

The impact of building features on the building's financial performance

"Do pre-crisis and after-crisis features decide?"

Master Thesis Presentation

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Content

- Introduction
- Theoretical Framework
- Methodology
- Results (Descriptive)
- Results (Statistical Modelling)
- Discussion
- Conclusion

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INTRODUCTION



Introduction

Problem definition

- Financial crisis
- Both investors and tenants have become more critical
- Rational basis for investments is lacking
- True building qualities become important
- 'Willingness to pay'
- 'Location' as the single decision-making criterion has become outdated

Hypothesis

The building features are of such importance to the net rental income of an office building that it needs to be considered as a decision-making criterion in the acquisition strategy of an institutional real estate investor.

Building features = physical features at building level

Net rental income = financial performance of an office building

Decision-making criterion = what criteria to use

Acquisition strategy = which building to choose

Main Research Question

Which pre-crisis and after-crisis, physical and non-physical office building features, are to be distinguished to improve the set of decision-making criteria for the acquisition of office buildings by institutional real estate investors? What recommendations can be made to implement these features into an acquisition strategy?

Theoretical Framework

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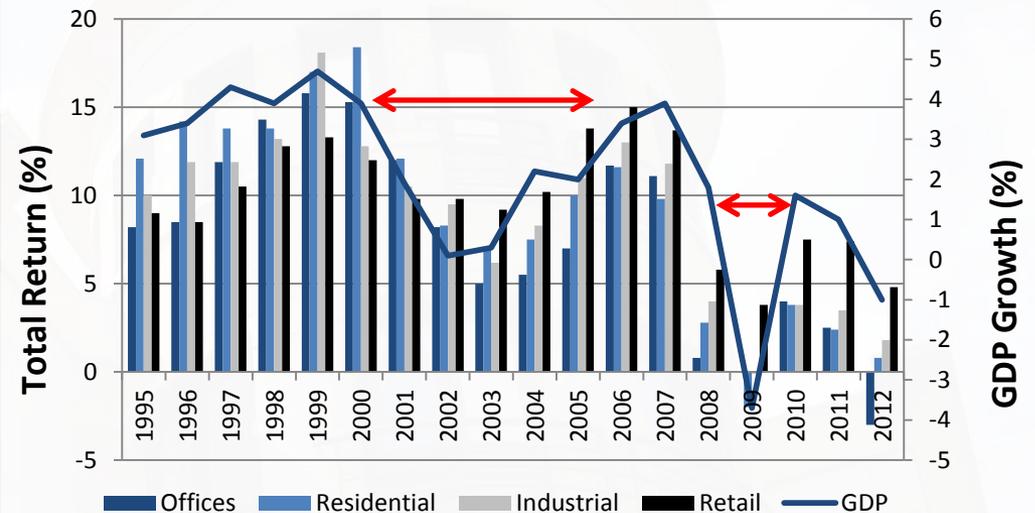
RESULTS

DISCUSSION

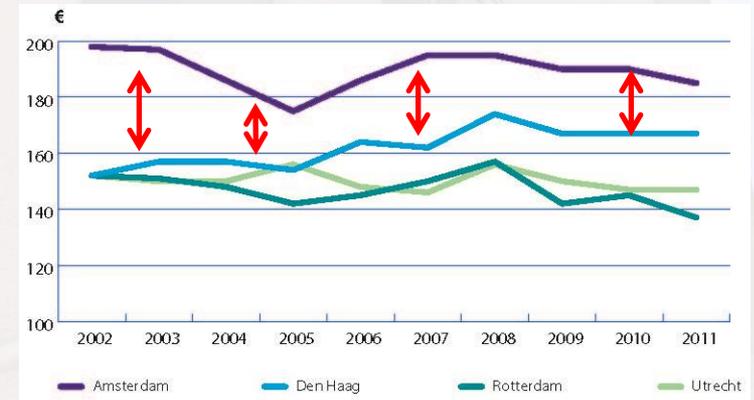
CONCLUSION

- The Dutch office market
 - Cyclical market
 - Regional markets
- Decision-making criteria
- Acquisition process
 - Type of investor
 - Type of market
 - Time horizon
 - Acceptable levels of risk
 - Practical behaviour (professionals)
 - Rational behaviour (literature)

Total real estate return



Regional market rents



Conclusion

Regional Market Features	Location Features	Building Features	
Vacancy rate Absorption rate	Urbanisation class Position towards Randstad Number of residents Location surrounding type Distance to public transport Distance to highway Distance to NS Number of parking places Parking norm	LFA/GFA ratio Average LFA per floor Mixed use of functions Façade material Shape of footprint Shape of façade Charisma of Entrance Climate control systems	Age Number of floors Free standing Energy label Spatial lay-out Type of use Flexibility



METHODOLOGY

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Portfolio NSI

177 office buildings

Geographically dispersed

A⁻ and B⁺ locations

892 m² - 22283 m²

0,8 € - 30 € million book value



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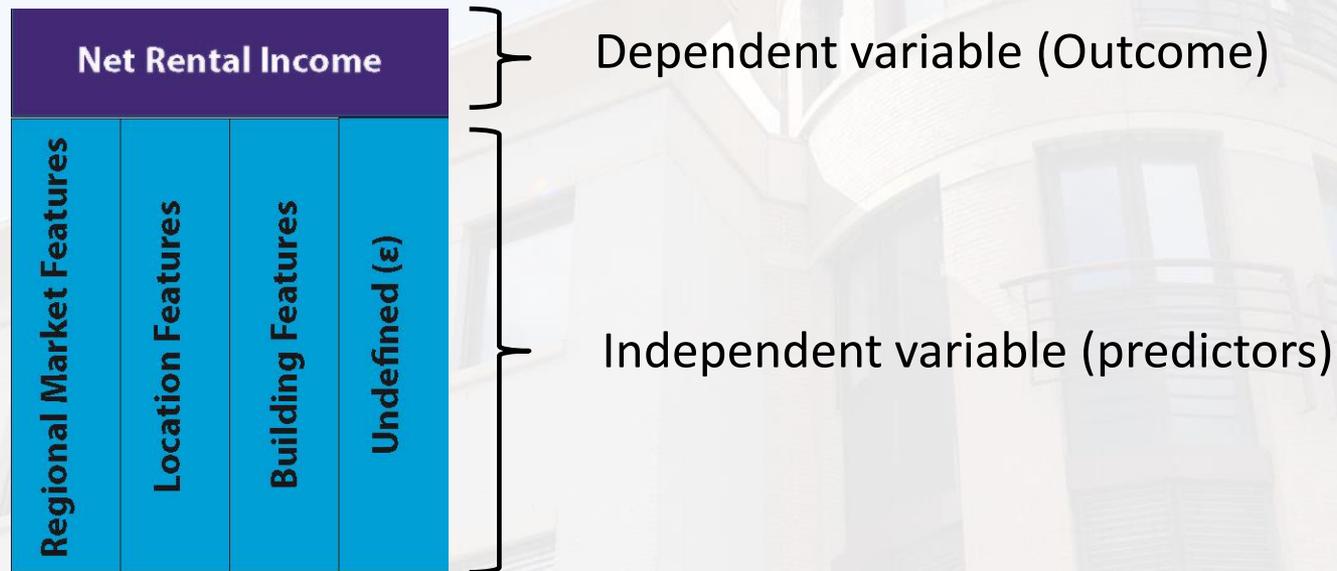
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Regression modelling



$$\text{Net Rental Income} = b_0 + b_1 \text{ Regional Market Features} + b_2 \text{ Location Features} + b_3 \text{ Building Features} + \varepsilon_i$$

