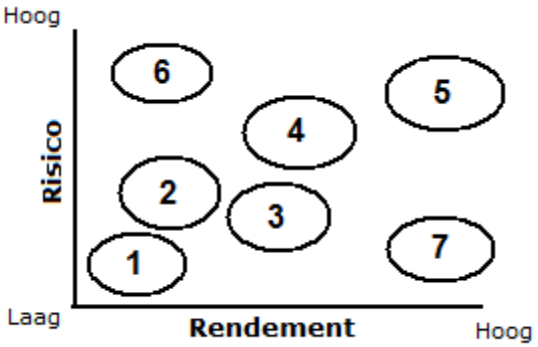


Figure 8.17: Risk return profile of office conversion projects (N=14)

The developers were asked which actor (developer, investor, current owner, municipality or bank) takes most risks in conversion processes. 78,5% filled in the developer (themselves) and 21,4% considers the investor as the most risk taking actor in conversion processes. In addition, developers are not necessarily prepared to take more risk in an office conversion process compared to a new build project. For most respondents, this remains the same or is less than new build.

Respondents were asked which development margin they handle in office conversion processes. Figure 8.18 elaborates on the results which vary between 6-15% and 24-27% and, >30%. A number of respondents (28,6%) choose to not answer the question, referred to 'I cannot answer this question' in the questionnaire, coded as 'not revealed' in the results. This might have several reasons; these margins are confidential or, the margins are high (> 24%). Based on the last assumption the total outcome of high development margins will be 50% (28,5%+14,3%+7,1%= 50%). The output of the development margins partly corresponds with the expectations of high development margins (profit) gain in office conversion projects. Not every developer gains high development margins as half of the developers are divided among 6-9% (14.3%), 9-12% (28,6%) and 12-15% (7,1%).

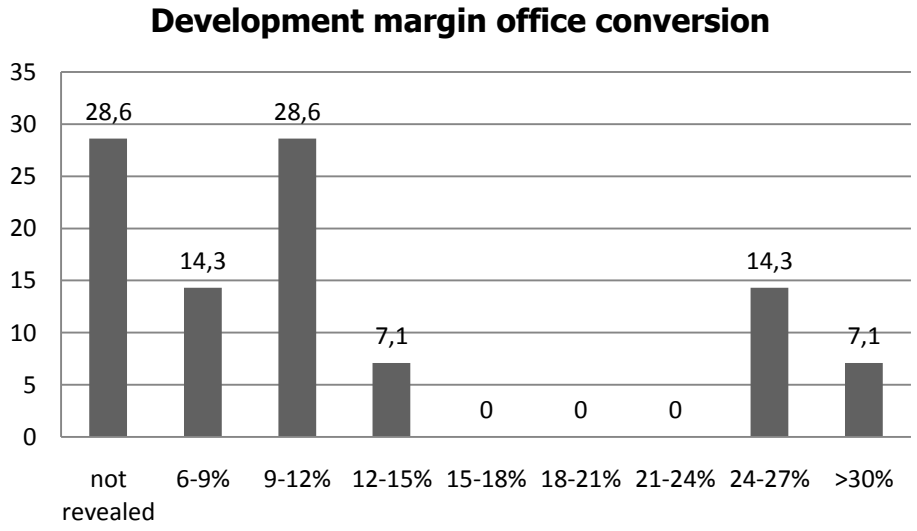


Figure 8.18: Development margin office conversion (N=14)

Besides development margins, respondents were asked if they could provide an estimate of the average construction costs of office conversion per m^2 GFA. 42,9% of the respondents answered €600- €900 /m^2 GFA and 57,1% answered €900-€1200 /m^2 GFA.

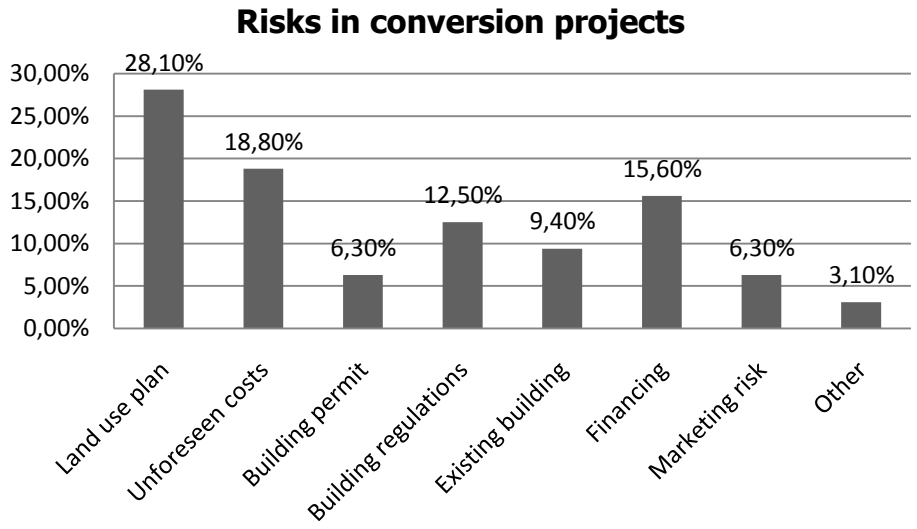


Figure 8.19: Risks in conversion projects (N=14)

Conversion projects have according to the respondents a medium risk profile. Of the risks shown in figure 8.19, changing the land use plan (28,1%) is indicated as 'hardest' risk in comparison with unforeseen costs, building permit, building regulations, existing building, financing and marketing risk. Unforeseen costs (18,8%) and financing (15,5%) are experienced 'hard' risks besides changing the land use plan.

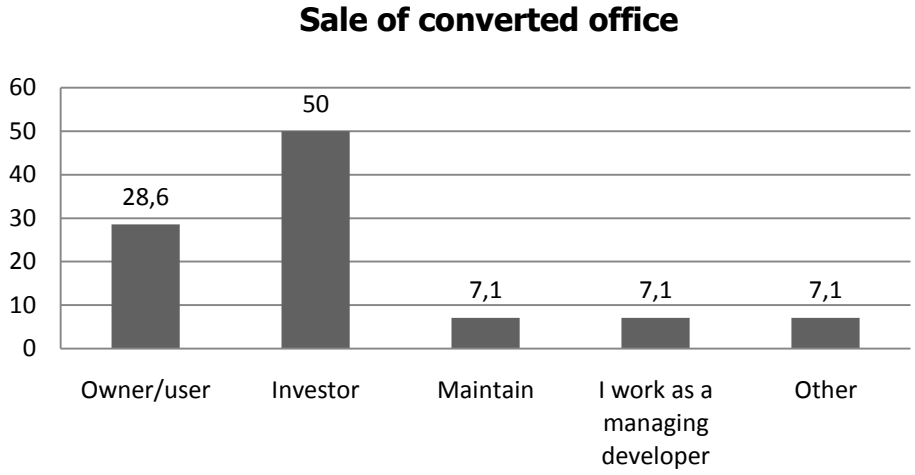


Figure 8.20: Preferred actor to sell converted office to (N=14)

Respondents prefer to sell their 'converted' office project (50%) to an investor, or (28,6%) to the owner/user (figure 8.20). Selling the converted office to an investor has the advantage that the whole project is sold at once, the market risks is covert completely. Maintaining the converted office building, and therefore, being able to appropriate the value development over time is not a preferred option (7,1%). Direct sale of the converted office building is (78,6%) preferable. According to the case studies in the previous chapter, selling the project to the owner/user or to an investor allows those actors to participate in an office conversion, but above all, they provide financing for the office conversion.

