

Corporate real estate performance
The added value measured

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STATEMENT OF AUTHENTICITY

I have read the University Regulations relating to plagiarism and certify that this project is all my own work and does not contain any unacknowledged work from any other sources.

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ABSTRACT

Corporate real estate (CRE) is the real estate property held by a non-real estate company to support core business operations. Though CRE may account for a significant portion of the firm's total assets, its importance is often neglected.

Given the change in accounting regulations (IFRS), CRE will attract more attention and new questions about CRE will be asked. The framework given in this report makes it possible to answer these questions.

The current CRE measurement systems and score cards do not relate to the metrics of corporate management.

Based on the shareholder value model a new model is constructed, to link CRE to the corporate score card and make the added value of CRE visible.

In comparison with the current models two mayor aspects are added:

- The macro value driver level
- The financing aspect at micro value driver level.

The advantages of this model over current model are:

- It provides a link to the key business drivers
- It provides a single performance measure.
- It expresses the added value in the language of corporate management.

By doing this, it becomes clear what and how CRE contributes to the core value of the organisation and which choices need to be made.

With the newly constructed model the impact of owning CRE to the shareholder value is measured through the value drivers. The analysis shows that the impact is limited.

Furthermore the research showed CRE is on average about 15% of the total firms assets. This differs significantly from the impression of previous research, which suggests that CRE is about 30% of the of the total firms assets.

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PREFACE; AN AUTHORS PERSONAL NOTE

I undertook my MBA to get a more profound understanding of the business perspective. The objective was to get new perspectives in general, and on the real estate business specifically.

This research report is written in order to complete my MBA at the Bradford/TiasNimbas Business school. But even more its objective is to apply the learned skills and competences in practice and to gain a better knowledge and understanding of the corporate point of view towards real estate. A secondary objective is to develop myself further in the use of financial analysis, to develop and support my business views.

This report would never have been possible without the help of others. I am grateful to everyone involved. I would like to thank my supervisor: Prof. dr. Dirk Brounen for his critical, constructive feedback, his quick responses, smart suggestions and not the least for his enthusiasm. I would like to express my appreciation to the TiasNimbas staff, especially Eileen Hendrie and Ting Jiang, for their professional support and their flexibility. Special gratitude also goes out to my family, Caroline especially, for their support and patience during this period.

1 INTRODUCTION

This section introduces the important notions of this report: corporate real estate (CRE), corporate real estate management (CREM) and International Financial Reporting Standards (IFRS). In addition it briefly shows their (financial) importance to corporations and their role in corporate management. Its objective is to put the research, as described in this report, in its context.

1.1 Corporate Real Estate Management

Corporate real estate (CRE) is a term, used to describe the real estate assets held by a non-real estate company to support core business operations.

Changes in the competitive, economic, financial and regulatory conditions ignite changes in corporate real estate decision making.

The influence of corporate real estate on the overall business was pointed out in the beginning of 1980's in the USA. Zeckhauser and Silverman (1983) were among the first researchers who brought out the substantial economical influence real estate assets might have on companies. Their study clearly indicated that at least the American corporate managers were regularly neglecting their firm's real estate assets. They suggested that by neglecting their corporate real estate assets (which were at that time from 25% to 40% of the total assets of the major American firms at market value), the corporations were left open to takeovers, lost profits and showed lower stock price performances. This, of course, meant that many corporations were still not fully using the value creation opportunities, associated with their real estate holdings.

In 2010 Omar and Heywood argued that corporate real estate is the second or third largest operating cost of a business or public authority and may represent as much as 50% of the total assets on a balance sheet. They also conclude that, despite being a significant corporate cost and value, corporate real estate management (CREM) still lacks credibility in the organisation.

As these two examples above indicate, corporate real estate often accounts for a significant portion of the firm's total assets and / or working capital and as a result is important to the performances of the firm, especially from a financial perspective. This is underlined by a rough analysis of the Property Plant and Equipment (PPE) of which corporate real estate is a significant part, in relation to the total assets of companies from the S&P Global 1200 (see figure 1.1).

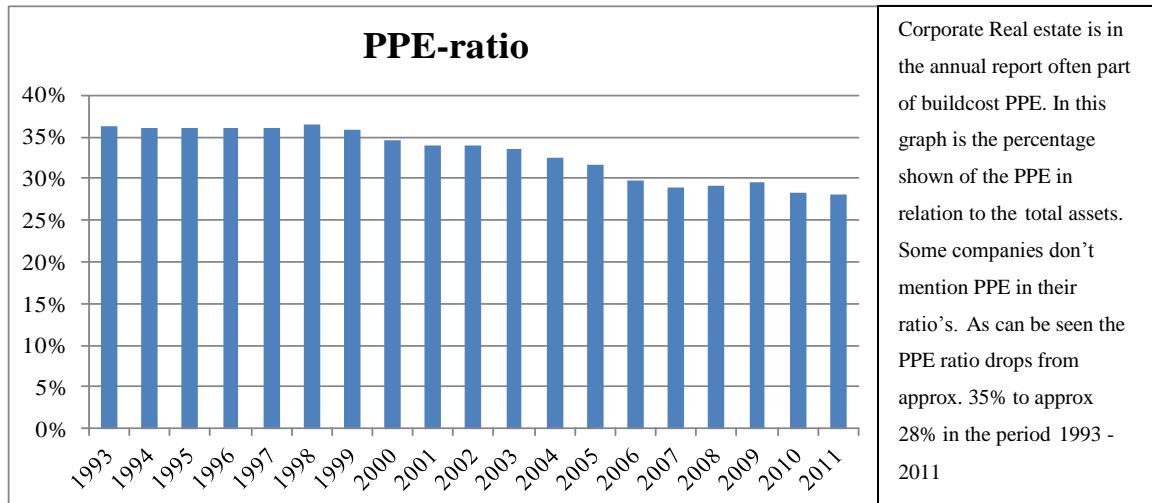


Figure 1.1: Overview of build cost, property, plant and equipment (PPE) over the period 2011-1993 for the S&P 1200 in relation to total assets

Given the timeframe (1983-2010) and the similar conclusion of Zeckenhauser and Omar, one may conclude that the importance of CREM in general was, and still is, neglected by corporate managers.

The neglect of CREM by corporate managers may be the result of one or more of the following reasons:

- **Outsourcing:** The prime focus is on outsourcing services and reducing the impact of CRE on the corporate balance sheet (Krumm 1999). This means that improvements on CRE showed less and less on the corporate balance sheet, which is the usual scorecard used by top management.
- **A lack of adequate information:** Roulac and Manning (1999) cited that the lack of adequate information results in difficulty of making suitable CRE decisions. Lindholm (2008) gives the following reasons for 'the lack of adequate' information: first of all, it is not easy to create unifying models for the CREM contribution, because the demands and needs for real estate management

of organisations may show large differences. Secondly, how to measure functions and processes where outcomes are mostly intangible. Besides that, most of the existing measures are more like indicators for operational tasks, not strategic performance measures, which could help the organisation to identify the CRE contribution to the corporate wealth. Krumm (2001) argues that, because CRE might not be regarded by many corporations as being a critical resource, information regarding financial and technical details are often concealed in clouds.

- **Real estate experience:** Few corporate officers come from the real estate field or have any experience with strategic property. Several literatures pointed out that the lack of this background and/or experience would make the property decision making process more difficult for corporate managers. (Lindholm and Leväinen, 2006)
- **Delayed show of results:** By nature of real estate, the results of good or bad CREM are ‘delayed’ and as a result not considered as ‘first interest’ by corporate managers (based on Veale 1989).

One may conclude that, as the trend of the last years, the reduced impact of CRE on the corporate balance sheet, in combination with the lack of adequate information makes information on CRE in the Annual Reports and Accounts ambiguous.

This, in combination with delayed show of results and lack of experience concerning the real estate business among corporate officers, results in difficulty of making suitable CRE decisions and most decisions will be non reasoned in relation to the corporate strategy and vision and to the effect on the annual accounts.

In figure 1.2 position 1 gives the current status of strategic decisions concerning real estate. On the y-axis the objective of a decision is given. As CRE affects many aspects of a corporation, the objective of CRE decision-making can be expressed in many performance measures. Given the many performance measures it is not easy to make a reasoned decision on CRE. We consider decision-making to be reasoned when it is in line with the corporate strategy and vision and based on facts instead of on ‘opinions’.

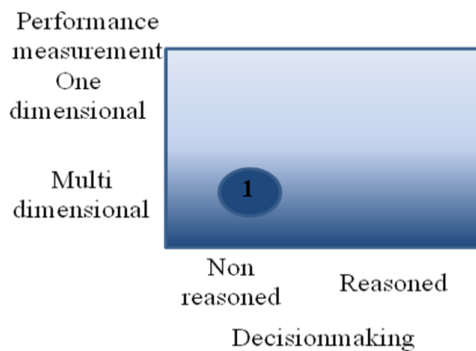


Figure 1.2: The current status of strategic decisions concerning CRE

1.2 IFRS lease accounting; a change in accounting regulations

With the globalisation of international financial markets, the idea of adopting a common language for financial reporting to develop international comparability, has become widespread. Of all the possible ways of implementing a single financial reporting language, adoption of **International Financial Reporting Standards (IFRS)** as an accounting standard was the approach selected by Europe and many other countries. More than 100 countries have agreed to require or allow adoption of IFRS, or have established timelines for the adoption of IFRS (Zalm; 2008).

According CRE, all (long term) obligations must be included in a company's balance sheet. For CRE the mayor change is that the distinction between operating leases and capital leases will be eliminated. All leases, including existing arrangements, will go on balance sheet and rent will no longer be an operating expense. Balance sheets will swell and companies will see their debt loads increase massively.

Those in favour of implementing IFRS generally put two arguments forward:

The first argument is the 'transparency' argument: IFRS reduces the amount of reporting discretion relative to many local generally accepted accounting principles (GAAP) and, in particular, pushes firms to improve their financial reporting. Consistent with this argument, Ewert and Wagenhofer (2005) show that tightening the accounting standards can reduce the level of earnings management and improve reporting quality. The second argument is the "comparability argument", founded on the assumption that IFRS reporting makes it cheaper for investors to compare firms across markets and countries. Thus, even if the quality of corporate reporting per se does not improve, it is

possible that financial information will become more useful to investors. For instance, a common set of accounting standards could help investors to differentiate between lower and higher quality firms, which in turn could reduce information asymmetries among investors and/or lower estimation risk.

Under IFRS a new set of rules, *lease accounting*, will take effect from 2013 onwards.

1.3 The effect of IFRS to CREM

Through research, Canon and Fenbert (2011) found evidence to support that sensitivity to financial statement presentation may be an additional, possibly secondary variable in decision making. Companies that are required to report in accordance with US GAAP (or likewise) and are scrutinized by analysts and investors, tend to be sensitive to how their financial statements are perceived. Often these companies must maintain certain capital ratios to remain in compliance with loan covenants and other regulations.

The impact of IFRS for a particular firm would be largely based on two main factors: the size of a company's operating lease portfolio, relative to its balance sheet and a company's sensitivity to financial statement presentation.

The higher the company's operating lease portfolio is relative to its balance sheet and the more sensitive a company is to its financial statement presentation, the more likely it is to change its behaviour to mitigate the effects of the lease accounting.

Canon and Fenbert conclude that the proposed changes in lease accounting will not have an industry-wide effect on corporate real estate strategy. However, their research suggests that accounting plays a part in CRE decisions and for some companies the proposed changes to lease accounting *may* be a catalyst for changing CREM.

The proposed changes will force companies to critically examine their real estate portfolios in order to comply with the new standards. It is evident that the basis on which real estate decisions are made, will become more transparent and by that effect, companies may make different decisions than they otherwise would have.

In figure 1.3 Rhem (McKinsey) estimates the changes in debt figures due to IFRS. As can be seen in figure 1.3, they calculated the debt under the current regulations (unadjusted for lease debt) and the debt under IFRS (adjusted for lease debt). The conclusion is that it's impact is fairly concentrated to three industries, Non-food retailing, Transportation and Food and staples retailing. In other sectors the impact is negligible (<10%) compared with the total market capitalization.