Dependent variable (outcome value)

$$Y_i = (b_0 + b_1 X_i) + \varepsilon_i$$

Net Rental Income

Contractual Rental Income

Rent Free

Gross Rental Income

Costs of Bad Debts

Operating Expenses

Fixed costs

Insurance Expenses

Scheduled maintenance

Unscheduled maintenance

Marketing costs

New rental costs

Preparation for letting

Service charges

Management Fees

Net rental Income

Independent variable (predictors)

$$Y_i = (b_0 + b_1 X_i) + \varepsilon_i$$

Regional Market Features

- DTZ regional market indicators (i.e. absorption vs. supply)

Location Features

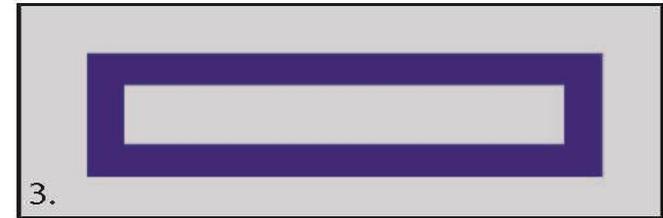
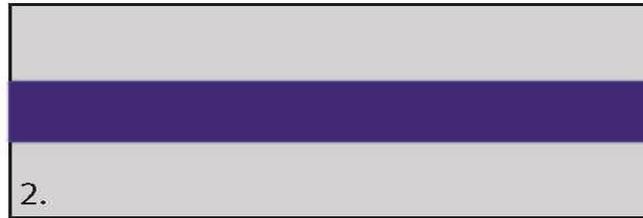
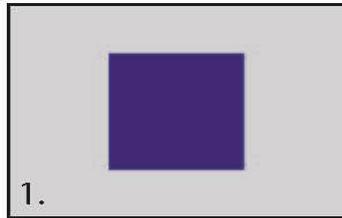
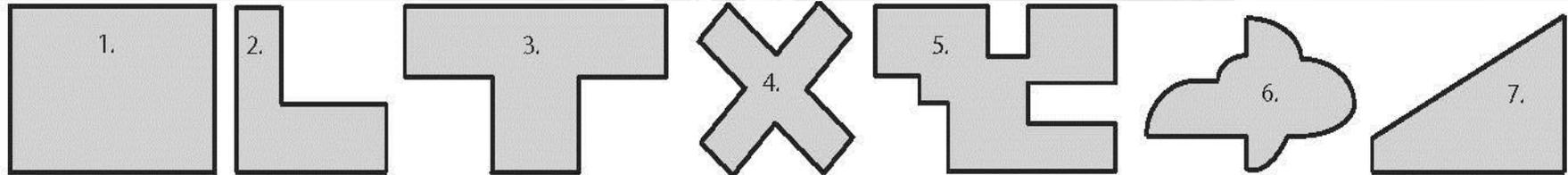
- Location within the Netherlands (i.e. urban vs. rural)
- Type of location (i.e. office park vs. residential area)
- Orientation towards the Randstad