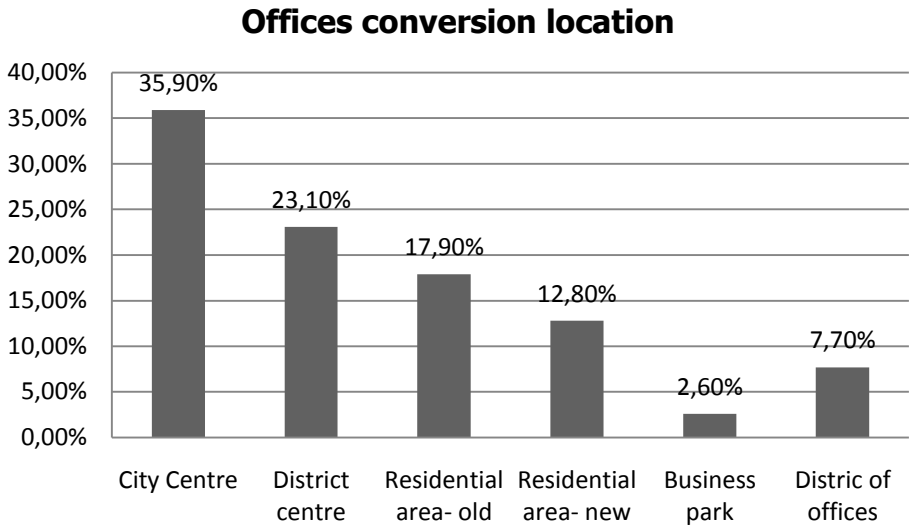
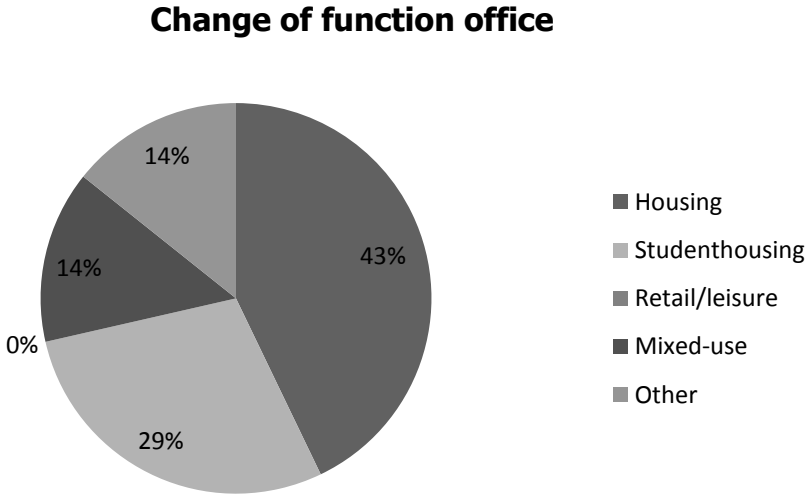


Figure 8.21: Preferred locations to converted office function into residential use (N=14)

To complete the questionnaire, there have been some general questions about preferred office conversion locations into residential use, change of function and influence of authorities to make office conversions more feasible. Figure 8.21 shows that city centers (35,9%), district (23,1%) and residential area's (old – 17,9%) and (new- 12,8%) are preferred locations to purchase an structurally vacant office building for conversion to residents. Majority of the respondents choose city centre as most preferred location. Remarkable is the fact that respondents are willing to buy structural vacant offices in a business park (2,6%) and in a district of offices (7,7%). These percentages are relatively low; however, expectations were that the outcome for these two locations would be 0%.

Figure 8.22: Change of function office (N=14)



When looking at the preferred change of function from a structurally vacant office to another function, 43% of the respondents would convert the office function into housing and 29% to student housing (figure 8.22). This means that 72% prefers to convert an office function into a residential function. The preferred function of residential use might have a relation with the housing shortage in the Netherlands, and the direct return on residential investment proved to be more stable in recent years compared to other real estate segments such as retail, office and industrial properties (ABN AMRO, 2014).

In order to make office conversion more attractive, respondents were asked what the role of authorities could be in this case. Facilitating regulations (29,5%) are according to the respondents an action which authorities can

undertake in order to make office conversion more attractive. Even as fiscal policy (20,5%) or spatial planning policy (22,7%) are actions which the respondents would like to see. However, support in the form of subsidies (9,1%) and carrying out a vacancy policy (11,4%), will not make much of a difference.

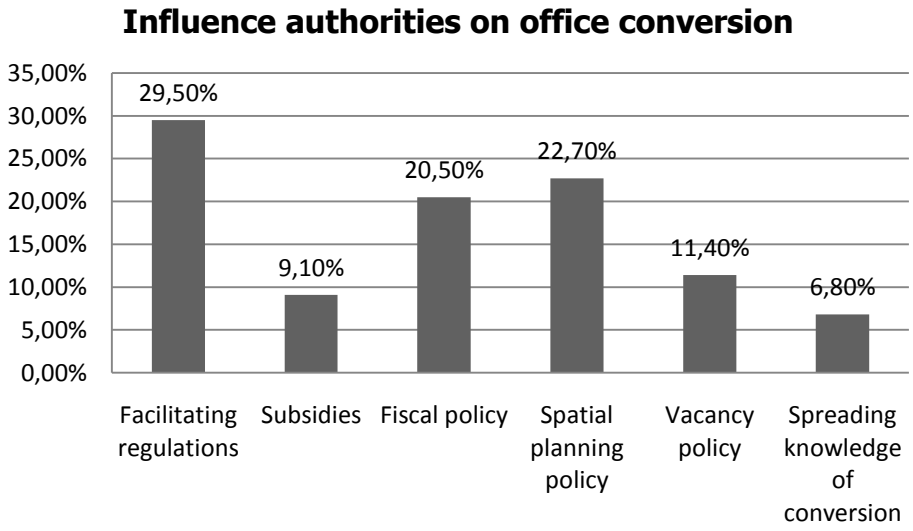


Figure 8.23: Influence authorities on office conversion (N=14)

Investors

Investors were part of the survey sample as well, however, only a response of 5 completed questionnaires came in. Therefore, in this paragraph, is chosen to work with quantities rather than percentages because this analysis does not represent the entire (investors) population.