Estimates for US companies with >\$100 million in market capitalization

	■ Top 3 by change after adjustment	Distribution of lease debt, % (100% = \$1.1 trillion)	Average ratio of debt to total value, ¹ %		
			Unadjusted for lease debt	Adjusted for lease debt	Change after adjustment, percentage points
Nonfood retailing	■ 18	18	20	40	■ 20
Transportation	■ 10	10	39	50	■ 11
Energy	■ 9	9	25	29	■ 4
Food and staples retailing	■ 8	8	22	34	■ 12
Capital goods	■ 7	7	46	48	■ 2
Software and services	■ 7	7	12	17	■ 5
Telecommunication services	■ 7	7	50	55	■ 5
Consumer services	■ 5	5	33	40	■ 7
Health care equipment and services	■ 5	5	25	31	■ 5
Media	■ 5	5	44	48	■ 4
Technology hardware and equipment	■ 4	4	10	14	■ 4
Consumer durables and apparel	■ 3	3	28	36	■ 8
Food, beverage, and tobacco	■ 3	3	22	24	■ 2
Materials	■ 3	3	33	36	■ 3
Commercial and professional services	■ 2	2	43	48	■ 5
Pharmaceuticals, biotechnology, and life sciences	■ 2	2	19	21	■ 2
Automobiles and components	■ 1	1	72	73	■ 1
Household and personal products	■ 1	1	20	22	■ 2
Semiconductors and semiconductor equipment	■ 1	1	10	12	■ 2
Utilities	■ <1	<1	-59	-59	■ <1

¹Includes financial debt, minority interest, preferred stock, and net pension and other post-employment-benefits liabilities at book value.

Figure 1.3: Estimates of the changes in debt figures due to IFRS (Source: Rhem)

Based on academic and market research, as discussed above, one may conclude that IFRS will not have an industry-wide effect on CRE strategy.

1.4 Conclusions

One may conclude that it is a trend of the last years to reduce the impact of CRE on the corporate balance sheet. In combination with the lack of adequate information, this makes information on CRE in the Annual reports more ambiguous.

This, in combination with delayed show of results and lack of experience concerning real estate among corporate officers results in difficulty of making suitable CRE decisions and as a result most decisions will be timely in relation to the corporate strategy.

Furthermore one may conclude, based on academic and market research, that IFRS it self will not have an industry-wide effect on corporate real estate strategy.

But the broad academic and market discussion on IFRS lease accounting, draws the attention to the influence of accounting and, by extension, corporate financial aspects on corporate real estate strategy. And vice versa: the influence of corporate real estate on (the financial aspects of) the corporate strategy.

This will make the corporate managers more aware of impact of CRE on the corporate strategy. A good understanding of its resources is a critical ingredient for a successful strategy. *As a result , CRE will attract more attention and new questions about CRE and its strategy will be asked.*

2 RESEARCH SETUP

In this chapter the research setup of this report will be discussed, including the used methodology and the reporting structure. It defines and explains the research question, its sub-questions and its relevance. It explains the research approach and gives the structure of this report.

2.1 Research question

An important research question, discussed in this report is:

“What (kind of) model and by extension measures may be needed to better quantify the direct and indirect effects the corporate real estate has on corporate performance?”

This question is defined and further explained in the following section.

Business is about creating value. The value of a firm is, primarily, determined by the profits it creates over its lifetime. As most businesses have the goal of maximisation of the value, some tools of financial analysis can be used to assess their profitability.

In 1954 Peter Drucker introduced in his book *The practice of management*, ‘the concept of management by objectives’ (MBO) The basic idea is to translate corporate strategy into a series of measurable objectives which can cascade down the organisation. This allows managers to track and incentivize performance, while employees know what is expected of them and can reap the rewards if they meet their targets.

As stated by Grant (2010): When assessing the profitability one can use either forward looking performance or backward looking performance measures. Given the volatility of stock market values, evaluation of the firm’s performance focuses on accounting based performance.

Strategic corporate decisions, like decisions on CRE, are made to improve the firms performance. In order to make the right decisions the performance needs to be analyzed.

In order to analyze performance relevant appropriate, transparent information and performance measures are required.

CRE often accounts for a significant portion of the firm's total assets and/or working capital and as a result is important to the performances of the firm, especially in a financial perspective.

Although several studies related to CREM have addressed the topic of managing real estate resources, little research and literature is available on the benefits of CREM from the core business perspective

The lack of unifying corporate real estate models and by extension measures means that the contribution of real estate to the organisation and the possibilities that exist for adding value are often not recognized nor properly considered.

Given the arguments above the main research question is: What (kind of) model and by extension measures may be needed to better quantify the direct and indirect effects the corporate real estate has on corporate performance?

Given the fact that all the organisations and their demands and needs for real estate management are unique, the objective is to offer a set of *relevant* measures, from which the organisations can choose, depending on their specific business strategy.

This will identify what data the organisations need to collect, to analyze the contribution of CREM to the organisations and help CREM gain better recognition and reward for the value the real estate adds to the organisations. This will enable them to make suitable decisions.

In order to answer the main question the following sub-questions are asked:

- What are the performance measures, currently used for CRE?
- What kind of performance measures could help the organisation to identify the contribution of CRE to the shareholder value.?

The objectives of this research are:

- Insight in relevance of performance measures,

- Update of (theoretical) performance measures for CRE,
- Provide relevant performance measures for CRE.

Figure 2.1 gives the overall objective of this research: to provide a better performance measure in order to make well reasoned strategic decisions on corporate real estate which contribute to the corporate strategy.

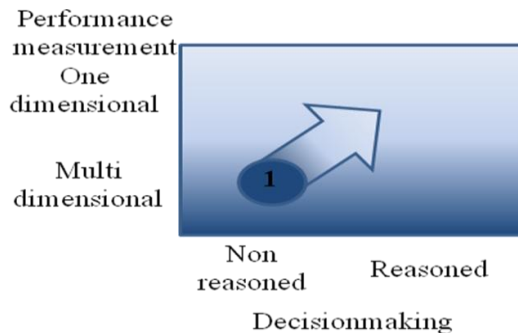


Figure 2.1 Schematic view of research objective

The underlying reasoning for this objective is as follows: Better use of information can lead to better decisions and performance, the ability to effectively use the insights of data is a competitive capability. However many corporations are ‘drowning in data, whilst thirsty for information’. In order to overcome this problem a clear one dimensional performance measure to inform corporate management is necessary. This needs to be reflected in the performance measurement system.

2.2 Research approach and methodology

As the purpose of this study is to demonstrate that the potential contribution and success of CRE to the core business of a corporation. First of all, it is not easy to create a general model of the contribution and success of CRE, because all corporations and their demands and needs for CRE are unique. Secondly, how to measure contribution and success where outcomes are mostly strategic performance measures, intangible and not comparable.

In order to accomplish the objectives this research is divided in the three phases, as can be seen in figure 2.2:

Phase 1: Finding a relevant problem.

Phase 2: Create a novel model for identifying and measuring the success of CRE.

Phase 3: Test the novel model.

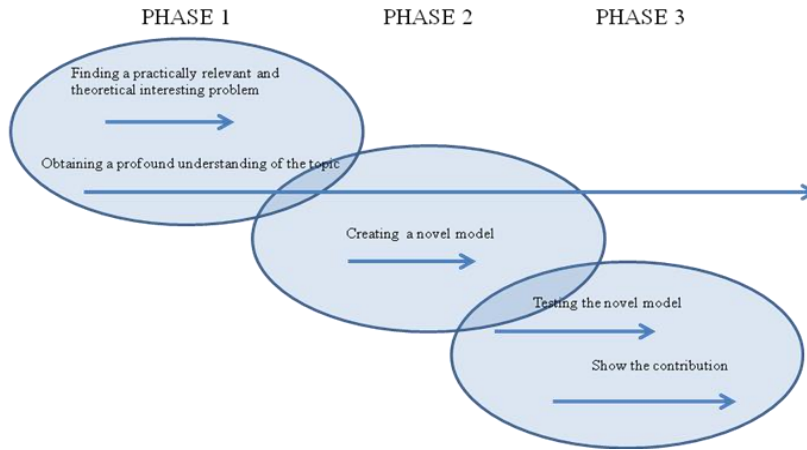


Figure 2.2 The different phases of the research process

As phase 3 differs from phase 1& 2 different from a research perspective, a different kind of research approach and methodology is chosen for phase 3. This in order to conduct a sound research.

Phase 1&2

In research terms the purpose of this phase is to increase the general knowledge on the contribution of CRE for the core business of an occupier organisation and to deepen the understanding of issues related to the CRE performance.

In order to understand CREM (a relatively new sub-discipline) and its options to add value to the core business, the research has to rely on knowledge from other disciplines. Abductive logic concerns finding the best explanation of a observation on the basis of incomplete data. (based on Manning and Roulac, 2001). An abductive research approach is applied to several comparable related studies, like Krumm (1999), Lindholm (2008) Stadlhofer(2010) and Liang (2011) and is appropriate for these phases.

Phase 3

In this phase first the association of the CRE and the creation of shareholdervalue is empirically investigated. The objective is to demonstrate the benefits of CREM for core

business in economical figures. The applicability of the model is tested through a interview.

A two-step approach is used in this phase. First CRE ownership is quantified and analyzed, secondly the relation between CRE and corporate performance, expressed by basic valuation parameters (the so called value drivers, see section 5.1) is analyzed. As method of assessing the performance of corporations, financial ratio analysis is used.

For this study we gathered balance sheet information for the companies, listed in the S&P Global 1200, through Thompson One Banker. The S&P Global 1200 is a global index, which captures approximately 70% of the world's capital markets. It is a composite of 31 local markets from seven headline indices, many of which are accepted leaders in their regions.

2.3 Scope & Limitations

The main focus of this study is on real estate strategic decisions, not so much on operational day to day tasks.

Because in phase 3 the balance sheet information for the companies, listed in the S&P Global 1200 is used, the results of the testing of the model only apply to so called 'blue chips corporations'.

Apart from the scope, this research has the following limitations, due to the availability of data:

- For most of the value drivers a single ratio is used. The more ratio's there are the better the perspective is.
- The number of companies in the following categories is rather limited.
 - Mining
 - Construction
 - Retail Trade
 - Services

This means that one has to be very careful when interpreting the results for these sectors.

As some industrial sectors (agriculture, wholesale trade and public administration) contain a very limited number of companies, they are not included in the research.

2.4 Structure of the report

Figure 2.3 gives the set-up of the report

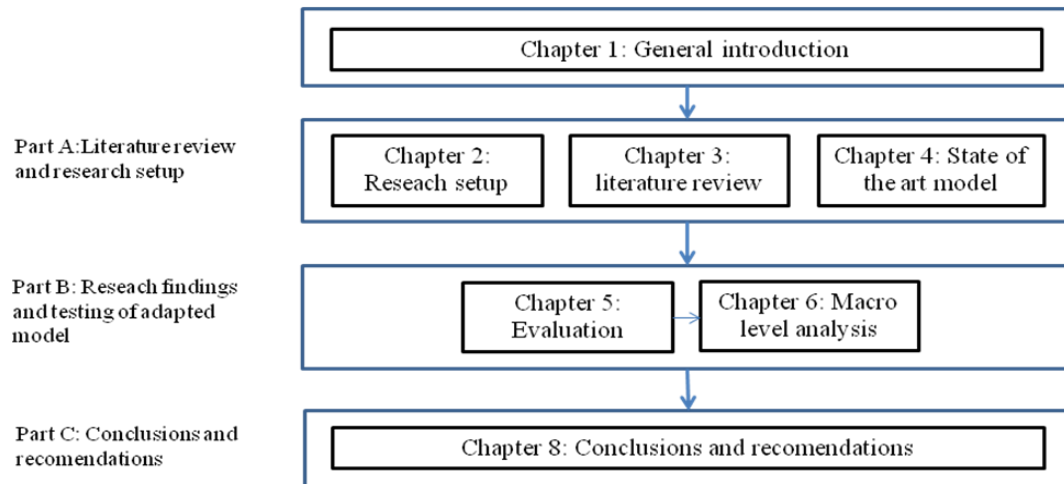


Figure 2.3 The process organisation and set up of the report

Chapter 1 introduces the important notions of this report: corporate real estate (CRE), corporate real estate management (CREM) and International Financial Reporting Standards (IFRS). In addition it briefly shows its (financial) importance to corporations and its role in corporate management. Its objective is to put the research in its context. In chapter 2 the research setup of this report is discussed, including the used methodology and the reporting structure. It defines and explains the research question its sub-questions and its relevance. It explains the research approach and gives the structure of this report.