Building features

- I.e. material, shape, use, attractiveness, flexibility

Building Features

$$Y_i = (b_0 + b_1 X_i) + \varepsilon_i$$



RESULTS

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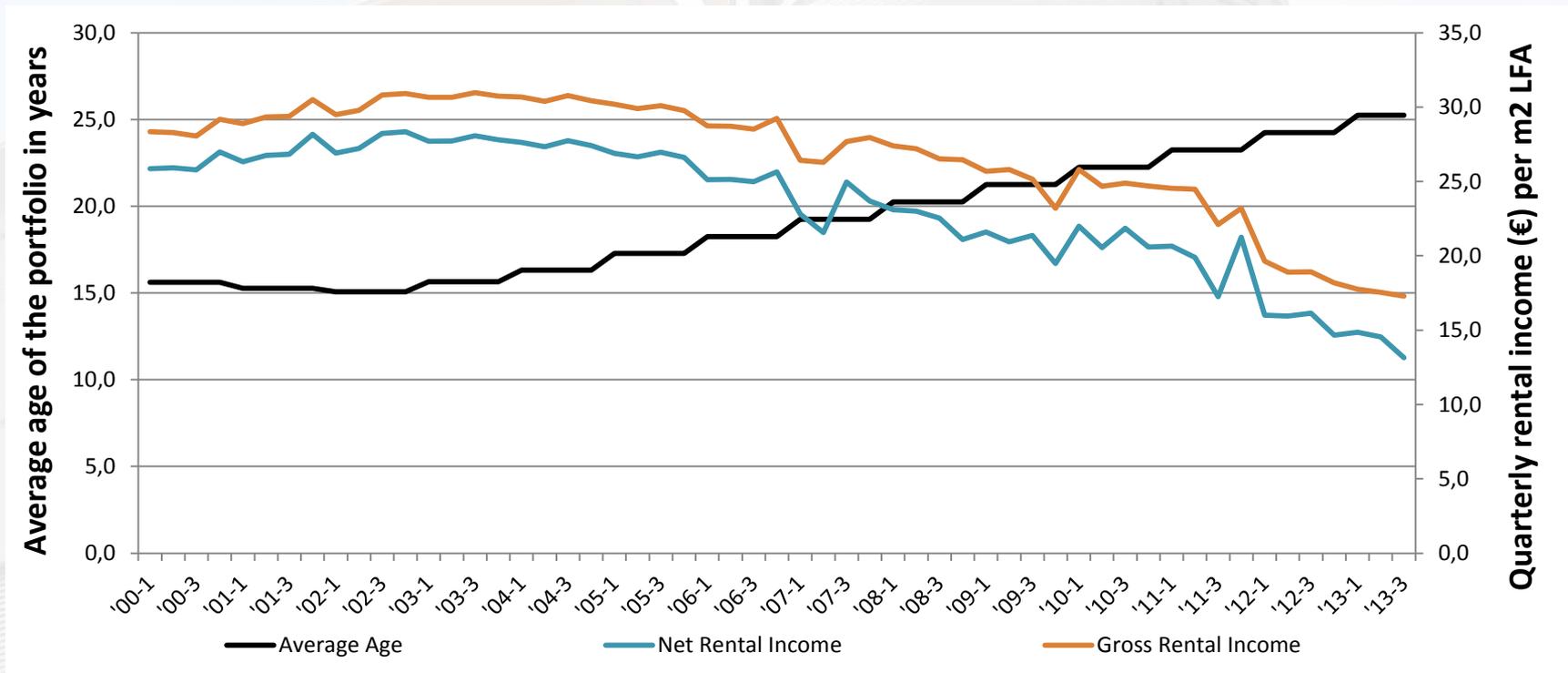
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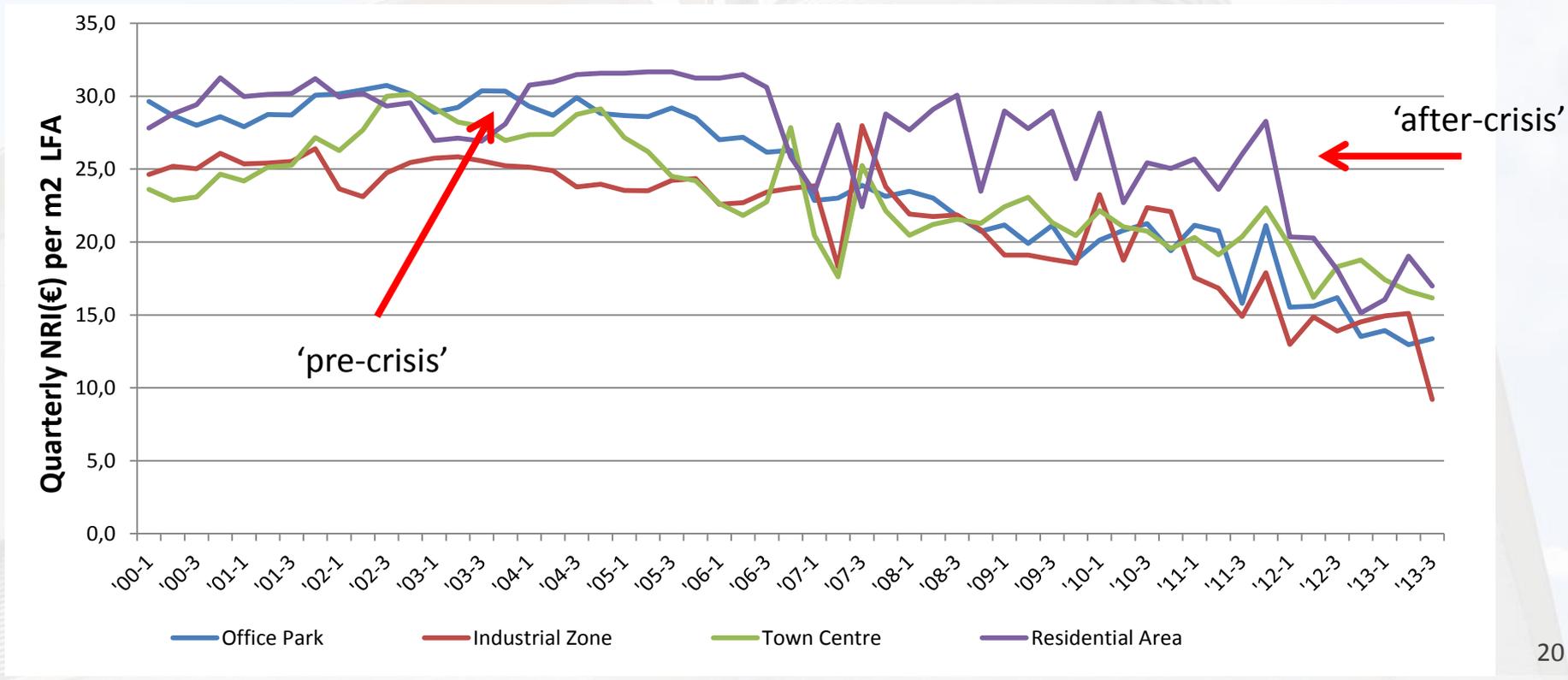
Descriptive statistics

Age



Descriptive statistics

Location surrounding



Descriptive statistics

Use



Descriptive statistics

- Outperformance '**less urbanised**' areas from 2008 onwards
- Offices in **residential areas** outperform **office parks** from 2008 onwards
- Positive relation with the attractiveness of the **entrance**
- Negative relation with the building's **age**
- No relation with the building's **material** and **shape**.
- **Complex** buildings show a constant underperformance
- **Medium adjustable** buildings outperform **highly adjustable** buildings

Statistical Model

		2000 - 2014	< 2008	> 2008
Factor Group	Source	Sig.	Sig.	Sig.
Location	Distance to public transport	,618	,138	,359
	Number of residents in place of location	,091	,188	,193
Building Features	Charisma entrance inside	,000	,000	,000
	Building type	,000	,034	,003
	Using typology	,001	,058	,000
	Adjustability of lay-out	,032	,090	,202
	Number of floors	,356	,093	,872
	Age	,001	,001	,938

Criterion: sig. < 0.050

Conclusion

If not on A+ location:

- Building features have a significant impact on the building's financial performance
-  Age =  Net Rental Income
-  Attractive entrance =  Net Rental Income
- High rise & Complex buildings =  Net Rental Income
- Single tenant" =  Net Rental Income
- Medium adjustable layout" =  Net Rental Income

It appears that location features are less important in after-crisis periods compared to pre-crisis periods. Whereas building features such as entrance, building typology and using typology remain at least equally important.

Conclusion

If not on A+ location:

↑ Age = ↓ Net Rental Income



↑ Attractive entrance = ↑ Net Rental Income



High rise & Complex buildings = ↓ Net Rental Income



DISCUSSION

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Implementation

Optimal office building:

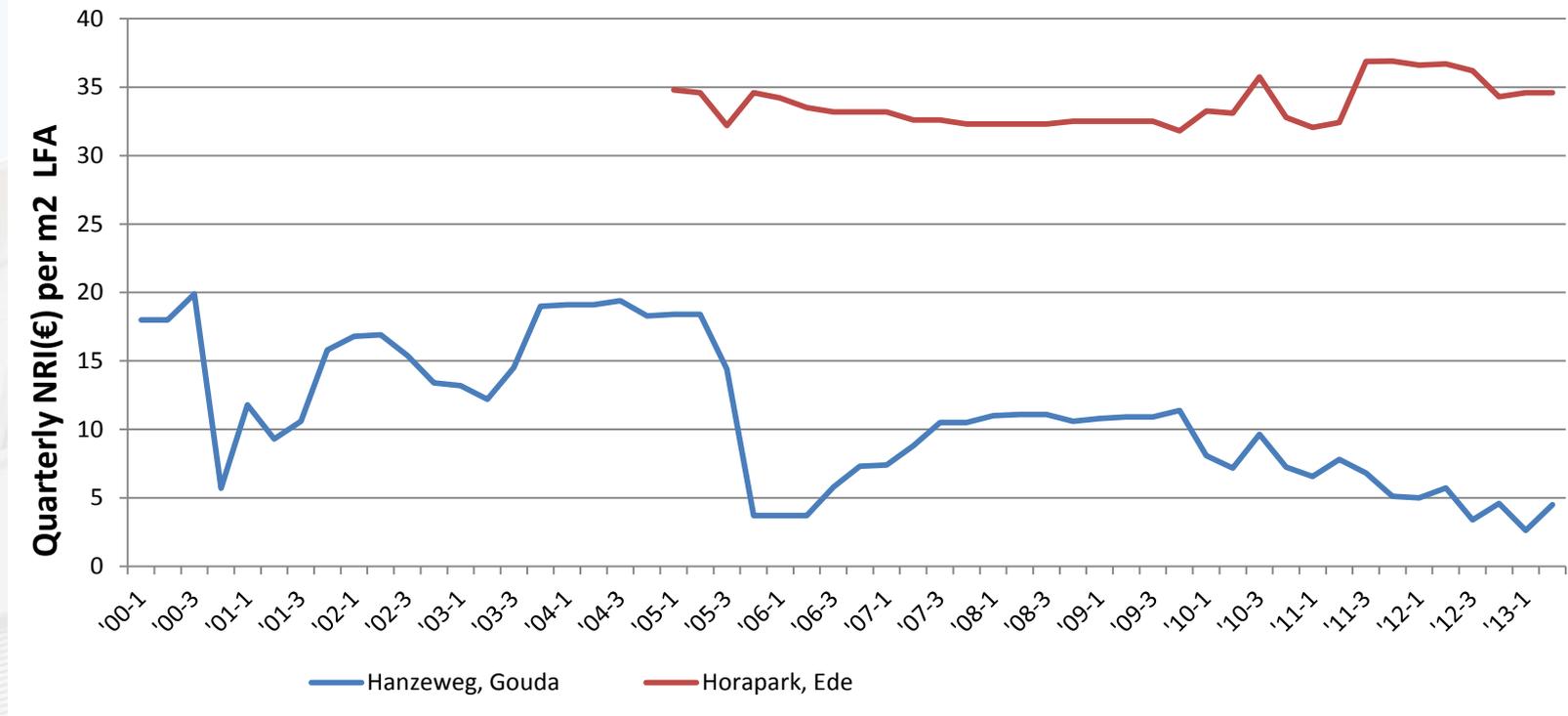
- Basic office typology
- Average size
- Attractive entrance
- Rather new building
- Medium flexible layout
- Single tenant
- Large city outside the Randstad

Implementation

Building characteristics	Horapark, Ede (selection criteria)	Hanzeweg, Gouda (opposite selection criteria)
		
Average Quarterly Net Rental Income (€/m ²)	31,1	10,9
Number of Residents	108.763	71.235
Relation towards the Randstad	Outside Randstad	Inner Randstad
Charisma of the entrance from inside	Attractive	Unattractive
Building typology	Basic	Complex
Type of use	Single tenant	Multi-tenant
Adjustability of layout	Medium adjustable	Very adjustable
Age (years, in 2013)	10	27

Implementation

Performance (NRI)



Restrictions and limitations

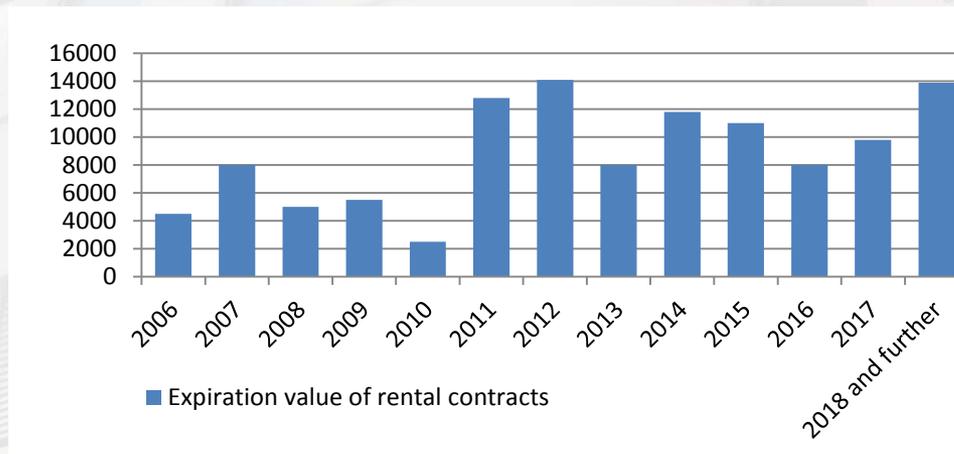
- No A⁺ locations
- Few directly comparable studies/literature
- Effects of sustainability
- Certain degree of subjectivity

Recommendations for NSI

- Location, building, quality
- Incorporate building features in the decision-making process
- Focus on larger cities outside the Randstad (+80.000 residents)
- Emphasis on building features in after-crisis periods
- Do not focus on high-rise or complex buildings

Recommendations for further research

- Repeat research every 3 to 5 years
 - Expiring rental contracts
 - Changing market circumstances
- Incorporate A⁺ locations in a similar study
- Extend the scope this research at building level features



CONCLUSION

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Conclusion

Pre-crisis and after-crisis building features are of such importance to an office building's **financial performance** that they should be considered as a **decision-making criterion** in the **acquisition strategy** of an institutional real estate investors.

- Physical and non-physical building features have a significant impact
- Different impact of building features and location features in pre-crisis and after-crisis periods.
- It influences the building's financial performance