Investors were asked which investment objective they pursued; growth (or) savings objective, the income (or) current cash flow objective or other. 4 of the 5 respondents pursue the growth (or) savings objective. 1 referred to combining both investment objectives. The investment style of the company is referred by 2 of the 5 respondents as a core investment style (return 6-8%), 1 uses the value-add investment style (return 11-15%) and 2 use a combination of styles (core & value-add) (Borst, 2013; van Gool et al.,2007). Their capital invested in offices varies from € 622 million to € 2 billion.

4 of the 5 respondents indicate to own a (partly) structural vacant office which is longer than 3 years vacant and has no prospect of future use. The action which respondents would undertake to cope with a structurally vacant office varies. The possibilities which were appointed are; sell the building, renovate, convert (change of function), nothing and wait for better times, demolition and new build, intensify property management and other. Respondents chose;

- 1; Convert (change of function)
- 1; Demolition and new build
- 1; Choice depends on location and condition of the building
- 2; Examine all possible alternatives for optimum return.

According to these results, the option of converting the structurally vacant office buildings is not immediately first choice. The option which gives most return is preferable, however, sale or renovate a building (as seen from the case studies) is not always an option when the right tenant cannot be found. Convert, doing nothing or demolition and new build are options which in that case remain. When the respondents were asked if they find conversion a solution to cope with (structurally) vacant office buildings, 4 of the 5 respondent answered; yes, 1 answered; no. According to these results and the case studies (described in the previous chapter), for the investor, conversion is an option to consider when preferred options as sale or looking for a new tenant fail, the second criteria is when considering conversion it produces a return, equal to/ or higher than the previous function. With an additional investment, investors choose to preserve value (i.e. case study 3).

Determining the value of a vacant office building can be problematic as seen in literature (Rodermond, 2011; van Gool, 2013), 3 of the 5 respondents' experiences this problem. However, 2 of the 5 have no problems with the valuation of a structural vacant office. 4 of the 5 respondents agree on the statement; investors need to depreciate their office real estate more. 1 of the 5 respondents disagreed with this statement. Based on these results, investors notice that depreciation of office real estate is necessary.

Converting a structurally vacant office into residential use, involves risks. The respondents were asked if they could estimate the risk/return profile of an office conversion. 2 of the 5 respondents estimate (2) a medium risk with a low return, 1 respondent estimated (3) medium risk/ medium return. 1 respondent refers to; risk/return depends on the process and the distribution of the risks that entail in a conversion. Comparing this with developers point of view, where in 50% of the respondents answered (3), medium risk/medium return.

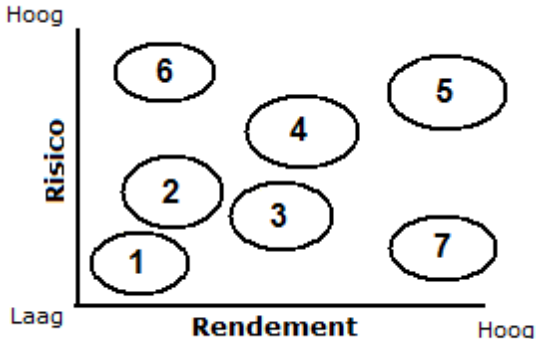


Figure 8.24: Risk return profile of office conversion projects (N=5)

The investors indicate (4 of the 5 respondents)
they are willing to be involved in an early process of office conversion. In this early process all respondents (5 of the 5), are willing to transparently discuss their risks and returns with their partners. 4 of the 5 respondents are willing to purchase a converted office into residential use for their portfolio. 1 of the 5 respondents would not purchase an into housing converted office building. This indicates when the structurally vacant office is converted; there is enough confidence that this property is profitable.

Investing in real estate is for 4 of the 5 respondents with equity, 1 of the 5 respondents invests in real estate partly leveraged. At which LTV-ratio (loan-to-value) investors are willing to invest varies among the respondents:

- 2; ≤ 25% leverage
- 1; 25-50% leverage
- 2; equity

Respondents were asked by which LTV-ratio (partly) vacant office buildings get in 'trouble'. 2 of the 5 respondents answered a LTV of 25%, 1 answered LTV of 50% and 2 respondents did not answer the question. This contradicts literature as increasing structural vacancy decreases the average value of vacant properties. Depreciation of assets have not yet occurred due to the price elasticity of the real estate market and the commercial interests. This is problematic because a lot of assets are sealed with a high percentage debt capital and only a small percentage of equity capital. The Loan to value (LTV) increases in this case, while the LTV ratio was already high (Mackay, 2013).

The respondents were asked on what basis they determine the value of the underlying real estate. This varies for all respondents;

- 1; DCF method; discounted cash flow
- 2; Bruto-aanvangsrendemtn method (BAR)
- 1; Combination BAR/NAR method
- 1; Combination various methods.

When the value of (partly) structurally vacant office buildings are determined by one of the above mentioned methods, than these results correspond with the research of Rodermond wherein a majority of structurally vacant offices are valued with BAR/NAR or a DCF method. According to Rodermond (2011) it is better to use a comparative model to value structurally vacant offices. However, in this survey it is not explicitly asked which valuation method is used in order to value structurally vacant offices, it might be respondents use other methods to value structurally vacant offices.

8.6 Discussing survey results

The survey was initiated by hypothesis deriving from literature and expert interviews, considering the financial information and risks/return profiles from office conversion projects. However, a response rate of 19% which represents 19 respondents is too low to be able to conduct a validate and reliable quantitative hypothesis test (Bryman, 2013). Instead, the hypothesis are handled as assumptions and used in this discussion of survey results as this practical piece of knowledge can be as valuable as theoretical knowledge (Flyvberg, 2006). Although this approach is limited because it does not allow a validate and reliable quantitative hypothesis test, the advantages of using hypothesis as assumptions would outweigh its weaknesses (Bullen, 2007). Flyvberg (2006) argues that "formal generalizationis only one of many ways by which people gain and accumulate knowledge. That knowledge cannot be formally generalized does not mean that itcannot enter into the collective process of knowledge accumulation in agiven field or in a society" (p. 227). A qualitative method can be supplement or alternative to other methods in order to scientific development via generalization (Flyvberg, 2006)."More discoveries have arisen from intense observation than from statistics applied to large groups" (Kuper & Kuper, 1985 cited in Flyvberg, 2006). The hypothesis formed early in this research now serve as assumptions and are a guideline in this discussion using the survey findings and literature results. A qualitative description is used in this paragraph according to the quantitative results of the previous paragraph.