The literature on added value of corporate real estate (management) is reviewed in chapter 3. The objective is to provide a basis for the current state of the art model (as discussed in chapter 4) and to give some insight in the complexity of CRE.

Chapter 4 provides the state of the art model as constructed by Lindholm based on the literature and various structured interviews.

In chapter 5, the state of the art model is evaluated, with the main conclusion, that the financing aspect needs to be added. Subsequently an adapted model is proposed.

Chapter 6 gives an analysis to which extent CRE ownership affects the performance of corporations. As a first step is explored how CRE ownership varies over the different industries. This makes it possible to compare CRE ownerships of corporations with their peers. The second step is a regression analysis, of which the outcome indicates how strong the linear relationship between CRE ownership and the value drivers is. The outcome will support the decision making concerning CRE. The outcomes related to the ‘general opinion in the field’ in order to put them in perspective. Finally, chapter 7 gives a summary of results and an epilogue.

The report is preceded by:

- An abstract
- A preface

And contains following appendixes:

- Appendix 1: Management proposal.
- Appendix 2: Definition of ratio’s.
- Appendix 3: Description of standard industrial classification.
- Appendix 4: Overview of distribution histograms.
- Appendix 5: Bibliography.

3 LITERATURE REVIEW OF THE ADDED VALUE OF CRE

In this chapter the literature on added value of corporate real estate (management) is reviewed. The objective is to provide a basis for the current state of the art model (as discussed in chapter 4) and to give some insight in the complexity of CRE.

When taking shareholder value as a starting point, one can distinguish three perspectives:

- *Business perspective*: the contribution of CRE to the core business process.
- *Asset management perspective*: the effect CRE has on the investment strategy.
- *Financial perspective*: the effect CRE has on the financing strategy.

The reviewed literature is categorized into these three perspectives. This is done to analyze where the ‘centre of gravity’ in current research is. One should note that, as corporate real estate is an integral subject, so is the literature. This makes it sometimes difficult to categorize, especially the business and asset-management perspectives are overlapping often in current literature. In these cases the objective of the study is normative.

The chapter starts with a brief introduction to CRE which includes the definitions of CRE and CREM. Secondly it provides an overview of prior research on key aspects.

3.1 Definitions

In 1983 Zeckhauser and Silverman made the definition of Corporate real estate (CRE) as the land and buildings, owned by a corporation which is not mainly in the real estate business. Later on, to make the definition clearer, others researchers have extended it, and mentioned that the objective of CRE is to support and underpin the core business of an organisation, which is not in real estate business.

In 1999 Roulac and Manning made a common used definition: “CRE is industrial, office and/or retail space (i.e. land, buildings, improvement etc.) in use by businesses, where not only site selection, but also facility design and space utilisation decisions,

inevitably impact a company's business operations and future cash flow in numerous ways beyond any investment return received from the ownership of the real property.” In other words, they define CRE as a “factor of production”, providing space for the manufacturing and delivery of goods and services.

As CRE includes all space involved in supporting a company's business, corporate real estate management (CREM) embraces the managerial and administrative functions regarding the space it uses (Roulac and Manning, 2001). The management of corporate real estate may include broad aspects, such as facility management, workplace design, outfit management, portfolio management of real estate etc.

In general, CRE decision making can be defined as *strategic* decision making. Decisions are non-recurring, long lasting, involve special attributes and require specialized expertise (based on Grant, Roulac and Manning).

3.2 Business focus

Traditionally CRE is seen as a cost factor and decisions concerning CRE have been driven by cost considerations only. Most recent studies are focusing on identifying how CRE contributes to the overall business performance. Therefore the question how to measure CRE performance has been researched more.

In the end of the 1980, beginning of the 1990's the first researchers started presenting the means or practices for enhancing the CREM contribution for the core business, other than cost-control. As cited by Lindholm (2008), Pittman and Parker (1989) studied the performance of the CRE departments. Their survey revealed that the CRE executives consider communications and working relationships with the management and operating divisions to be particularly important to a top-performing real estate department. Furthermore, their results indicated that centralized real estate and a senior reporting level are significant factors in determining how well the respondents' corporations are perceived to match importance with performance.

In 1993 Nourse and Roulac conclude that corporations should consider their CRE strategies from a wider perspective than only cost minimisation. To effectively support a range of corporate objectives, multiple real estate strategies are needed. Nourse and Roulac list eight types of real property strategies that encompass how a company's property decisions can be guided (see table 3.1). The first seven strategies comprehend the common corporate real estate decisions regarding site selection, facility design and leasing, the main difference with studies before is that they are placed in a strategic context within the corporate strategy and vision. Some include the traditional goals of reducing occupancy costs and facilitating production, operations and service delivery. Strategy number 8 relates to the real estate value creation by business.

1. Occupancy cost minimisation
- Explicit lowest-cost provider strategy
- Signal to critical constituencies of cost-consciousness
2. Flexibility
- Accommodate changing organisational space requirements
- Manage variability/risk associated with dramatic escalation/compression space needs
- Favor facilities that can readily be adapted to multiple uses by corporation and others
3. Promote Human Resource objectives
- Provide efficient environment to enhance productivity
- Recognize that environments are important elements of job satisfaction and therefore compensation
- Seek locations convenient to employees with preferred amenities
4. Promote marketing message
- Symbolic statement of substance or some other value
- Form of physical institutional advertising
- Control environment of interaction with company's product/service offering
5. Promote sales and selling process
- High traffic location to attract customers
- Attractive environment to support/enhance sale
6. Facilitate and control production, operations, service delivery
- Seek/design facilities that facilitate making company products/delivering company services
- Favor locations and arrangements that are convenient to customers
- Select locations and layouts that are convenient to suppliers
7. Facilitate managerial process and knowledge work
- Emphasize knowledge work setting over traditional industrial paradigm
- recognize changing character, tools used in, and location of work
8. Capture the real estate value creation of business
- Real estate impacts resulting from demand created by customers
- Real estate impacts resulting from demand created by employees
- Real estate impacts resulting from demand created by suppliers

Table 3.1: Alternative Real estate strategies (Nourse and Roulac 1993 p 480) source Lindholm

In an effort to pinpoint the added value of real estate, Krumm (1999) (citing De Jonge) described seven elements of added value (Table 3.2) contributing to the transformation of real estate from mere "cost of doing business" to a true corporate asset. His list differs from that of Nourse and Roulac (1993) by reformulating facilitating operations to increase productivity, more clearly identifying increasing value as a strategy,

highlighting changing culture by introducing workplace innovations, and grouping a range of real estate decisions under the heading of risk control.

1. Increasing productivity	<ul style="list-style-type: none"> - Offering adequate accommodation - Site selection - Introducing alternative workplaces - Reducing absence of leave
2. Cost reduction	<ul style="list-style-type: none"> - Creating insight into cost structure - More efficient use of workplaces - Controlling costs of financing
3. Risk control	<ul style="list-style-type: none"> - Retaining a flexible real estate portfolio - Selecting suitable locations - Controlling the value development of the real estate portfolio - Controlling process risk during (re)construction - Controlling environmental aspects and labour conditions
4. Increase of value	<ul style="list-style-type: none"> - Timely purchase and sale of real estate - Redevelopment of obsolete properties - Knowledge of and insight into real estate market
5. Increase of flexibility	<ul style="list-style-type: none"> - Organisational measures (working hours, occupancy rates) - Legal/financial measures (mix own/rent/lease)
6. Changing the culture	<ul style="list-style-type: none"> - Introducing workplace innovations
7. PR and marketing	<ul style="list-style-type: none"> - Selection of branch locations - Image of buildings - Governing corporate identity

Table 3.2: Elements of added value of real estate (De Jonge 1996) source: Krumm

From 2000 onwards, workspace issues become a more important element of CREM. The physical workplace is the third most important factor (after compensation and benefits) in the decision to accept or leave a job; 41% of those surveyed in the U.S. said it would influence their decision to take a position (Lindholm cited ASID 1999).

Besides the workplace issues, location issues are highlighted as well. Retailers, hotels and industrial firms have long recognized that site selection is an essential component for financial success (see Craig et al., 1984; Kimes and Fitzsimmons, 1990; and Singhvi, 1987, for example cited in Lindholm). Service providers can also trace financial success to proper site selection (Becker et al., 1997 cited in Lindholm). Office occupiers can gain value by using buildings to create or reinforce a corporate image, using them as symbols to reflect their values and culture (Capowski, 1993 cited in Lindholm).

Joroff et al. (1993) was one of the first that reported CRE in the set of other resources: capital, people, technology and information. They showed the evolution of CRE from

the taskmaster through the controller, dealmaker and entrepreneur to the business strategist, which addressed overall company competitiveness (see figure 3.3).

Singer et. al (2007) researched how organisations are using CRE strategy to support their organisation's competitive strategy. Their case study shows that most of the organisations, seven out of ten, use a standardisation CRE strategy. The organisations that use a CRE strategy have a clear vision of the corporate image they want to create with their buildings. Furthermore, they perform efficiently. The research results show that a standardisation real estate strategy can support all three competitive strategies: lowest costs, differentiation and focus.

Level of CRE strategy	Function
Taskmaster	Procure cost efficient facilities
Controller	Standardize space needs to minimize facility occupancy costs
Dealmaker	Creative space-needs, problem-solving and negotiation real estate specific assets
Entrepreneur	Provide real estate services as a competitive service provider
Business Strategist	Integrate workforce, workplace and technology trends into overall business strategy

Table 3.3: the five stages of CRE development (source Joroff)

3.3 Asset management focus

In 1989, Gale and Case studied the state of CRE management practices. They found out that the dominant view of real estate continued to be as a production factor. But there had been significant growth of CREM units during the 1980's in the US, which had been accompanied by increased influence and more active real estate resource management. Nevertheless, Gale and Case also concluded that the dominant view of CRE resources as a cost factor of production was only slowly shifting, and very few corporations saw at that time CRE resources as a profit unit.

As cited by Lindholm: Miles et al., (1989) noticed that many corporations have the opportunity of increasing their profitability through more effective management of their real estate. According to Miles et al. (1989), this entails evaluating real estate on an on-

going basis, using an approach that treats the interactions of real estate with the capital structure, debt capacity, cost of capital and the overall operations of the firm. Miles et al. (1989) summarized that it is very important for corporations to view real estate as an asset that can and should be actively managed to achieve corporate goals.

Monitoring company performance has traditionally been associated with accounting, and the purpose has been to determine a company's financial success. Success has been judged via comparison with the previous years' results and various key indicators, such as return on investment, turnover and net profit. This has also been the case in the context of corporate real estate management (CREM). Historically, corporate real estate managers have tended to measure performance from an operational efficiency perspective – factors such as operating costs, costs per square foot and maintenance cost (Arthur Anderson & Co., 1993; Duckworth, 1993; Nourse, 1994; Bdeir, 2003, in Lindholm 2008).

A review of literature by Lindholm (2008) showed the most commonly used measures: Cost, Space efficiency, Satisfaction, CRE unit efficiency and Portfolio efficiency.