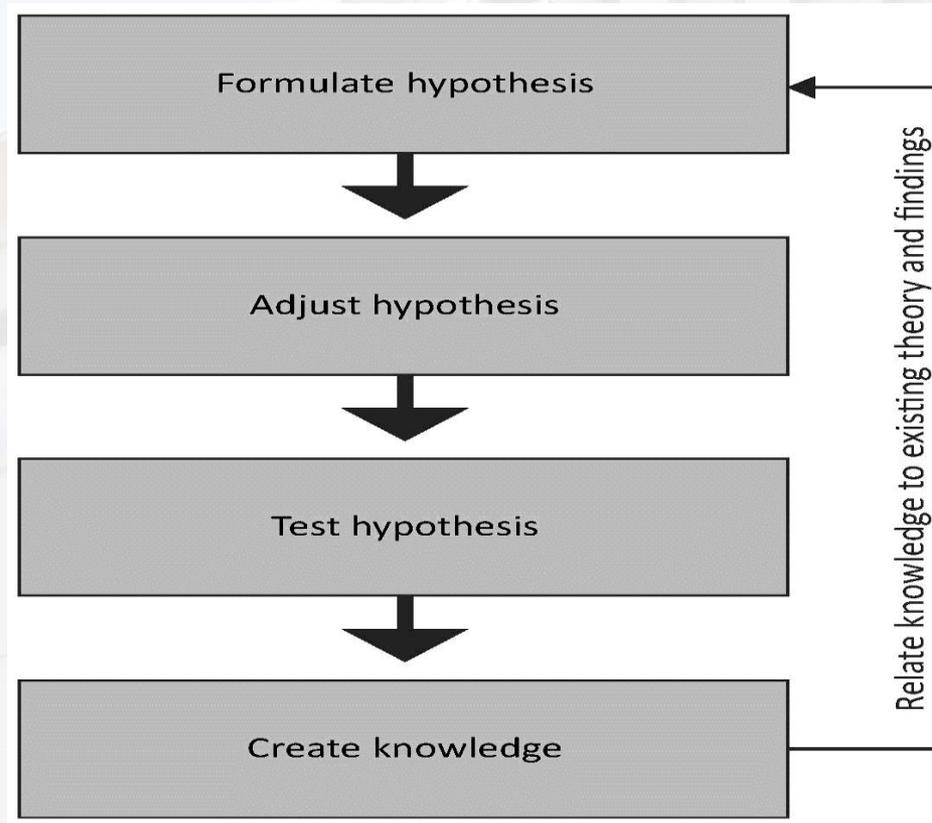
The impact of building features on the building's financial performance

"Do pre-crisis and after-crisis features decide?"