Developers participate in office conversion projects due to: changing real estate market and from a commercial point of view (N=14, developers).

According to 24,1% of the respondents a changing real estate market is the reason to participate in office conversion projects. 13,8% of the respondents felt that participating in office conversion projects is an alternative way of acquiring land positions. Generally, this alternative way of acquiring land positions is part of the changing real estate market. This makes a total of 37,9% of the respondents participating in office conversion projects due to a changing real estate market. Nozeman (2014) confirms this shift in his study wherein he argues that commercial real estate has been shifting from an expansion market towards a replacement market. A changing real estate market becomes more important, 72% of respondents felt that re-developments is a growing activity. According to 31% of the respondents,participatingin office conversion is due to a commercial point of view. Bullen & Love (2010) have also identified the commercial point of view in their research as the main reason to participate in conversion.

Investors are willing to convert their structurally vacant office building into residential use (N=5, investors).

Respondents identified conversion not as a first choice to cope with structural vacancy. It was felt by the respondents to examine all possible alternatives (sell, upgrade, conversion, consolidate and wait for better times, demolition and new build, intensify property management), in order to define an optimum return (an optimum return is not necessarily a conversion). Remøy (2010) argues that investors rarely participate in conversion projects as investors are at a certain distance from the market. In addition, van Elp & Zuidema (2010) argue that investors do not always experience the vacancy itself as a problem because a major part of the portfolio or building is not vacant, and thus remains an 'acceptable' return. However, four of the five respondents feels that conversion is a possible solution to cope with structurally vacant office buildings. Respondents also provided general comments on the overarching concept of office conversion. It was felt where alternative uses of a building are formulated consideration should be given to project specific characteristics as location, accessibility, facilities, building qualities (reuse of façade and installations, sufficient floor height) and marketing risk. In addition Freer et al. (1999) argue that in order to facilitate investment decisions which are based on objective assessment of risk, complexity, cost and value, it is necessary to map out investors' perception of these variables.

Changing the land use plan before selling the project adds value to the property for the (ex)owner/investor (N=14, developer).

A part of this assumption could not be tested in the survey; the data of adding value could not be retrieved. The question: does a vacant office building with a changed land use plan and building permit yields more (through sale) than a vacant office building without a changed land use plan and building permit, was not included. This

question should be tested among a database with prices of sold vacant office buildings, with or without a changed land use plan and building permits. However, the survey results show that 36% of the respondents do not need a changed land use plan and irrevocable building permits before transfer of the vacant office building. According to 36% of the respondents, cooperation of the municipality (willing to change the land use plan and willing to facilitate) must be certain before they participate in an office conversion. Developers find it highly relevant that owners of office buildings are willing to calculate their property residually. The developer can initiate a conversion. However, there is an obstacle among investors and developers which is the different perspective of residual value and market value of the building (Remøy, 2010). Structurally vacant office buildings are valued based on the income approach, described by the potential rental income. Appraising according to the income approach gives an overestimation of the market value of the structurally vacant property (Rodermond, 2011). Developers calculate residually, which makes the calculated value through the income approach too high for developers. Investors perceive the developers calculated value as too low. Respondents (N=5, investors) confirm that vacant offices should be depreciated more.

The purchase and development costs of an office conversion project are financed with own equity which makes the involvement of an external financier unnecessary (N=14, developers).

Respondents identified to use leverage to purchase real estate properties. According to 64,3% of the respondents, the purchase of office buildings is partly leveraged, while Shipley et al. (2006) argues that banks are hesitant in financing conversion projects because they believe the risk to be higher compared to other real estate investments. In addition, Boiten (2014) argues that nowadays, investors provide capital for developers to work with. The majority of the respondents (42,9%) uses leverage between 25%-50% LTV, and 14,3% of the respondents uses leverage less than 25% LTV. Respondents also provided a general comment on the extent of using leverage in conversion projects: it was felt that the use of leverage depends on the case and location.

The developer is the actor who bears a majority of the risks in an office conversion project and therefore focuses on high returns due to high risks (N=14, developers).

Developers experience themselves as the actor carrying most of the risks in a conversion process, 78,5% of the respondents felt that they are the most risk-taking actor. However, the remaining respondents (21,4%) consider the new investor as the most risk-taking actor. The estimated risk/return profile of office conversions is according to 50% of the respondents' medium risk with a medium return. When looking at the development margin of office conversion projects, the returns are divided between 6-15% (50% of the respondents) and > 24% (21,4% of the respondents). Shipley et al., (2006) supports this, arguing that the business of adaptive reuse is very lucrative, with an ROI varying between 20-30% or 10-15%. While Boiten (2014) stated that developers previously could make a return on investment (ROI) of 20-25% (if successful), this is much lower nowadays. When possible, developers will take projects at own risk, and use equity of other parties in a later phase of the process (Boiten, 2014).However, 28,6% of the respondents did not reveal their margin, which means: this is confidential, this is extremely high, or conversion was not profitable. Because a large percentage of respondents did not reveal their development margin for office conversion, it is difficult to say what an average return on office conversion would be.

8.7 Conclusion survey

The survey was set up in order to gather market sensitive financial information of office conversion which could not be revealed through case studies. Therefore, these two studies complement one another. Hypotheses were drawn upon the literature study and expert interviews and thematicly classified among; conversion process and actors involved, value, finance and risk/return. In total, 99 members were approached, which lead to a response rate of 19%. This relatively low response rate resulted into a qualitative hypothesis test of the quantitative results. Running a hypothesis test in SPSS with hypothesis methods would not be validate and reliable due to the low response rate.

The following can be concluded (note: this is based upon the results of respondents who participated in the survey):

- Developers participate in office conversion projects due to changing real estate market and from a commercial point of view.
- Investors are willing to convert their structurally vacant office building when this yields the highest return.
- Investors must be willing to calculate their vacant office building residually and need to depreciate it enough in order to be sold.
- The purchase and development costs of an office conversion project are financed with leverage, which makes an external financier involved in the conversion process.
- The developer is the actor who takes a majority of the risks in an office conversion project, and focuses on medium return due to the medium risk profile.