Cost	Occupancy cost per square foot (Arthur Andersen, 1993; Nourse 1994; Bon et al. 1994; Massheder and Finch, 1998; Bdeir 2003) Occupancy cost per customer (Bon et al., 1994) Occupancy cost per employee (Arthur Andersen, 1993; Massheder and Finch, 1998; Bdeir, 2003) Occupancy cost per dollar or per unit of revenue (Nourse, 1994) Occupancy cost per seat (Bdeir, 2003) Occupancy cost as a % of total operating expense (Arthur Andersen, 1993; Bdeir, 2003) Occupancy cost as a % of operating revenue by building or business unit (Massheder and Finch, 1998)
Space efficiency	Square feet per employee (Arthur Andersen, 1993; Nourse, 1994; Massheder and Finch, 1998; Bdeir, 2003) Percent of space occupied (Nourse, 1994; Bdeir, 2003) Gross floor area per usable floor area (Massheder and Finch, 1998)
Satisfaction	Customer satisfaction (Bdeir, 2003) Employee satisfaction with work environment (Arthur Andersen, 1993; Nourse 1994; Bdeir, 2003) Number of helpdesk calls per square foot (Bon et al., 1994) Provision of amenities (Bdeir, 2003) Absentee rates by buildings (Massheder and Finch, 1998)
CRE unit efficiency	Cost per corporate real estate employee (Bdeir, 2003) Actual extra occupancy cost versus predicted cost (Massheder and Finch, 1998)
Portfolio efficiency	Cost of acquisitions versus returns (Massheder and Finch, 1998) Holding costs per year (Massheder and Finch, 1998)

Table 3.4: Overview of most commonly used measures of CREM (source: Lindholm)

As can be seen in table 3.4: most corporate real estate and facilities management sources provide an oversight of common performance indicators, which usually

represents the operational view of these disciplines. However there is little literature available, covering the development of a systematic approach to performance measurement in CREM, which would embrace every aspect of CREM and facility management, namely strategic, tactical and operational, and especially tie up CREM to the organisational strategic decision making (Lindholm 2008).

3.4 Financial focus.

The first theoretical research on the effect of corporate real estate performance on shareholder value management has been done in the US in the late 80s and early 90s (Noha, 1993; Nourse and Roulac, 1993; Kimbler and Rutherford, 1993). Hence, Nourse and Roulac (1993) noticed that most US corporate managers did not have a formal real estate strategy and ignored or lacked interest in their property assets in their overall strategy. Krumm and Vries (2003) have shown a consistent negative relation between the firm's return and the degree of real estate ownership. Although the return on real estate is generally lower than the return on the core business, real estate may provide other forms of added value, like efficiency and effectiveness of the activities in the corporation. Within the given industry a firm's return is lower if it has a relative high fraction of its total assets in real estate.

Manning and Roulac (2001) argued that by virtue of the large capital intensity in property investments, CRE assets can have a significant impact on the firm's credit facility, its financial statements and its operating economics. In addition, Miles et al, (1989) argue that real estate is capable of affecting many corporate financial parameters such as cost of equity, cost of debt, debt capacity, systematic risk and market-to-book ratio of a non real estate firm. It is thus necessary for real estate to move into the mainstream of corporate financial management and its importance analyzed within the context of the "whole" firm.

Krumm and Vries (2003) state that real estate can impact on corporate performance by cost reductions or by improving revenues. First they studied direct financial impact of real estate in which cost and valuation come together: a pure financial relation based on generally accepted accounting principles. A second kind of impact they studied is the

indirect influence of real estate, which is realised through supporting other business activities to operate in an effective and efficient manner. According to them, the required nature of added value of CRE transformed from a mainly technical or real estate finance perspective to a corporate finance perspective. In their debate they state that the direct added value of professional real estate management is consequently often considered to be of no value. The indirect effects of real estate are however hard to quantify and therefore often not taken into account.

Liow and Ooi (2004) have examined the influence of corporate real estate on shareholder value using two value-based measures: Economic value added (EVA) and market value added (MVA). They concluded that, for non-real estate Singapore listed firms, corporate real estate has impacted negatively on firms' EVA and MVA in the period 1997-2001. This negative impact was even greater for conglomerates with high RE asset intensity. Their results suggest that higher real estate intensity (defined as the proportion of total tangible assets represented by property) was associated with lower EVA and MVA. A further conclusion was that diversified conglomerates simply seem not to know whether their RE assets are creating value or destroying value within their business portfolio.

Brounen and Eichholtz (2005) have explored how corporate real estate ownership affects the stock performance of non-real estate companies. They found a negative but insignificant relationship between relative real estate holdings and risk-adjusted stock performance. A sector-by-sector analysis showed that the effect of corporate real estate ownership on outperformance is to a large extent driven by the sector the company operates in.

3.5 Conclusions

Conclusions concerning this chapter are very limited because this chapter doesn't give an overview of all the literature on corporate real estate management. It only indicates where the general focus of literature concerning the added value of CRE is: from a business point of view.

It can be remarked that research into the added value of CRE mainly builds upon papers of the following researchers: Zeckerhauser and Silverman, Veale, O'Mara, Nourse and Roulac, De Jonge, Krumm, Lindholm, Liow, Nappi Choulet and Heywood. They all take the business management point of view. Most financial oriented research is from the investment point of view. There is financial oriented research from the user point of view.

Furthermore it can be remarked, that the bonus score card approach (as developed by Kaplan and Norton) is the dominant approach for measuring added value of CRE. What these models fail to provide is a clear linkage (and a rationale for that linkage) between the performance measures and the corporate system of rewards and punishments. They don't provide a scorecard in the traditional sense of the word. It can tell managers many interesting things about CRE, but it does not give a score for the contribution compared to other supporting business units to organisation's performance.

4 STATE OF THE ART MODEL

Based on the literature and various structured interviews Lindholm (2008) created a theoretical model for identifying and measuring the value added by CRE. This model (see figure 4.1, next page) relates corporate strategic management and real estate decisions and operations. This leads to means to identify and prove the contribution of real estate to the occupier organisation and the possibilities that exist for adding value.

As described by Lindholm: The model starts with the idea that business strategy can be comprised of two basic approaches for increasing the shareholders' value: revenue growth and profitability. These corporate strategies must then be translated into supporting real estate strategies that guide the operating decisions. The key idea in this model is to identify real estate strategies that can create added value to the core business, contributing to the wealth of the organisation and shareholder's value.

The proper combination of real estate strategies will vary, depending on the corporation's strategic positioning within the market. The organisation may want to emphasize revenue growth through building the franchise and/or increasing value to its customers. Alternatively, it may want to emphasize profitability through improved cost structure and more efficient use of assets. At the level of real estate strategy the model shows seven options:

- increasing the value of assets,
- promoting marketing and sales,
- increasing innovation,
- increasing employee satisfaction,
- increasing productivity,
- increasing flexibility,
- and reducing costs.

These strategies can be used to set objectives and guide real estate decisions, which in previous research was shown to directly or indirectly affect the core business of the organisation.

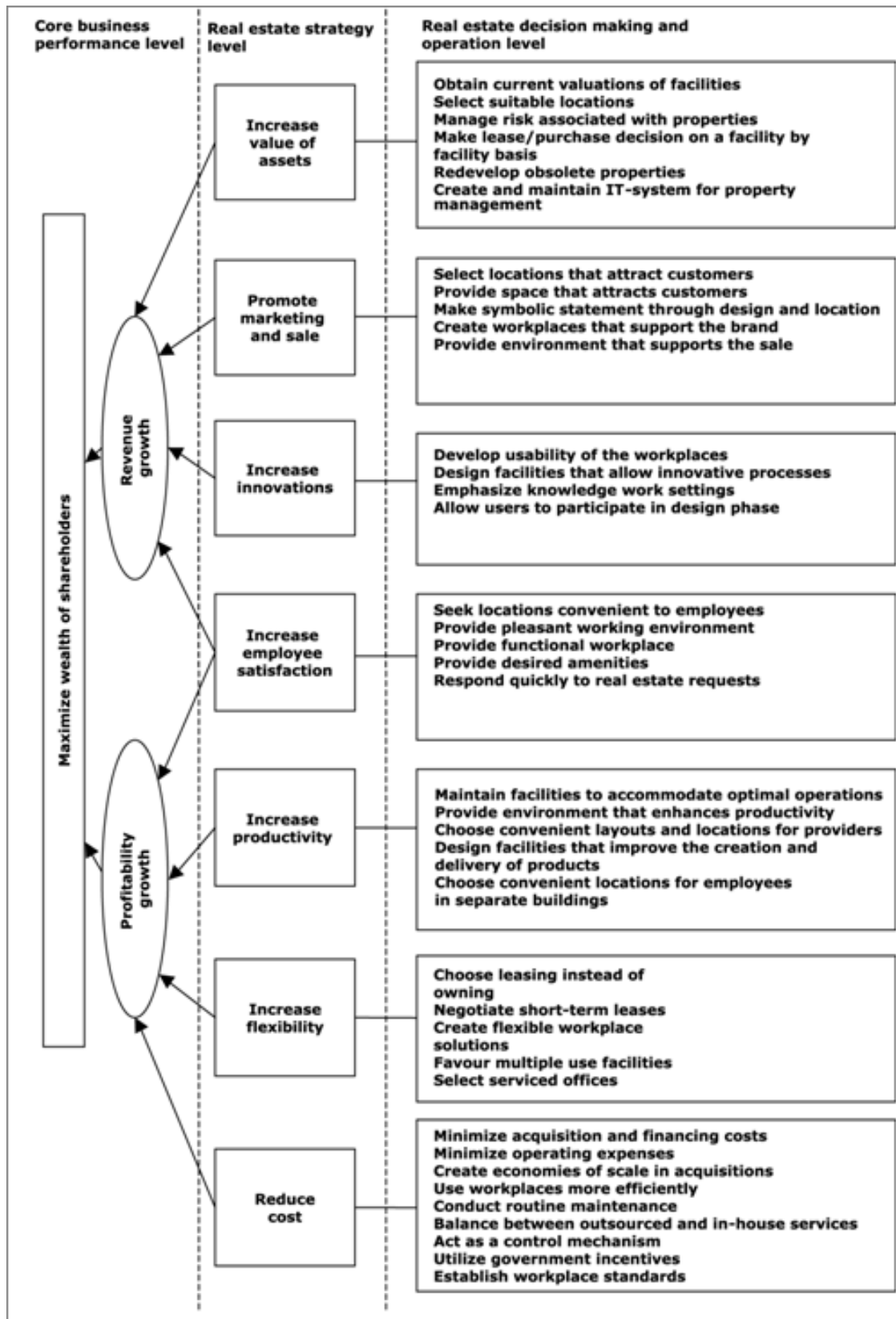


Figure 4.1: Theoretical model of measurement (source Lindholm)

Lindholm gives the following description of the aspects of real estate strategy level:

Increase value of the assets

The first strategy, increasing the value of assets through managing the real estate portfolio, views real property as a capital asset that can be managed to optimize financial contribution to the organisation. The objectives may be to maximize the value of the property portfolio or ensure that the lowest cost alternative is chosen, considering all short- and long-term costs of owning versus renting. However, proper management of the company's portfolio must start with an inventory and valuation of current facilities, then management via a property information system.

Marketing and sales

Real estate can contribute to the marketing and sales strategies through site selection and physical design. Accessibility and visibility are keys to attracting customers and increasing revenues. Physical design can be used to create an image for the company among its suppliers, employees, customers, and investors, an indirect way of adding value to the organisation.

Increasing innovations

Increasing innovations is a less familiar real estate strategy. Many organisations are in knowledge businesses, operating in very competitive environments. To survive and grow they need to innovate. These organisations need to provide workspaces that encourage and support innovative thinking and working. This requires the participation of the space users in planning spaces and providing the type, size, and design of workspace that creates an inspiring working atmosphere. This, in turn, will lead the organisations to the increased revenues that manufacturers achieve through innovation.