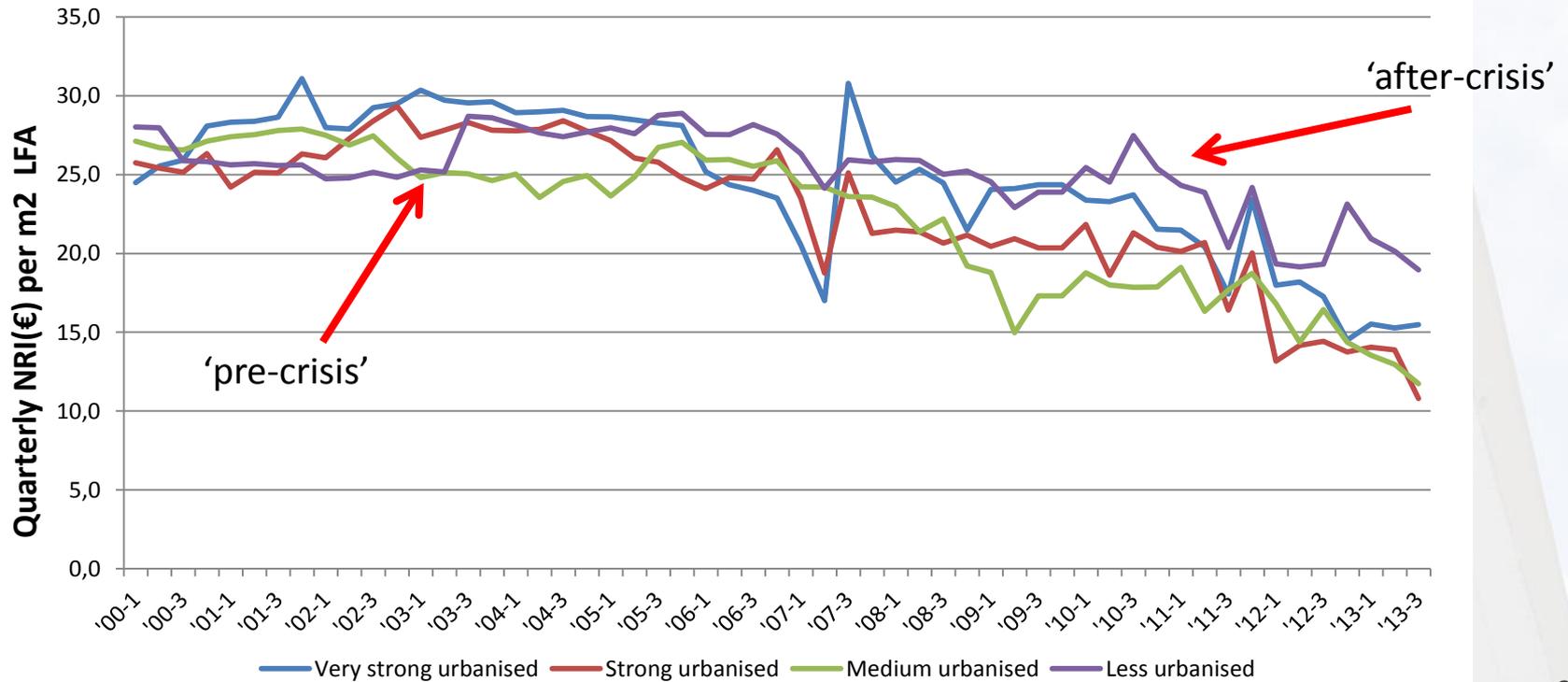
Additional Slides

Research Outline



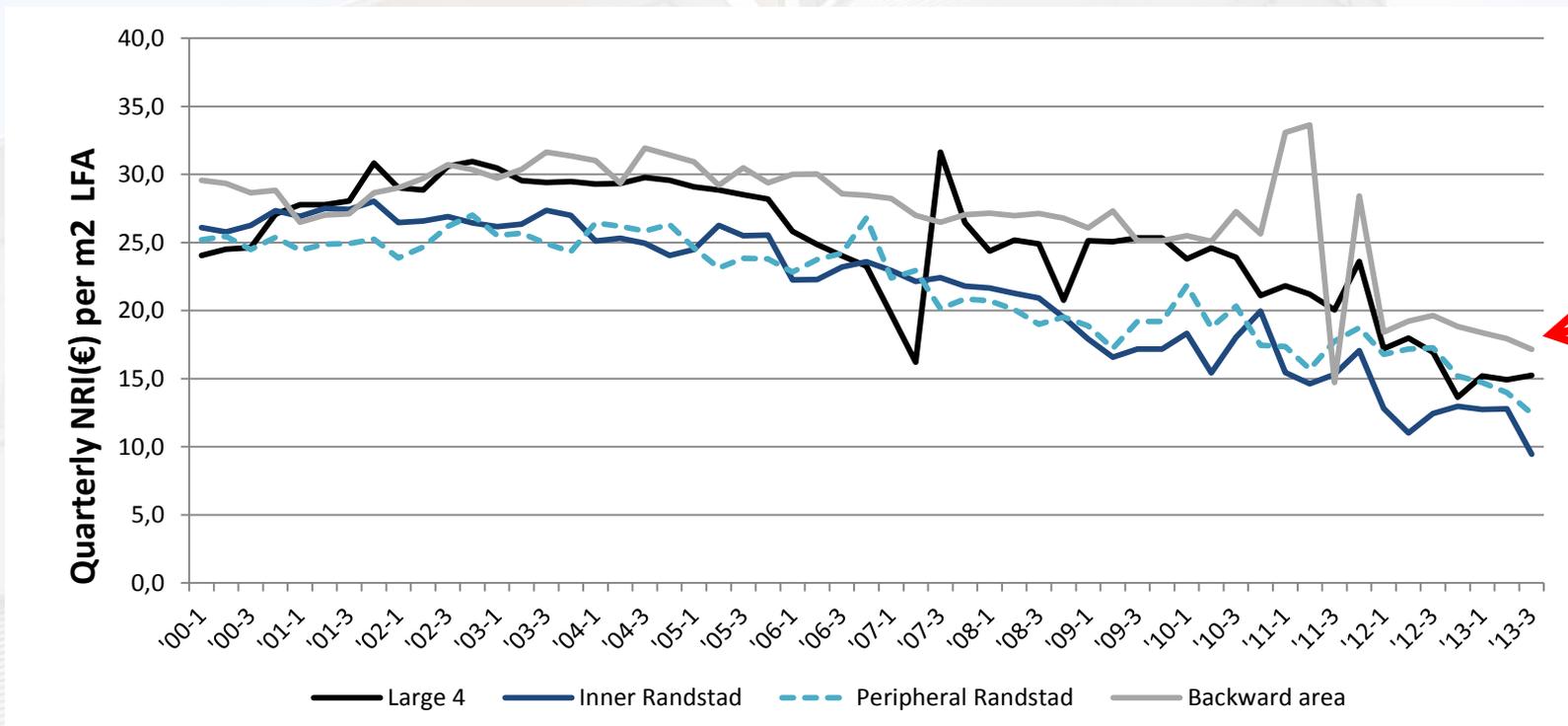
Descriptive statistics

Level of Urbanisation



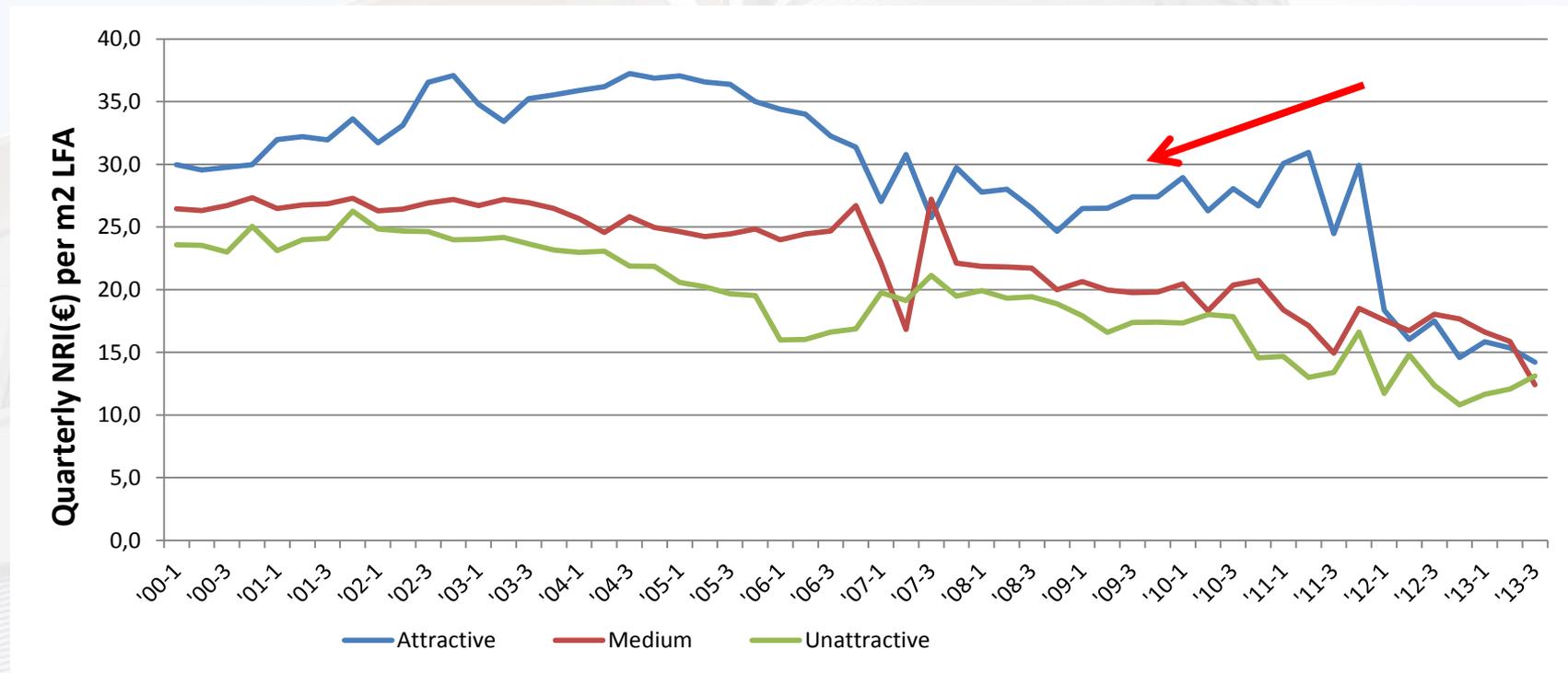
Descriptive statistics

Location



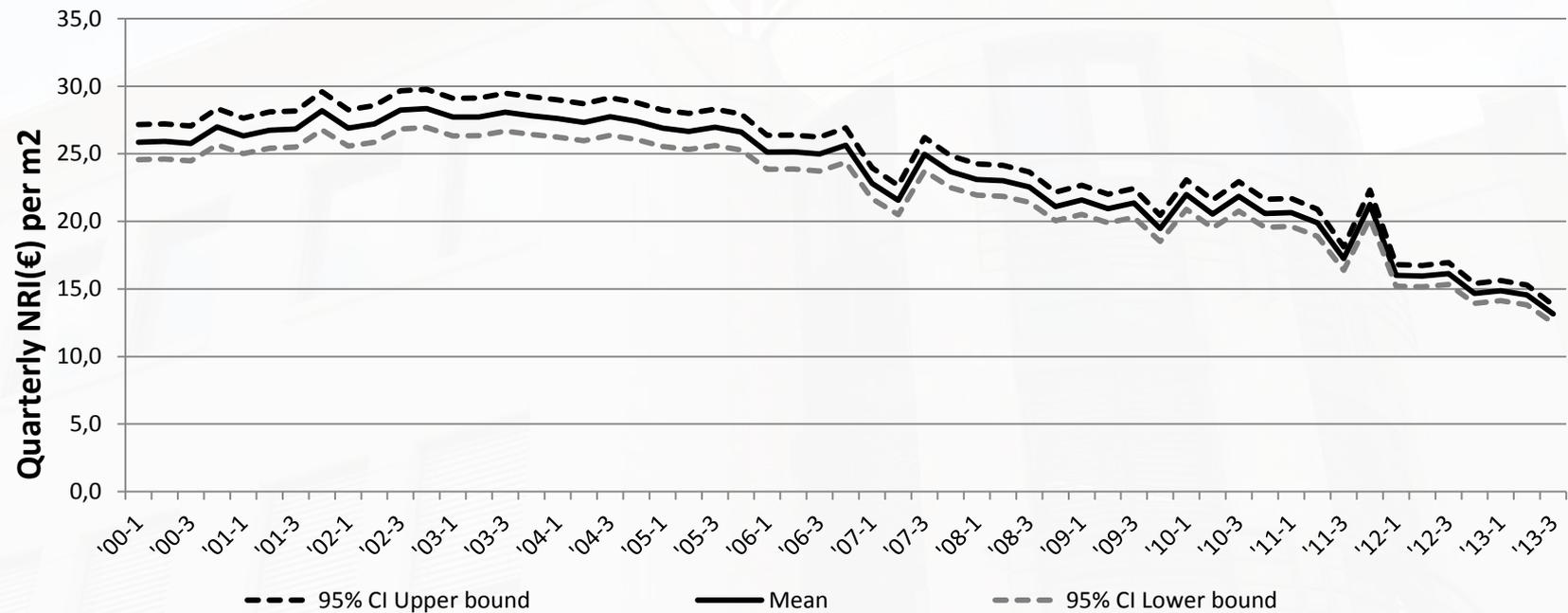
Descriptive statistics

Entrance inside



Descriptive statistics

Net Rental Income



Building Features

$$Y_i = (b_0 + b_1 X_i) + \varepsilon_i$$

	Attractive	Medium attractive	Unattractive
Outside			
Inside			