9.0 Discussion: qualitative and quantitative research results

As mentioned in paragraph 1,4 research methodology, this research consist of a quantitative and qualitative part. Consciously a mixed method approach is chosen where in a triangulation of the results can be cross-checked by the results of the other research method (Bryman, 2012). In this paragraph, I will discuss the validity of the research results gained through the case studies and survey linked to the theoretical output. In order to do so, first the method of triangulation is discussed. Second, the results of the empirical research based on three case studies and a survey among real estate developers and investors will be discussed to observe how close the case study results complement the survey results. These results will refer to the theoretical output.

Triangulation

Triangulation is defined by Denzin (1978) as "the combination of methodologies in the study of the same phenomenon" (cited in Jick, 1979). Triangulation refers to using more than one particular approach when doing research in order to get richer, fuller data and/or to help confirm the results of the research (Wilson, 2014). According to Allen and Oliver-Hoyo (2006) "triangulation involves the careful reviewing of data collected through different methods in order to achieve a more accurate and valid estimate of qualitative results for a particular construct" (p.42). Triangulation is a way to increase the validity of research results and can be used in quantitative and qualitative research, which refers to a mixed-method research (Wilson, 2014). Flick (2002) defined different types of triangulation, wherein the triangulation in this research can be defined as a methodological triangulation as more than one method is used to gather data (cited in Wilson, 2014).

	Literature review	**Qualitative**	**Quantitative**
Conversion process and actors involved	Conversion process is comparable to new build process, but the conversion process is more complex The owner (ex) user; developer, owner/ investor and municipality affect the financial feasibility directly	Initiator brings together all other actors Willing of the municipality to participate can make or break the project	Developers participate in office conversion projects due to; changing real estate market and from a commercial point of view Investors are willing to convert their structural vacant office building when this yields the highest return
Value	Financial value is divided among direct and indirect return Overestimation of the value (indirect return) of a structurally vacant office when using an income approach	If the (partly) structurally vacant office is depreciated an agreement can easily be negotiated	Investors must be willing to calculate their vacant office building residually and need to depreciate The actor who invests in the project appropriates the added financial value
Finance	Difference between book value and market value Financial losses for the seller of a structurally vacant office building	Structurally vacant offices are purchased with own equity from the initiating party Financing of the project by own equity developer or financing by new investor/owner user	Structurally vacant offices are purchased with own equity or a leverage 25%-50%.
Risk/return	Legal, financial, technical, functional and cultural historical risks	Developers own equity used for initiating conversion, compensates with high return	The developer is the actor who takes most risk in an office conversion project and focuses on medium

	The value created is the willingness to pay minus the opportunity cost wherein there is one supplier, one firm and one buyer		risk/return profile (6-15%) or medium/high risk return profile (>24%)

Table 9.1: Research triangulation

Quantitative and quantitative results

Conversion process and actors involved

From the findings presented, it can be percieved that the main reason to participate in office conversion is the commercial performance which is confirmed in the case study as well as the survey. Bullen & Love (2010) justify in their research that the commercial performance is the main reason to participate in conversion processes. In addition, the survey revealed another reason for developers to participate, which is caused through the changing real estate market. Nozeman (2014) highlighted this point, arguing that the commercial real estate has been shifted from an expansion market towards a replacement market. The findings in the case studies indicate that the initiator of a conversion brings together all other actors, which in these cases was the developer (or current owner). As discussed earlier, the survey reveals that developers experience themselves as most risk taking actor in office conversion processes. Besides the developer being an important actor the municipality is seen as an actor who makes or breaks a conversion project. A positive attitude of the municipality and the willingness to change the land use plan are in the case studies revealed as the most important key factors of the entire conversion process. The results of the survey strongly confirm this with around 80% of respondents finding a cooperation and positive attitude of the municipality extremely important.

Remøy (2010) stated that investors are rarely participating in office conversion projects as they have a certain distance to the market. One of the studied cases was initiated by an investor, but conversion was not a first choice as they had rather sold or rented out their vacant office building. Findings from the survey confirm that investors felt that conversion is a possible solution to cope with structural vacancy, however an investor will consider all options and will decide the highest yielding option. In addition, investors take into account the various risk profiles, which will lead to a lower risk in both selling and finding a new tenant.

Value

In the case studies was found that the developer appropriates part of the financial value through a return on the project to compensate the risks taken. The created value is the willingness to pay for the converted building by the new investor minus the opportunity costs paid by the developer for the vacant office building. The exact division of value depends on bargaining skills between the actors (Brandenburger & Harborne, 1996; Holt & Janssen, 2008). However, the case study findings indicate that appropriation of the created value depends on more than bargaining skills since factors as 'giving and taking' and future collaboration weight in the position actors use during bargaining. The actor's position influences the toughness and bluffing during negotiations. The results from the case studies revealed other methods for the developer in order to appropriate more financial value which include operate and maintain the building for several years and sell the building after conversion when fully operated in its new function. Value development was during this research difficult to measure this phenomenon should be tested among a large database with prices of sold vacant office buildings, and prices of sold converted buildings, due to the scope of this research and time limitations this part in not included.

A direct link of value appropriation in the survey was difficult to achieve, therefore the triangulation of this research is used in order to achieve information about behavior of actors. Negotiations and behaviors are difficult to test along a quantitative method; the qualitative method of the case studies is used. What is relevant deriving from the survey is developers find it important that buildings owners are willing to calculate their vacant office buildings residually. One of the cases revealed that the municipality as building owner calculated residually.

Finance

The cases revealed that the purchase of the vacant office buildings and the project development costs were all financed with own equity. Research has revealed divided opinions concerning the use of leverage in a conversion project. In the survey was found that a majority of the respondents purchase office buildings with a leverage, while Shipley et al. (2006) argues that banks are hesitant in financing conversion projects because they believe the risk to be higher compared to other real estate investments. In addition, (Boiten, 2014) argues that nowadays, investors provide capital for developers to work with. The majority of the respondents (42,9%) uses leverage between 25%-50% LTV, and 14,3% of the respondents uses leverage less than 25% LTV. From the survey derived that the use of leverage depends on the case and location. Discussing with Developer C why this contradiction arises developer C stated: "it is quite unique to use only own equity in conversion projects". This suggests that banks might not be as hesitant as discussed in literature. The developer argued that they also use a leverage because their goal as project developer is to spend money on different projects. However, the cases revealed several options to finance a project without a leverage 1) sell the property to an investor in an early stage of the project, 2) start up an investment CV, 3) sell to the market, 4) initiate a CPC.