Increasing employee satisfaction

Increasing employee satisfaction with their working environments depends on real estate and facilities management decisions concerning site selection, workplace design and amenities, and environmental quality. Organisations making workplace decisions to improve employee satisfaction can expect to achieve the increased financial returns

experienced by other firms in a range of industries which have recognized this indirect path to profits.

Increasing productivity

Increasing productivity will also lead to increased profitability. Real estate decisions on site selection, infrastructure and interior design directly impact the functionality of the space, allowing employees to work more efficiently and effectively. Real estate and facilities decisions influence a number of personnel and system factors, which influence the level of productivity of the individual and, subsequently, the level of productivity of teams and profitability of an organisation.

Increasing flexibility

A strategy of increasing flexibility may include both physical workspace and financial terms. Many organisations form and reform work teams within their offices on a regular basis. They are experimenting with flextime and shared jobs that allow workers to share space. Others want to be ready to move into and exit markets quickly as conditions change. In contrast, most space agreements are long-term and workspaces relatively fixed, obligating the organisation to pay for space that is not optimal for its operations. If one of the key drivers of flexibility for the organisation is its workspace, then a real estate strategy that focuses on providing flexible space matching the duration of business needs will support the organisation's core strategy and add value to the organisation. Some operating decisions that would follow from a flexible real estate strategy include choosing spaces that can be adapted to multiple uses and workers, creating flexible workspaces within the structures, negotiating short-term leases including options for expansion and contraction, and leasing rather than purchasing properties that are not essential to the core business.

Reducing costs

The most familiar of the strategies to increase profitability is reducing costs. Reducing cost in any area has a direct and immediate impact on the financial performance of the organisation. The most often mentioned real estate operating decisions to achieve cost reduction objectives include outsourcing some real estate services and using corporate real estate staff to oversee the real estate transactions of an operating unit. Other actions the organisations may consider in pursuit of this strategy include co-locating business

units, occupying green buildings and choosing locations based on governmental incentives. They may reduce expenses by negotiating lower rates for real estate related services and utilities, and increasing quality and timing of facilities maintenance to avoid costly repairs and capital expenditures.

5 EVALUATION OF CURRENT STATE OF THE ART MODEL

In chapter 5, the state of the art model is evaluated. Based on this evaluation an adapted model is proposed.

5.1 Shareholder value framework

As already indicated in chapter 2, Peter Drucker introduced in his book, *The practice of management*, ‘the concept of management by objectives’ (MBO). The basic idea is to translate corporate strategy into a series of measurable objectives which can cascade down the organisation. This allows managers to track and increase performance, while employees know what is expected of them and can reap the rewards if they meet their targets.

Business is about creating value. The value of a firm is, primarily, determined by the profits it creates over its lifetime. As most business have the goal of maximisation of the value, some tools of financial analysis can be used to assess its profitability.

A number of methods is available to measure the (added) value of (a part of) a firm or a project. The Shareholder Value network (see figure 5.2) is the first generally accepted model which expresses the different management decisions in economic measures. Many ‘modern’ measurements to measure value are based on this approach and are comparable.

Shareholder value is defined as follows: “The total economic value of an entity such as a company or a business unit is the sum of the value of its debt and its equity. This value of the business is named the corporate value while the value of the equity portion is named shareholder value” (Rappaport, 1998)

The concept is introduced by Alfred Rappaport in the 1980’s. The approach argues and utilizes discounted cash flow technique to evaluate future benefits and costs. The method can be used to mark the changes in the value of a business or a project over a period of time. It measures to which extent it enriches the firm’s shareholders.

Rappaport stated that the value of a company is dependent on seven drivers of value, as shown in table 5.1.

The seven drivers of value
(Increase) Sales growth
(Increase) Operating profit
(Reduce) Cash tax rate
(Reduce) Incremental investment in capital expenditure
(Reduce) investment in working capital
(Increase) Time period of competitive advantage
(Reduce) Cost of capital

Table 5.1: The seven drivers of value (Rappaport, 1998)

The drivers are not all to be treated equally – in different businesses, different drivers will be more important. For example, in a hotel, with a high fixed cost base, the most important driver is sales, as measured by the occupancy rate. This is a totally different model from, for example, a bank lending to corporate customers, where profits arise from a slim margin between the rate at which the bank borrows and that at which it lends. Here, more value will be created by improving interest margins and by reducing operating costs than can be derived from increasing the volume of business: in such a bank, the cost–income ratio is an important measure of performance.

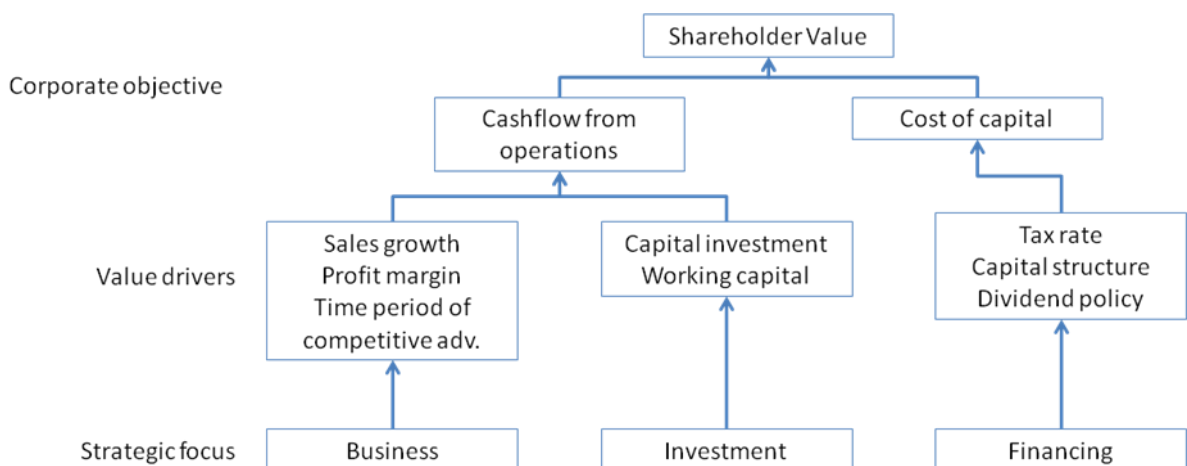


Figure 5.2: Shareholder value analysis (McElroy/TiasNimbas Corporate Finance slides/Alfred Rappaport;)

The essentials of the model are best summarized in figure 5.2. The network shows the essential links between the corporate objective of creating shareholder value and the basic valuation parameters, the value drivers.

The starting point is at the bottom of the figure with the distinction between the three areas which contribute to value creation: business, investment and financing management.

The effect of business decisions are primarily shown by the following three value drivers:

- Sales growth
- Operating profit margin
- Time period of competitive advantage

Business decisions such as the range of products and services, pricing policy, promotion, distribution and customer service, for example, have a particular impact on the “Sales Growth”, “Operating Profit Margin” value drivers.

The effect of investments decisions are primarily shown by the following two value drivers:

- Working capital investment
- Fixed capital investment

Investment appears as a value driver under working capital and fixed capital – high inventory levels or the expansion of capacity, for example.

The effect of financing decisions is primarily shown by the following three value drivers:

- Tax rate
- Capital structure
- Dividend policy

The “Cost of Capital” is determined on the one hand by risks from business operations and, on the other, by a company's financial risk. For real estate this mainly refers to the capital structure, i.e. the relationship between debt and equity financing, and partly to investment risks which might arise from the technology which has been applied

According to Rappaport business value depends on the seven value drivers and while these drivers are critical to determine the shareholder value, they are too broad to be useful for operation decisions. The use of the value drivers lies in the fact that they enable corporate managers to determine which activities must be managed most actively in order to maximize value. To be useful, corporate managers must establish for each business a set of so-called micro value drivers.

Based on the value driver analysis, corporate management can decide which macro value drivers and according activities add most value to the business. Based on this analysis corporate managers must focus on the micro value drivers and the according activities which add most value to the business.

5.2 No financial aspect taken into account

In figure 5.3 the state of the art model (figure 4.1) is assessed using the shareholder value framework.

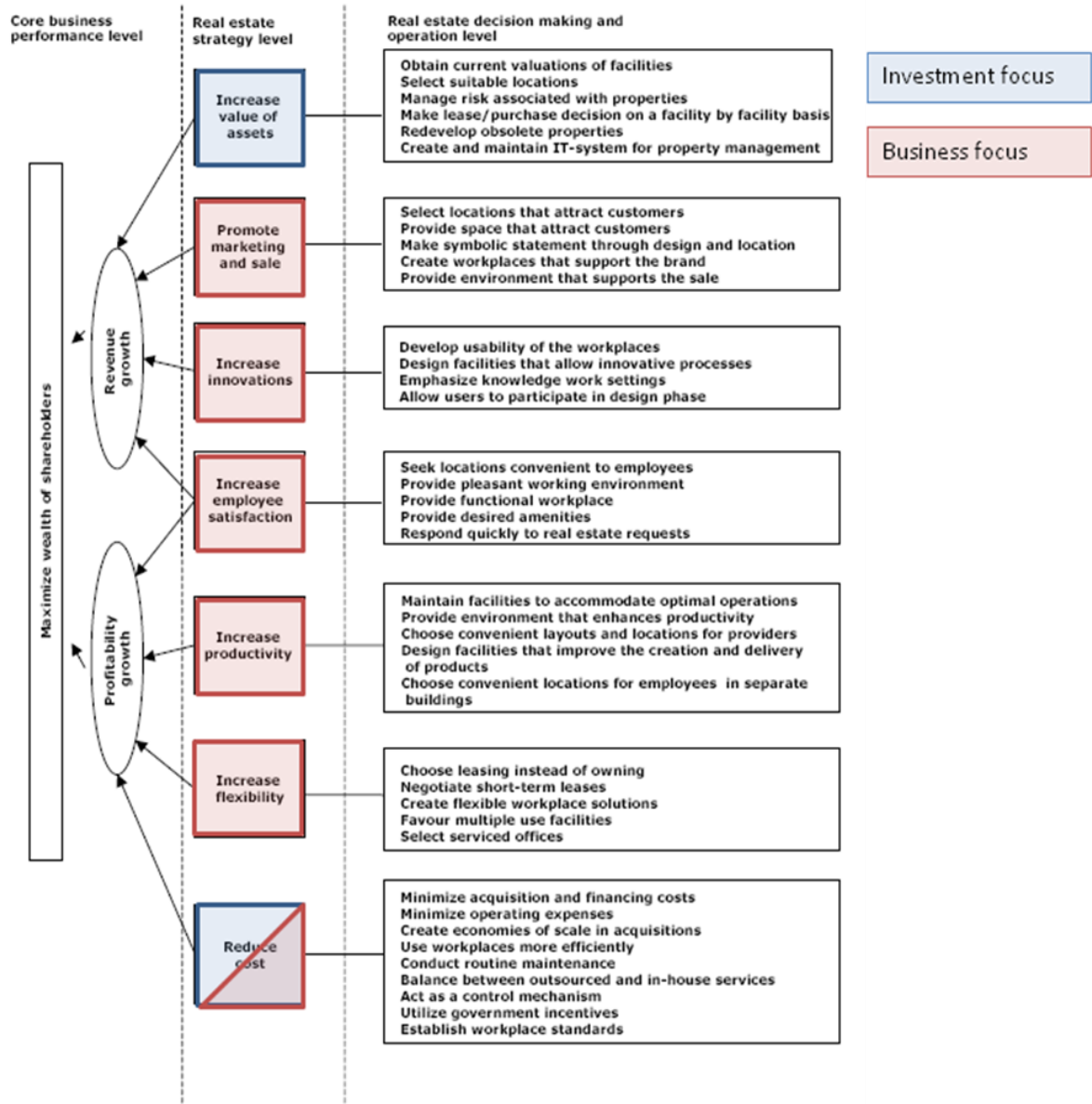


Figure 5.3: Strategic focus of current model

As can be seen in figure 5.3, the analysis is limited to the investment and business focus. Increasing the value of assets is an investment focus, reducing the cost is partly an investment focus and partly a business focus. The other aspects are business focused. The effects of CRE on the corporate financial parameters are not taken into account. Thus the effects of CREM on financing are not taken into account.