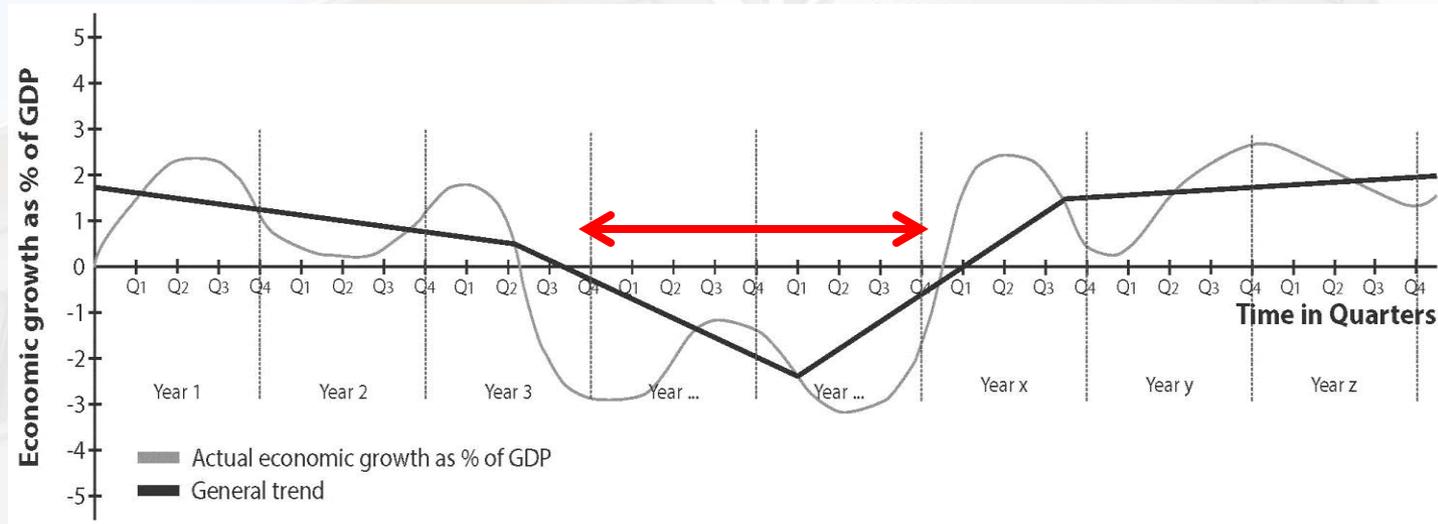
Relevance

"Within the current real estate market tenants have a strong bargaining position and can be more critical in assessing individual elements of the real estate objects."

"It has become more important to start your line of reasoning from the tenant's perspective in order to anticipate their wishes. Physical building aspects, from both the interior as well as exterior of the building, are expected to become a focus point from the tenant's perspective."