Risk/return

From the presented findings in the case studies, various risks were addressed as major risk in conversion projects. These included:

- More unexpected issues compared to new-build, which increases the risk profile;
- Building's location;
- The financial aspects which can make a conversion project unfeasible;
- The initial stage during acquisition, when intentions of the current building owner and the future users are unclear.

The survey results present similar outcomes, highlighting the following risks:

- Changing the land use plan;
- Unforeseen costs;
- Organize financing.

Similarities are shown in unforeseen cost/unexpected issues and organizing financing/ financial aspect of the project. However, the case studies revealed the building's location and the initial stage as major risks, while changing the land use plan is according to the survey a major risk. Remøy and van der Voordt (2014) and Douglas J. (2006) have also identified these above mentioned points.

The survey results indicate that developers experience conversion projects with a medium risk profile and a medium return. When looking at the development margin of office conversion projects, the returns are divided between 6-15% (50% of the respondents) and > 24% (21,4% of the respondents). Shipley et al., (2006) supports this, arguing that the business of adaptive reuse is very lucrative, with a ROI varying between 20-30% or 10-15%. While Boiten (2014) stated that developers previously could make a return on investment (ROI) of 20-25% (if successful), this is much lower nowadays. When possible, developers will take projects at own risk, and use equity of other parties in a later phase of the process (Boiten, 2014).

D. CONCLUSION AND RECOMMENDATIONS

10.1 Conclusions

In order to answer the main research question '*To which extent does office conversion into residential use add financial value to real estate and by who is this added value appropriated?',* this question was compiled by detailed research questions linked to a literature review and a quantitative and qualitative empiric research method (i.e. mixed method research). Four detailed research questions for the literature review were formulated; [T1] How does the construction chain of a conversion process of a structurally vacant office into residential use vary from a new build process and how are various actors involved?, [T2] How is the financial value of a (partly) vacant office buildings determined? [T3] How are the standing investments in the investor's portfolio valued, and to which extent do these values vary from the market value? and [T4] How are the risks among actors involved in a conversion process divided and can the actor who carries most risks, appropriate the added value?

Deriving from the literature review the four aspects; conversion process and actors involved, value, finance and risk/return were studied in the empirical research. During the qualitative research method (the case study) the following two detailed research questions were formulated [E1] How are structurally vacant office buildings purchased and how are the negotiations conducted? And [E2] Which positions do actors occupy within a conversion process, how does this relate to risk/return? A mixed method is used in this study, wherein the quantitative part was a survey under developers and investors. The following research questions were formulated [E3] What is the relationship between the risks taken and the development margin? and [E4] Does the actor who carries most risks, appropriate the added financial value?

Research findings: literature review

- *T1: How does the construction chain of a conversion process of a structurally vacant office into residential use vary from a new build process and how are various actors involved?*

Office conversion is a complex process, consisting of many interrelated parts and involving many different actors, each with their own interest. Project complexity is a barrier for actors to participate in this sector of project development. This complexity has a strong influence on investment decisions. Due to the constant evolvement of the development process into new forms, it is impossible to prescribe a set sequence of events. However, there are some events which vary from a new build development process: the initiation phase of a conversion process needs more research and specific knowledge (architectural aspects, construction historical aspects, procedural aspects and the opportunities and constraints in case of a listed building) about the existing building and regulations, and the change of function which requires a change of use in the current zoning plan. The various actors in a conversion process have little affinity with other actors, which makes the process also more complex. When actors participate, the municipality, the owner (ex) user, developer and owner/investor all have influence on the financial feasibility of the conversion. The municipality has a facilitating role, the owner (ex) user sells the vacant office building, the developer strongly influences the interdependency between commencing design detailing and the timing of development control decisions, and owner investor; is the actor who finances the process and participates in the value development of the property.

- *T2: How is the financial value of a (partly) vacant office buildings determined?*

The financial dimension of value is also called; 'value-in-exchange', 'economic value' or 'financial value'. It is the amount paid by the buyer to the producer for the perceived use value. If this use value exceeds the financial value, retaining the building (and possibly adapting it) is more profitable than disposal Adaptive reuse occurs when the demands and rents for obsolete offices are much lower than for the same building in residential use. Conversion is not an exciting proposition for many building owners, as conversion "means that the value of the building for office use has dropped so dramatically that a residential conversion becomes economically viable".

Structurally vacant office buildings market value is appraised based on the income approach, described by the potential rental income. Although structurally vacant office buildings generate no income and may have little prospect of a future tenancy, the income approach is used in the majority of structural office valuation. Using this method creates an overestimation of the value. Developers calculate structurally vacant offices residually, the calculated value through income approach is too high for developers. These two ways of calculating create different values, developers will perceive the price as too high and the owners will perceive it as too low.

- *T3: How are the standing investments in the investor's portfolio valued, and to which extent do these values vary from the market value?*

Investors buy and sell capital assets, thereby making up both the demand and supply side of the capital markets. Investing in real estate is the direct or indirect capture of assets in real estate, with the aim of the operation and sale of the property to realize a future cash flow. An investor may have a diversified portfolio to spread risks. There are different types of investors namely; institutional investors and private investors. Various types of investors have a variety of office vacancy in their portfolios; institutional investors have limited vacancy, as opportunistic investors experience the largest vacancy rates. Despite the high vacancy rates, investors do not always experience the vacancy itself as a problem because a major part of the portfolio or building is not vacant, and thus remains an 'acceptable' return. The residual value and the useful life of an asset should be reviewed at least at each financial year-end and, if expectations differ from previous estimates, any change is accounted. The value of an office building is based on the potential rental yield and hence the sale of a vacant building yields less than its book value.

- *T4: How are the risks among actors involved in a conversion process divided and can the actor who carries most risks, appropriate the added value?*

Risk in conversion (office function into residential use) can be divided into five categories: legal, financial, technical, functional, and cultural-historical risks. The most striking risks of conversion are the technical aspects which eventually translate into financial aspects. Property owners and investors are very reluctant to participate in the office conversion process, mainly due to financial reasons. However, there is a range of profitability attached to conversion, yet there is a greater degree of uncertainty. Securing financial backing is uncertain: banks are hesitant in financing conversion projects because they believe the risk is higher compared to other real estate investments. This makes developers looking for private financing for their projects in order to avoid restrictions and time limitations. Especially in smaller and medium sized markets, projects are primarily private financed.

When investors provide capital for developers to work with, the latter party loses part of its return. When possible, developers will take projects at own risk, and use equity of other parties in a later phase of the process. The business of adaptive reuse is highly lucrative, with an ROI varying between 20-30% and 10-15%.