This can be explained by the roadmap (see figure 5.4) used by Lindholm for constructing the model. As can be seen, the business focus is dominant.

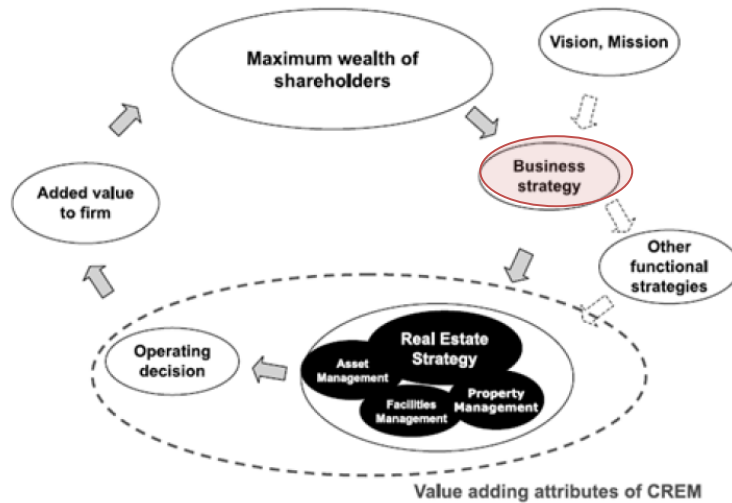


Figure 5.4: Roadmap for constructing the model by Lindholm.

5.3 Secondary remarks

As secondary remarks the following remarks could be made when evaluating the model:

Intangible aspects

Within the model there is an overexposure to intangible aspects. This can be seen at the level of real estate decision making and the operation level (see figure 5.3).

No single dimension

The model has no single dimension and therefore it is impossible to maximize an objective. Given “the dozen measures” and no basis on which they can be traded off, it will be impossible to make proper decisions and the result will be confusion.

No relative importance

In line with the prior argument, there is no difference made between primary and some secondary aspects. Although stated that every firm has to make its own decisions based on the situation in general, one can argue that some aspects are of more influence than others.

5.4 Importance of financial management

Pfnuer (2004) investigated the importance of the financial aspects of CRE for companies. Pfnuer distinguishes two perspectives for corporate real estate. The user function, how well real estate supports the business and the owner function, which are the investment and financing perspective.

As can be seen in table 5.5 corporate real estate managers value the owner perspective as important as the user perspective.

Owner function		User function	
Securing liquidity	3,8	Staff satisfaction	3,3
Increase in equity performance	3,4	Public corporate picture	3,0
Increase in total earnings	3,4	Competitive ability	3,6
Reduction of total cost	3,3	Attractiveness of investors	4,0
Increase in corporate value	3,5	Corporate sustainment/security	3,8
Average	3,46	Average	3,54

Table 5.5: Importance of owner and user aspects for CRE manager (1=unimportant ; 7 = important) Source: Pfnuer (2004)

Within the Shareholder value framework the cost of capital is seen as important because it is used as a discount factor in the calculation of the value. The cost of capital is determined on the one hand by the risks from business operations and on the other hand by a company's financial risk. For real estate this mainly refers to the capital structure, tax rate, and partly to investment risks.

5.5 Proposed added aspects

Based on the analysis the following model is proposed to measure added value.

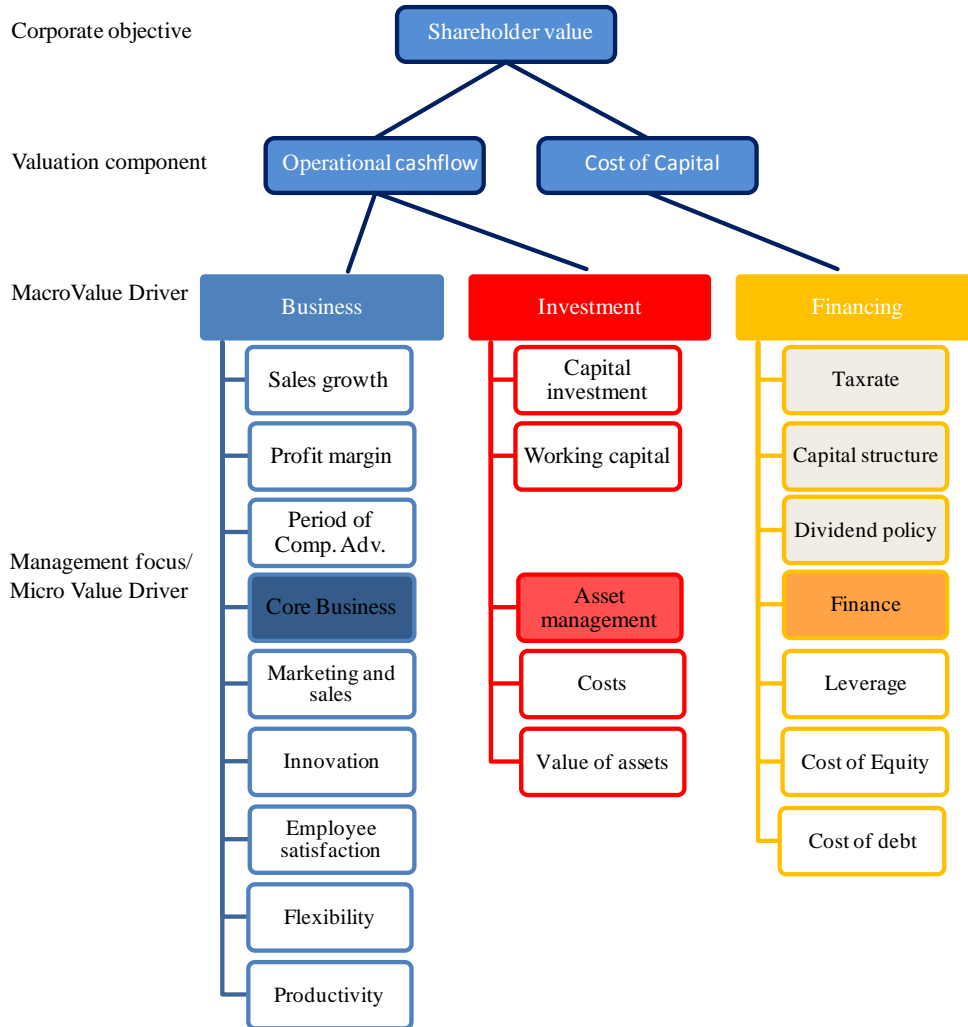


Figure 5.6: Proposed model to measure added value of CRE.

When comparing this model (figure 5.6) to the state of the art model two mayor aspects are added:

- the macro value driver level and
- the financing aspect at micro value driver level

The macro value driver level

As discussed in the previous paragraph this level can be used to determine where CRE management has to focus in order to maximize value for the shareholder. Furthermore it puts CRE in line with the corporate score card. Once the focus is

determined at a macro value driver level, the micro value drivers can be determined to actually realize the value.

The advantages of this model over the state of the art model are:

- It provides a link to the key business drivers
- It provides a single performance measure.
- It expresses the added value in the language of corporate management.

By doing this, it becomes clear what and how corporate real estate contributes to the core value of the organisation and which choices need to be made.

Financing.

Due to the capital intensive nature of CRE, a corporation normally uses (external) financing to invest in CRE. Consequently, a corporation needs to decide on the proportions of its financing from current liabilities, long-term, debts and shareholders equity. Such decisions have to be taken in the context of the firm's capital structure. Usually, if the firm decides to invest in CRE, it has to raise financing from a combination of debt and equity. This will affect its financial leverage, its cost of debt and cost of equity. It is widely assumed that a corporation can have more debt (higher financial leverage) or have lower cost of debt if it owns CRE. This is mainly because CRE assets are usually seen as secured collaterals for other corporate loans.

Cost of equity

Cost of equity is, by Rappaport, defined as: The cost of equity is the risk free rate plus the equity risk premium. Beta is the individual security's systematic risk, as measured by its beta coefficient.

Cost of debt

Cost of debt is, by Rappaport, defined as: The cost of debt is the long term interest rate.

Leverage

Leverage is, by Rappaport, defined as: total assets divided by the total assets minus total liabilities.

6 MACRO LEVEL ANALYSIS

This section describes the approach to which extent CRE ownership affects the performance of corporations. The objective is to identify and qualify the influence of CRE on the value drivers within the shareholder value framework.

As a first step of the analysis we explored how CRE ownership varies over the different industries. This makes it possible to compare CRE ownerships of corporations with their peers. As a second step a correlation analysis is executed. The outcome indicates how strongly CRE ownership and the value drivers correlate. The outcome will support the decision making concerning CRE.

In order to place the outcome of the analysis in perspective, first general accepted expectations are formulated. Essential input for these expectations is an interview held with the president of CoreNet Benelux. CoreNet Benelux is a professional association for corporate real estate and workplace executives, serving leading multinational companies from the Fortune and Global 1000.

By interviewing a representative of CoreNet a general accepted view is obtained on CRE. The advantage over interviewing CRE professionals of different corporations is that corporation specific issues don't interfere and the outcome can be considered as more objective.

6.1 Methodology

A two-step approach is used for the analysis. First CRE ownership is quantified and analyzed, secondly the relation between CRE and the value drivers is analyzed.

As the method of assessing the performance of corporations, financial ratio analysis is used. Financial ratio-analysis provides a quick and relative simple means of assessing the financial health of a business. By calculating a small number of ratios, it is often possible to build up a good picture of the position and performance of the company. Merely calculating a ratio will not tell us very much about the position or performance

of a business. It is only when we compare this ratio with some benchmark that the information can be interpreted. When analysing the performance of a corporation the ratio's must be compared against appropriate benchmarks, for example:

- Financial targets set by a corporations strategic plan
- Performance of peers
- Performance of the corporation from previous years

In most research work the PPE ratio is used to quantify CRE ownership. PPE stands for Plant Property and Equipment. Another word for PPE is "fixed assets". The PPE ratio is: fixed assets as part of total assets.

Otherwise than most previous researches concerning CRE, in this research the P-ratio and not the PPE-ratio is used. P stands for Property. The P-ratio is: property (in real estate) as part of total assets.

To measure the added value of owning CRE in a single dimension, the value drivers are expressed in financial ratio's. For every value driver within the shareholder value framework a corresponding financial ratio is chosen.

On the basis of a correlation analysis, the impact (positive or negative) of CRE ownership on the value driver can be expressed in a single dimension. The outcome identifies how strong the statistical correlation is between CRE ownership and the key business drivers. As mentioned in chapter 5 not every value driver is as important in each industry.

6.2 Data description

For this study we gathered balance sheet information for the companies, listed in the S&P Global 1200, through Thompson One Banker. The S&P Global 1200 is a global index, which captures approximately 70% of the world's capital markets. It is a composite of 31 local markets from seven headline indices, many of which are accepted leaders in their regions.

We have gathered the following ratio's:

- PPE ratio
- P-ratio
- Sales growth
- Profit margin
- Cash tax rate
- Cost of debt
- Working capital
- Leverage
- Dividend payout.
- Beta

In appendix 2 the definition of the ratio's are given.