Cyclical market

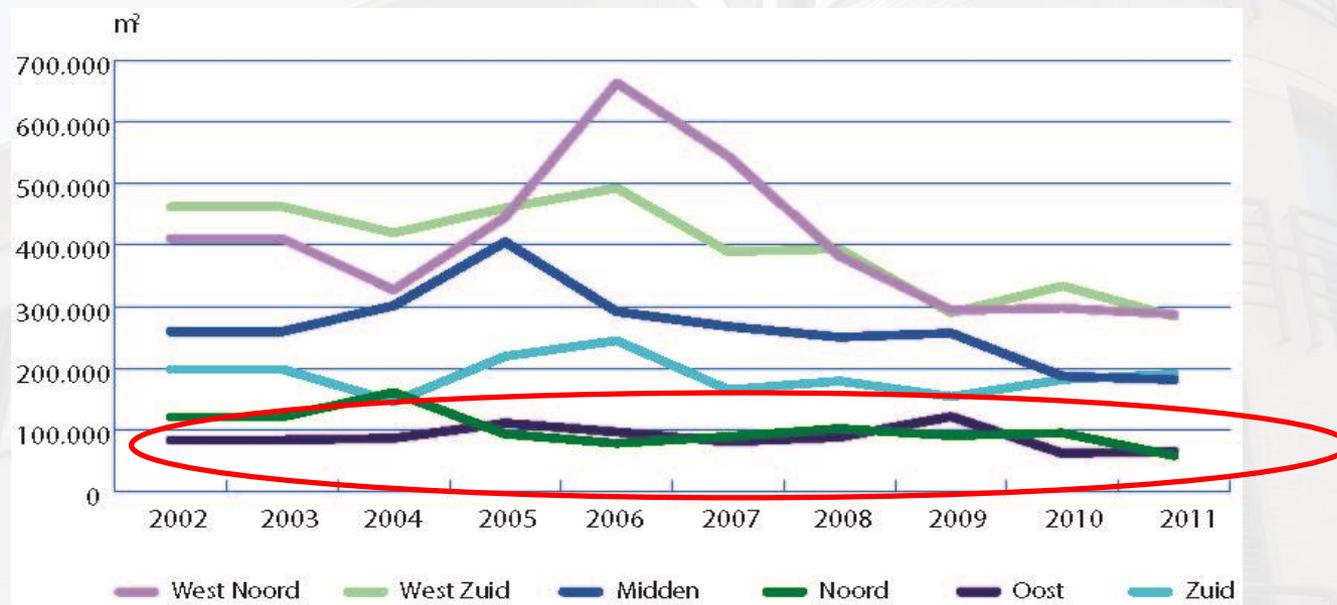
Economic indicators



- Consumer confidence
- Unemployment
- Gross Domestic Product

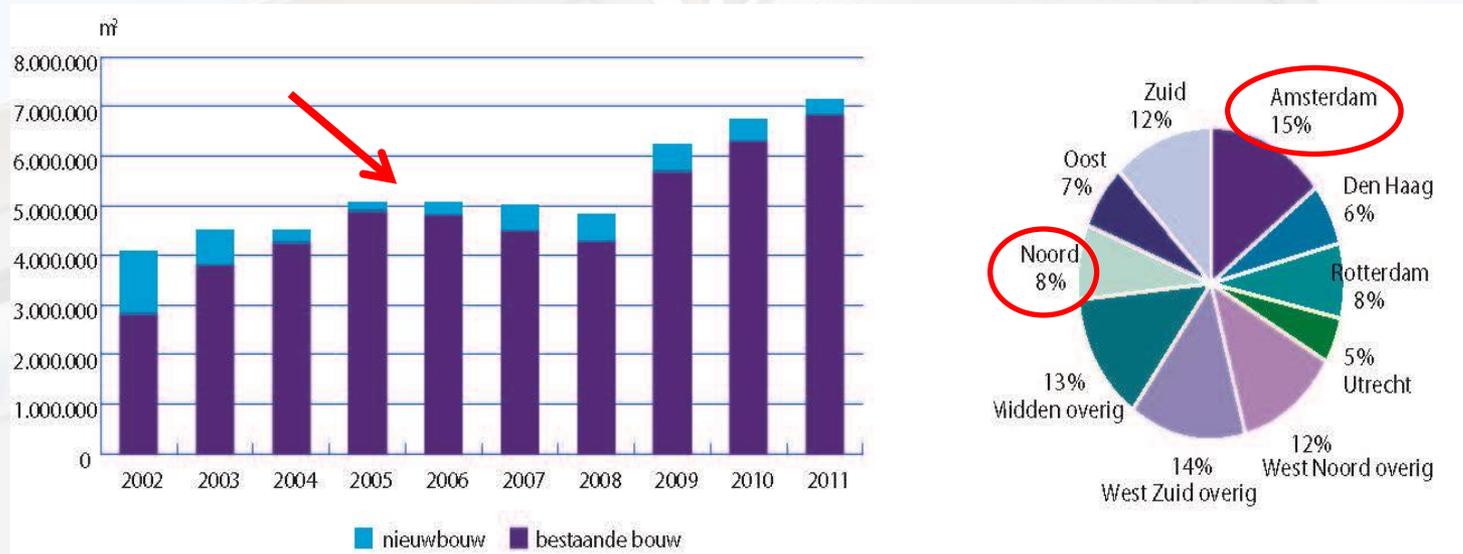
Regional markets

Regional Absorption of office space



Regional markets

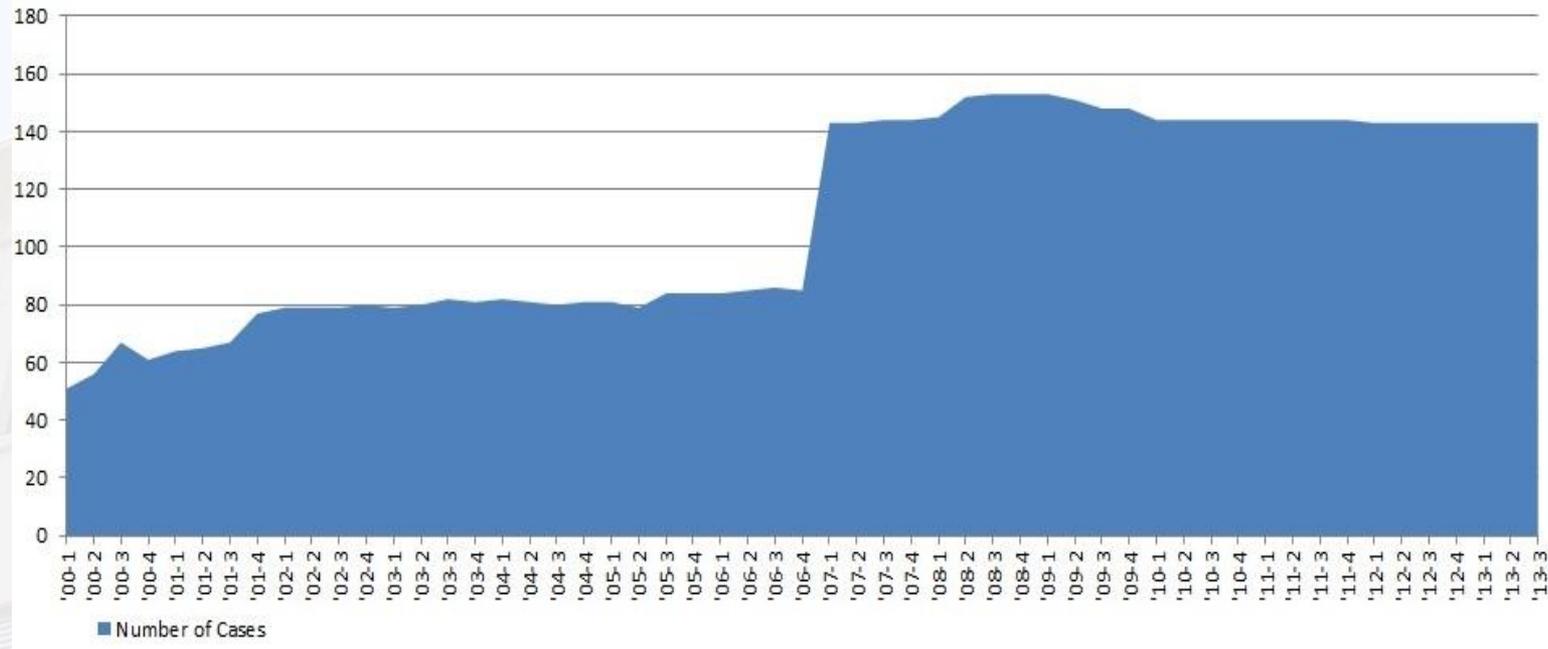
Regional supply of office space



Dependent variable (outcome value)

$$Y_i = (b_0 + b_1 X_i) + \varepsilon_i$$

Number of cases



Regression modelling

Basic principle:

$$Outcome_i = (model) + error_i$$

Simple regression:

$$Y_i = (b_0 + b_1 X_i) + \varepsilon_i$$

Multiple regression:

$$Y_i = (b_0 + b_1 X_{i1} + b_2 X_{i2} + \dots + b_n X_{ni}) + \varepsilon_i$$