The value created is the willingness to pay minus the opportunity cost, wherein there is one supplier (current owner), one firm (developer) and one buyer (new investor). How much of the created value each player appropriates depends on bargaining between the players and the bargaining skills. Value capturing is described as a phenomenon of 'recalculate the made investment into the future' in which risks need to be included. The more or less an actor participates, the more or less an actor invests. In a real estate project values are appropriated by different actors involved compensating various risks that were taken.

Research findings: empirical research

- *E1: How are structurally vacant office buildings purchased and how are the negotiations conducted?*

The cases revealed that the purchase of the vacant office buildings and the project development costs were all financed with own equity. Research has revealed divided opinions concerning the use of leverage and own equity in a conversion project. In the survey was found that a majority of the respondents purchase office buildings with a leverage. The majority of the respondents uses a leverage between 25%-50% LTV, and others use less than 25% LTV. From the survey derived that the use of leverage depends on the case and location. Discussing with Developer C why this contradiction arises developer C stated: "it is quite unique to use only own equity in conversion projects". This suggests that banks might not be as hesitant as discussed in literature. The developer argued that they also use a leverage because their goal as project developer is to spend money on different projects.

Structurally vacant offices are purchased in different ways, i.e. through a public tender or normal sale procedure, yet all with equity from the initiating party. The case studies revealed that negotiations of the purchase price can be fast.

- *E2: Which positions do actors occupy within a conversion process, how does this relate to risk/return?*

The case studies revealed that various actors involved in a conversion process are brought together by the initiator. A developer takes the position of an initiator and therefore involves other actors as; municipality, architect, contractor, advisors and end users/ investors. From the findings presented, it can be perceived that the main reason to participate in office conversion is the commercial performance which is confirmed in the case study as well as the survey. The survey reveals that developers experience themselves as most risk taking actor in office conversion processes:

- The municipality is seen as an actor who 'makes or breaks' the project, as this actor determines the land use plan and the legal regulations. Close collaboration between developer and municipality is seen as a must from the developers' point of view.
- The contractor, architect and advisors are part of the process, but only appropriate a certain percentage of the financial benefit as part of the work they have done.
- Financiers (i.e. banks) are according to the survey part of the conversion process. However, the cases all revealed developers investing in projects with own equity and revealed that the financier is the end user (new investor). This end user used a financing from a bank in order to invest in the project.
- The end user/ new investor is the actor who invests and finances the conversion project. This actor appropriates the financial value in the form of direct and indirect return.

One of the studied cases was initiated by an investor, but conversion was not a first choice as they had rather sold or rented out their vacant office building. Findings from the survey confirm that investors felt that conversion is a possible solution to cope with structural vacancy, however an investor will consider all options and will decide the highest yielding option. In addition, investors take into account the various risk profiles, which will lead to a lower risk in both selling and finding a new tenant.

- *E3: What is the relationship between the risks taken and the development margin?*

The survey revealed that the majority of the developers experience themselves as the actor carrying most of the risks in a conversion process. However, the remaining respondents consider the new investor as the most risk-taking actor. The estimated risk/return profile of office conversions is according to the majority of the respondents a medium risk with a medium return. When looking at the development margin of office conversion projects, the returns are divided between 6-15% (50% of the respondents) and > 24% (21,4% of the respondents). However 28,6% of the respondents did not reveal their margin which could mean; this is confidential, this is extremely high or conversion was not profitable. The relationship between risk return can be divided among; a medium risk with medium return or medium risk with a relatively high return profile.

- *E4: Does the actor who carries most risks, appropriate the added financial value?*

In the case studies was found that the developer appropriates part of the financial value through a return on the project to compensate the risks taken. The created value is the willingness to pay for the converted building by the new investor minus the opportunity costs paid by the developer for the vacant office building. The exact division of value depends on bargaining skills between the actors. However, the case study findings indicate that appropriation of the created value depends on more than bargaining skills since factors as 'giving and taking' and future collaboration weight in the position actors use during bargaining. The actor's position influences the toughness and bluffing during negotiations. The results from the case studies revealed other methods for the developer in order to appropriate more financial value which include operate and maintain the building for several years and sell the building after conversion when fully operated in its new function.

The developer is a risk carrying actor, who can obtain high returns if the conversion process goes without any problems. Investing developers' own equity ensures this actor appropriates part of the added financial value, as a compensation for the risks taken. However, the sale of the property to an investor or owner/user ensures these actors appropriate the financial value development over time. When this actor is early involved in the conversion process, and ensures (part) of the financing of the project, this will provide a strong negotiating position in which the financial value can be negotiated.

Answer to the main research question

This research exists of a mixed method research with a quantitative and qualitative part in order to answer the main question: To which extent does office conversion into residential use add financial value to real estate and by who is this added value appropriated? An exploration of the aspects derived from the literature review. Additionally, an empirical study of the conversion process and actors involved, value, finance and risk/return defined the outcome of this research.

Considering the total research, it answers the main question as following: the main reason to participate in office conversion is the commercial performance. An office conversion adds financial value to the property in a value development over time in its new function (residential use) for the investor or user/owner. The actor who invests in the project appropriates the added financial value; this may be the developer or the investor, depending on who finances which part of the project and on the negotiations conducted.

The developer appropriates part of the financial value through a return on the project to compensate the risks taken as initiating a conversion, changing the land use plan, unforeseen costs, organize financing and the location of the building. This research revealed returns which are divided between 6-15% and above 24%. The created value is the willingness to pay for the converted building by the new investor minus the opportunity costs paid by the developer for the vacant office building. The exact division of value depends on bargaining skills, risks taken, granted 'giving and taking'-factor and potentiality of future collaboration between the actors. However, financing the project and taking risks strengthens the negotiation position.

10.2 Recommendations

This research concludes the added financial value of office conversion into residential use and moreover, defines who appropriates this added financial value. Based on the research results, advice and clarity is given for the investor, developer and municipality. The following discusses research implications for practice, highlighting the target group of this research.

Real estate Investor

When structural office vacancy occurs in the real estate portfolio of an investor, it is advisable to take a closer look at the case as letting the building 'vacant' is not a convenient choice. The real estate market is changing, in which less square meters of offices are needed due to the new ways of working and a declining working population. Selling the building, upgrading, consolidating, demolishing and newly building or converting are all strategies in order to cope with a structurally deserted office building. According to this research, selling the building or finding a new tenant are preferable strategies compared to conversion. However, there are chances the right tenant could not be found. If this occurs, it is recommendable to consider a conversion strategy. This research has proven that conversion into residential use adds financial value to the property and is a financially feasible process as long as the location, building and market are in the right conditions. Reinvestment must be made, but the added financial value then can be appropriated by the current owner in which it is possible to achieve an equal or even higher return.