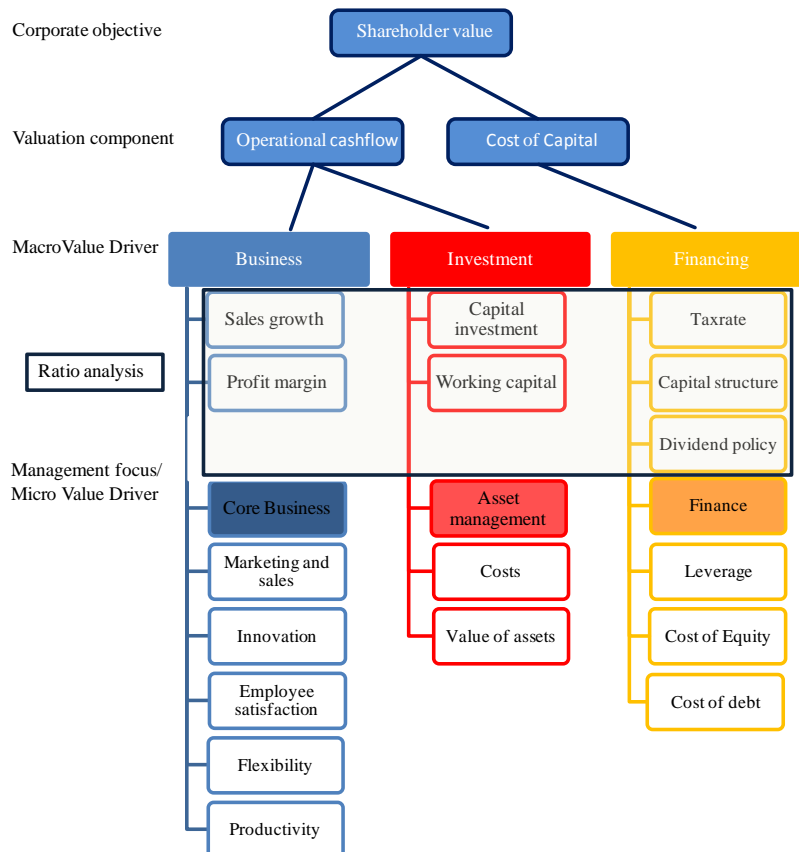


Figure 6.1: Overview link between value drivers and ratio analysis

As can be seen in figure 6.1. financial ratio's are used to assess the macro value drivers of the proposed model (compare with figure 5.6).

Based on the macro value drivers, we analyzed the effect of CRE on the following value drivers:

- Sales growth
- Profit margin
- Capital investment
- Working capital
- Tax rate
- Capital structure
- Divided policy

As there is no financial ratio which can be linked to the time period of competitive advantage, this is not measured. As a number of ratios give a perspective of the performance and not a single ratio, this will not affect significantly the overall outcome.

Table 6.2 gives the value drivers of the shareholder value framework and the corresponding ratio's.

Value driver	Ratio
Sales growth	Sales growth(5yr)
Profit margin	Profit margin (5yr)
Capital investment	
Working capital	Working capital/Total capital
Taxrate	Cash tax rate (5yr)
Capital structure	Total debt/ Total assets Cost of debt Beta
Dividend policy	Dividend payout.(5yr)

Table 6.2: Overview of value drivers and corresponding ratio's.

In appendix 2, the definitions of the ratio's are given.

As not all the ratio's are available for all the companies, the number of companies is reduced from 1243 to 848. The distribution of these firms over the industrial sectors is given in table 6.3, using the SIC-classification.

SIC code	Industry	Number of companies
01-09	Agriculture, Forestry, Fishing	3
10-14	Mining	38
15-17	Construction	34
20-39	Manufacturing	351
40-49	Transportation & Public Utilities	140
50-51	Wholesale Trade	15
52-59	Retail Trade	46
60-67	Finance, Insurance, Real Estate	162
70-89	Services	59
91-99	Public Administration	0

Table 6.3: Number of companies per industrial sector

As some industrial sectors (agriculture, wholesale trade and public administration) contain a very limited number of companies, they are not included in the evaluation (dark grey coloured). We therefore present the results for the following industries:

- Mining
- Construction
- Manufacturing
- Transportation & Public Utilities
- Retail Trade
- Finance, Insurance, Real Estate
- Services

Additionally we remark (as can be seen in table 6.3) that the number of companies in the following categories is rather limited.

- Mining
- Construction
- Retail Trade
- Services

This means that one has to be very careful when interpreting the results for these sectors (light grey).

Furthermore for most of the value drivers a single ratio is used. The more ratio's there are the better the perspective is.

6.3 Expectations

The expectations are formulated as general expectations, depending on the industry this may differ. The outcome of the analysis will be discussed in the perspective of the expectations (see section 6.6; overview and discussion of results).

Like the analysis, the expectations of the outcome can be divided in two aspects:

- CRE as part of the total assets
- Impact of CRE

CRE as part of the total assets

Based on previous research the general accepted view is that CRE makes up for 25-30% of the total assets. There is also the expectation that this figure dropped as a result of the increased sale-and-leaseback deals of the last 10 years. Furthermore the expectation is that the retail industry has a higher P-ratio than the average.

Impact of CRE

The impact of CRE on corporate performance is ambiguous. First there is the direct financial impact of CRE, as CRE makes of for a significant part of the fixed assets. The second impact is the indirect influence of CRE on the core business. CRE effects how effective and efficient a corporation operates.

The financial impact shows in the aspects finance and investment focus of the shareholder value framework. Given the high impact of CRE on these aspects, a stronger relation can be expected between the P-ratio and financial and investment value drivers than the relationship between the P-ratio and the business value drivers.

Below the impact on the different value drivers is discussed:

Capital structure

Because of the large capital intensity of CRE investments, CRE has an large impact on the capital structure. As CRE is normally financed by (extra) debt, it can be theoretically expected that the leverage will increase. In practice the optimal leverage objective might reduce the effect of extra leverage and the fact that CRE is seen as a good collateral for debt might increase the leverage.

Dividend policy

As shareholder expectations concerning dividend payments and overall the risk assumption are more important as the effect of CRE on the capital structure, no impact of the P-ratio on the dividend policy is expected.

Taxrate

A general assumption is that as a result of the higher debt due to the CRE, less tax will be payed.

Working capital

When a corporation owns CRE one can expect that less working capital is required because normally rent is higher than the (internal) cost of owning CRE.

Capital investment

When a corporation owns CRE one can expect it maintains its CRE. As an effect more incremental capital investment is made.

Sales growth

As owning CRE has on average little influence on sales, no linear relation is expected.

Profit margin

As normally the cost of owning CRE is lower then renting, a higher profit margin can be expected.

Table 6.4 gives a general overview of the impact of CRE on the value drivers.

Value driver	Relation	Expected impact
Capital structure	Strong	More leverage
Dividend policy	Weak	No impact
Tax rate	Strong	Less tax to be payed
Working capital	Weak	Less working capital needed
Capital investment	Strong	More capital investment needed
Sales growth	Weak	Minimum
Profit margin	Weak	More margin

Table 6.4: Overview of expectations of the impact of CRE on the value drivers

6.4 CRE Ownership

As various studies and reports over the last few years have suggested, the impact of CRE on financial statements would be significant. In most research the PPE ratio is used to estimate the impact of CRE on the business. As indicated in section 6.1, the PPE-ratio is the value of the plant property and equipment divided by the value of the total assets. As the name, plant property and equipment already indicates, the figure doesn't give the value of CRE (property in real estate) only.

In order to get of sharper perspective of the financial value and importance of CRE the P-ratio (the value of property divided by the value of the total assets, see section 6.1) is used.

The difference between PPE- and P-ratio for the companies in the period 1993 – 2011 is shown in table 6.5.

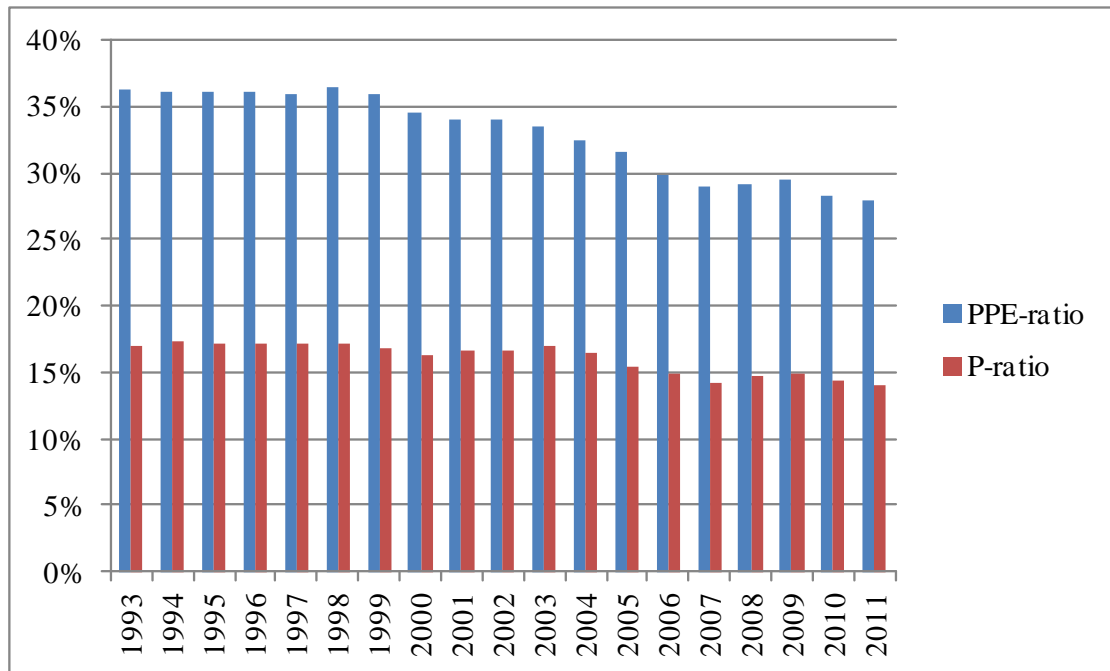


Figure 6.5 PPE-ratio vs P-ratio for the years 1993-2011.

The PPE-ratio is about 30%, generally double the P-ratio. The P-ratio is about 15% and is stable over the last 5 years. In table 6.6 the PPE- and P-ratio's per (relevant) industry are given.

SIC code	Industry	P-ratio	PPE-ratio	P/PPE
01-09	Agriculture, Forestry, Fishing	-	-	
10-14	Mining	10%	69%	14%
15-17	Construction	8%	26%	31%
20-39	Manufacturing	15%	27%	56%
40-49	Transportation & Public Utilities	13%	47%	28%
50-51	Wholesale Trade	9%	16%	56%
52-59	Retail Trade	30%	38%	79%
60-67	Finance, Insurance, Real Estate	12%	30%	40%
70-89	Services	8%	18%	44%
91-99	Public Administration	-	-	

Table 6.6: An overview of the average P and PPE ratio per industry.

Based on table 6.6 the following conclusions can be drawn:

- The level of real estate property differs widely per industry, from 30% of total assets in the retail industry to 8% in construction and services industry.
- Within the Retail industry property is a very significant part of the total fixed assets (nearly 80%).

- Except of the mining industry, real estate property is a significant part of the total fixed assets (28 – 79%).
- Except of the retail industry, real estate property makes up between 15% and 8% of the total assets.

The analysis furthermore showed, that there is a difference in the distribution of the PPE ratio and P-ratio (see figure 6.7a and 6.7b), if all companies of the various industrial sectors are considered.

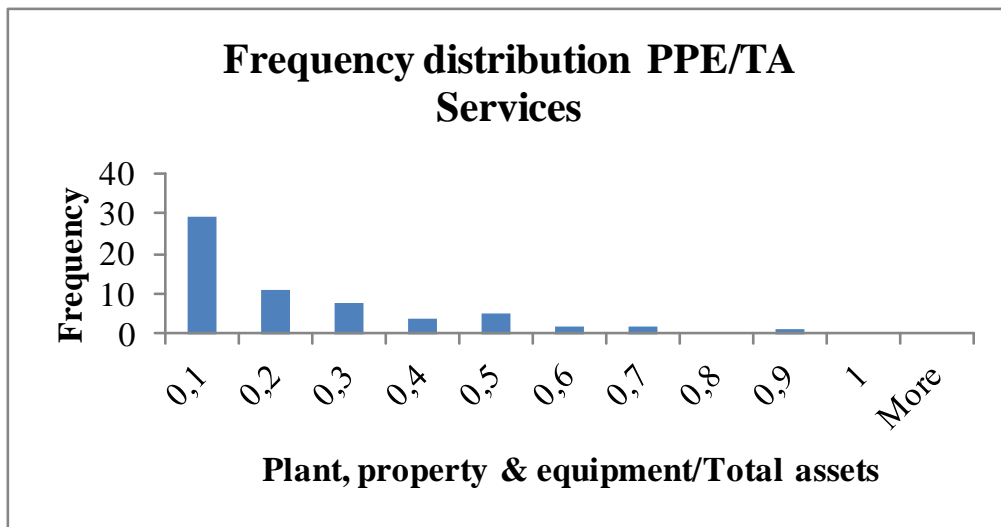


Figure 6.7a: Distribution of PPE-ratio of all analysed companies.