As a new investor/new owner in conversion projects it is advisable to step in the process in an early phase. This has some advantages; the plan is still open to influence, there are tax benefits and providing the project finance naturally results in a strong negotiating position.

Real estate developer

Results of this study indicate that a changing real estate market and a commercial point of view are main drivers for developers (with experience in office conversion) to participate in office conversion projects. The commercial point of view is interesting as it proves (if done properly) that office conversion yields a positive return. External financing of conversion projects can be done in the form of an investor investing (buying) the plan before conversion. This should be arranged before transfer of the property, a close collaboration in this process with the current owner is relevant. Results of the case studies show own equity used for the office conversion projects, in none of the cases a bank was part of the process. However, the survey results show that conversion projects are financed with a leverage of 25%-50%. According the this research results, conversion into housing is a profitable new function for a vacant office, all cases show examples of which have been sold or rented within a very short time (typically within one month of completion).

Municipality

Target groups of this research were the real estate developer and real estate investor. During the study it turned out that the municipality has a major role in conversion projects, as developers experience this actor can 'make or break' the project. The municipalities' behavior influences the financial feasibility of the project. In a conversion process, market parties must have confidence in the willingness to participate of the municipality. In addition to the willingness to participate, a changing policy, which makes office conversion more feasible, is preferable by developers. Developers have indicated that conducting a vacancy policy is not necessarily useful to increase the feasibility of conversion projects. Further research into this phenomenon is necessary in order to find out how municipalities can make a good contribution to the conversion process.

Recommendations for further research

As discussed in the scientific relevance of this research, adaptive reuse is a research topic which has broadly explored by the Real Estate and Housing Department of the Technical University of Delft. However, there are

limited publications on the added financial value and the behavior of actors in a conversion process. Nozeman (2014), argued a shift in the real estate market, wherein redevelopment becomes more important. This research shows that this changing real estate market is linked to commercial performance. According to Nozeman (2014), these changes result in indistinctness in several areas: 1) the impact of the replacement market on the behaviors and motives of various real estate actors, 2) where the main hurdles lay in the attitudes of the parties involved and organizational processes of conversion projects, 3) if debt financing is reduced, what opportunities does that give to alternative forms of finance and how should restructuring of real estate with an decreasing yield be financed. This research elaborates on all three points, determining the position of the actors involved in conversion, mapping out the attitude of the developers and investors among risk and return, and showing that a dept financing is used in conversion project.

This research encountered many parts of the defined problem area. However, the broadly defined main research question provides opportunities for further scientific research:

- Research into 'how much' the added financial value is (i.e. a quantitative analysis into a database with office conversion cases and compare the value before conversion with the value after 5 or 10 years).
- To which extent the vacancy policy has an effect on market parties, and which policy changes need to be made in order to make conversion project more attractive.

10.3 Reflection

The last step in this research is reflecting the research upon its subject and process, briefly referring to the initiated objectives and its contribution to social and scientific relevance.

Research subject

Structural office vacancy is a problem that has been detected for years now and has evolved into a social problem. There is a quantitative and qualitative structural mismatch in the office market between supply and demand. Abstraction of the current supply is necessary for a significant reduction of the structural vacancy. A solution is adaptive re-use (i.e. changing the function of the building); converting a vacant office building into residential use. The structural vacancy starts in the portfolio of an investor, which formed the starting point for this research focusing to which extent structural vacant office conversion into housing adds financial value to the property and the various ways in which office conversion can be financed (i.e. loan, private equity, crowd funding etc.). This point was chosen to give an overview for the investor to make conversion financially attractive. During the problem analysis and startup of the literature review, the research focus has shifted. The section on financial value remained, but the actors changed. According to the literature study, a solution towards structural vacancy is much more complicated then sorting out financing forms. A conversion is successful when various actors interact with each other. This shifted the research to the target groups; investor (own vacant office), developer and new investor/user. Which resulted into a study to which extent office conversion into residential use add financial value to the property and which actor appropriates the added value.

This study was set up with the aim 1) to tight the vacancy problem in the office market of the Netherlands, 2) to determine the financial added value of conversion of offices into residential use, in order to persuade various market parties the financial benefits of office conversion, and 3) to find out who appropriates the added financial value to allow more transparency between the involved stakeholders. First, this research has not directly 'tight' the vacancy problem, but gives insights into adaptive re-use as a (financially) feasible solution in order to cope with structural vacancy. Second, the added financial value is expressed as financial feasibility in the case studies and survey, resulting in conversion of a structural vacant office (with the right location, market and building features) as a profitable solution. Third, the added financial value is appropriated by the investor and developer. With this knowledge these actors can make agreements in order to corporate together to make an office conversion project more financially feasible. Achieving these goals has a social relevance as all goals were drawn up to make a contribution to society.

Scientifically, the results of this research contribute to broadening the subject of adaptive re-use. Adaptive re-use is a key research topic in the research program of Real Estate & Housing, and much research into this topic has

been done by professors as well as master students. Looking at the added financial value of office conversion into residential use and the appropriation of this value is a relatively new perspective. The topics which are discussed in the case study and survey are a relevant contribution to the existing knowledge. Providing insights into the initiation of a conversion process, the collaboration between; investors, developers, new investors/user, and risk/return profiles.

Research process

Conducting this research and writing my master thesis was the last phase of being a student at the Technical University of Delft. The process started with a fascinating subject; adaptive re-use, and has developed into a relevant contribution for society and science. In addition, I wanted this research to prepare myself for the phase after graduation. Therefore, part of this research is divided into topics I needed to develop in order to be able to be a (re-) developer.

This study was set up as an independent research, this choice of being independent rather than connecting to a company suited this research well. A lot of experts, developers, investors and banks were willing to cooperate in this research. The independent factor has led to a self-employed research and is only recommended (in my opinion) to those who possess a lot of discipline and ability to work independently.

During the research process a literature study, case studies and a survey were conducted. This makes the research a mixed-method research; qualitative and quantitative. Doing qualitative research is a well known method in the subject of adaptive re-use (at the department of Real Estate and Housing) and turned out to be well researchable. Quantitative research (survey) on the other hand, is not used often and proved to be difficult to carry out. Target groups as developers and investors are difficult to approach for a survey. In this research the respondents were approximated through Dutch largest platforms as NEPROM, NRP and IVBN, however the response rate was low. This is remarkable as an interview (i.e. case study) takes an hour of the respondents' time, while filling in a survey takes 6-10 minutes. This low response rate had an effect on the analysis of the survey, however, descriptive statistics turned out to be sufficient enough to answer the research questions.

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