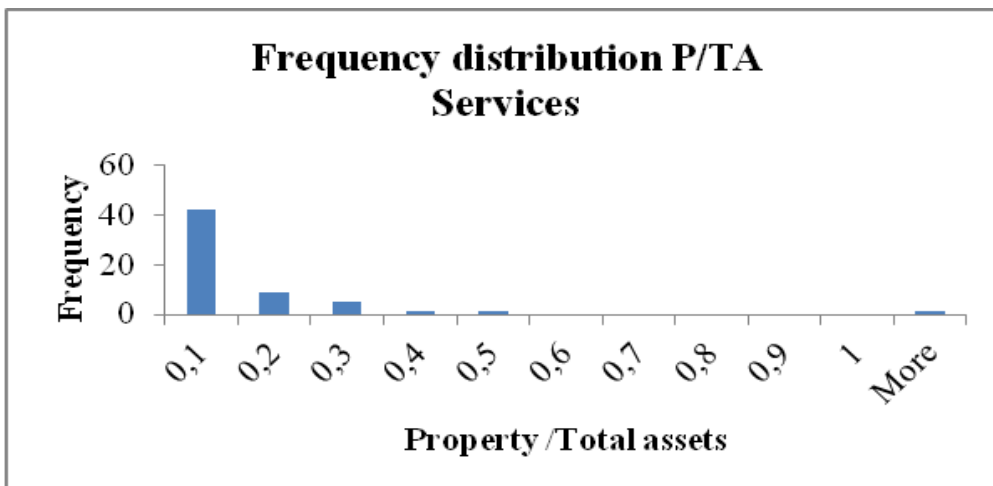


Figure 6.7b: Distribution of P-ratio of all analysed companies.

When comparing the two distributions, one can conclude that the distribution of the P-ratio is more unbalanced.

Except for the retail industry, the histograms of the different industrial sectors give a similar image. The distribution histograms of the different industrial sectors are given in appendix 4.

Based on the analysis, indicated in figure 6.7b, a conclusion is that for 50% of the companies CRE is 10% or less of the total fixed assets.

6.5 Regression Analysis

Having quantified and examined CRE ownership, the second step is to analyze the relation between CRE and the value drivers.

As a first step we examined the strength of the relation between CRE ownership and corporation performance.

For this purpose we have used the regression determinant. The regression determinant measures the amount of variation in the dependent variable by the variation in the independent variable. When interpreting the analysis it is important to keep in mind that when two variables are linearly related it does not mean that X is causing Y; **correlation** is not necessarily **causation** (if two factors correlate, it is not necessarily so, that there is a strong reason for this correlation).

The results of the regression analysis are given in table 6.8. Relations which are considered relevant and discussed in this report are in red in table 6.8.

As a second step we examined the linear relation of the value drivers and P-ratio. For this we used scatterplots.

	Overall	Mining	Construction	Manufacturing	Transportation	Retail trade	Finance, insurance & real estate	Services
Sic code		sic B	sic C	sic D	sic E	sic G	sic H	sic I
Cost of debt and P-ratio	0%	1%	4%	2%	5%	0%	6%	6%
Workcap/tcap(5yr) and P-ratio	0%	2%	2%	2%	1%	23%	12%	6%
Profit margin and P-ratio	1%	12%	50%	3%	3%	3%	35%	3%
Taxrate(5yr) and P-ratio	0%	12%	9%	9%	3%	2%	5%	0%
Dividend payout(5yr) and P-ratio	2%	0%	16%	1%	8%	2%	11%	1%
Beta and P-ratio	1%	1%	1%	0%	6%	4%	2%	0%
TD/TA(5yr) and P-ratio	0%	4%	3%	0%	0%	17%	1%	1%
Salesgrowth (5yr) and P-ratio	0%	1%	5%	0%	7%	18%	1%	6%

Table 6.8: Overview of regression determination (relations which are considered relevant and discussed in this report are in red)

Sales growth

The analysis of the different industries shows that the linear relation between sales growth and the P-ratio, in general is very weak. Exception is the retail industry with a coefficient determinant of 18% which indicates a weak linear relationship.

Figure 6.9 gives the scatterplot of the relation between sales growth and the P-ratio for the retail industry. An explanation for the negative linear relationship between the P-ratio and the value driver sales growth may be that leasing retail outlets is easier and quicker to accomplish, compared to buying; and adding more outlets, in general, mean higher sales growth.

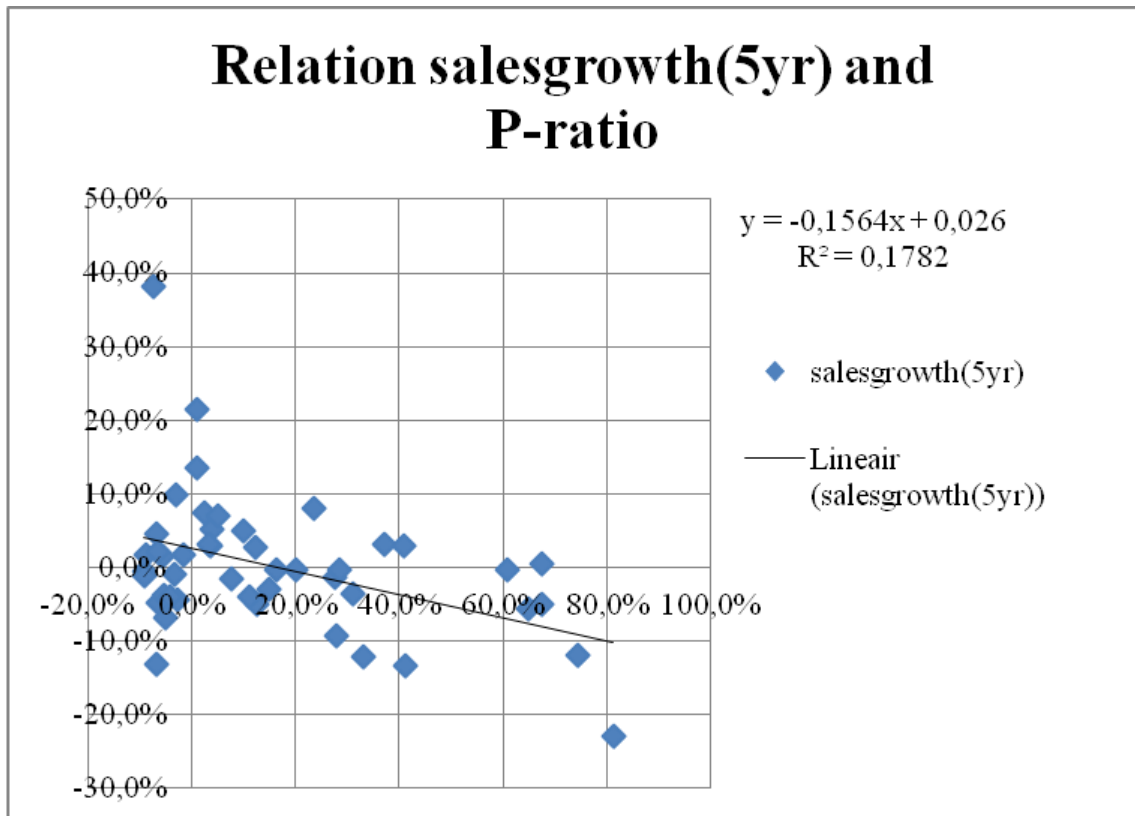


Figure 6.9: Scatterplot of sales growth and the P-ratio in the retail industry.

Cash tax rate

Based on the analysis, as can be seen in table 6.8, there is a weak relation between the cash tax rate and owning CRE. All the coefficients of determination are below 12%. For this value driver a further regression analysis is not executed.

Profit margin

The analysis of the different industries for this value driver shows that the relation in general is weak. Exceptions are the construction industry with a coefficient determinant of 50% and the finance, insurance and real estate industry with a coefficient determinant of 35%.

Figure 6.10 gives the scatterplot of the relation between profit margin and the P-ratio in the construction industry.. The value driver dividend payout and the P-ratio seem to have a strong relationship in the construction industry, may be explained by the fact that the P-ratio doesn't reflect CRE as defined. In other words within the P-ratio is not only CRE in the sense of property for use but also for investment, like offices for reconstruction or land which is used for the core business.

In other words within the P-ratio is not only CRE but also property like offices which are held as investments and are rented out.

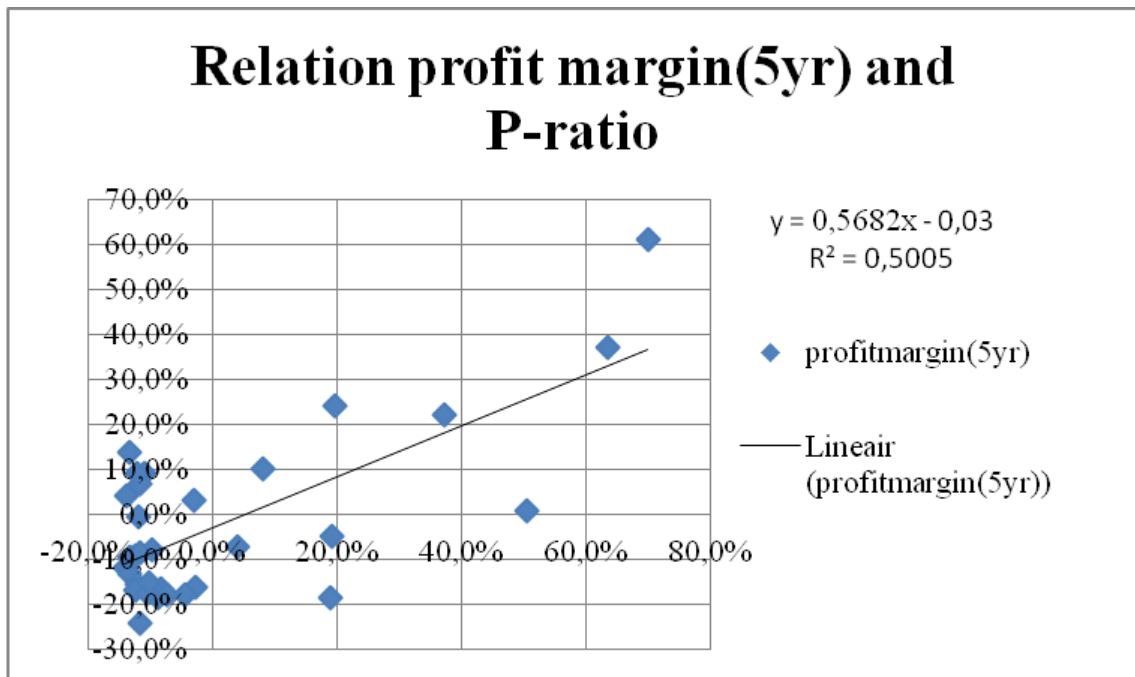


Figure 6.10: Scatterplot of profit margin and the P-ratio in construction industry.

Figure 6.11 (next page) gives the scatterplot of the relation between profit margin and the P-ratio in the finance, insurance and real estate industry. The positive linear relationship between the profit margin and the P-ratio in the finance, insurance and real estate industry may be explained by the fact that the P-ratio doesn't reflect CRE as defined. In other words within the P-ratio is not only CRE in the sense of property for use but also for investment, like offices for reconstruction or land which is used for the core business.

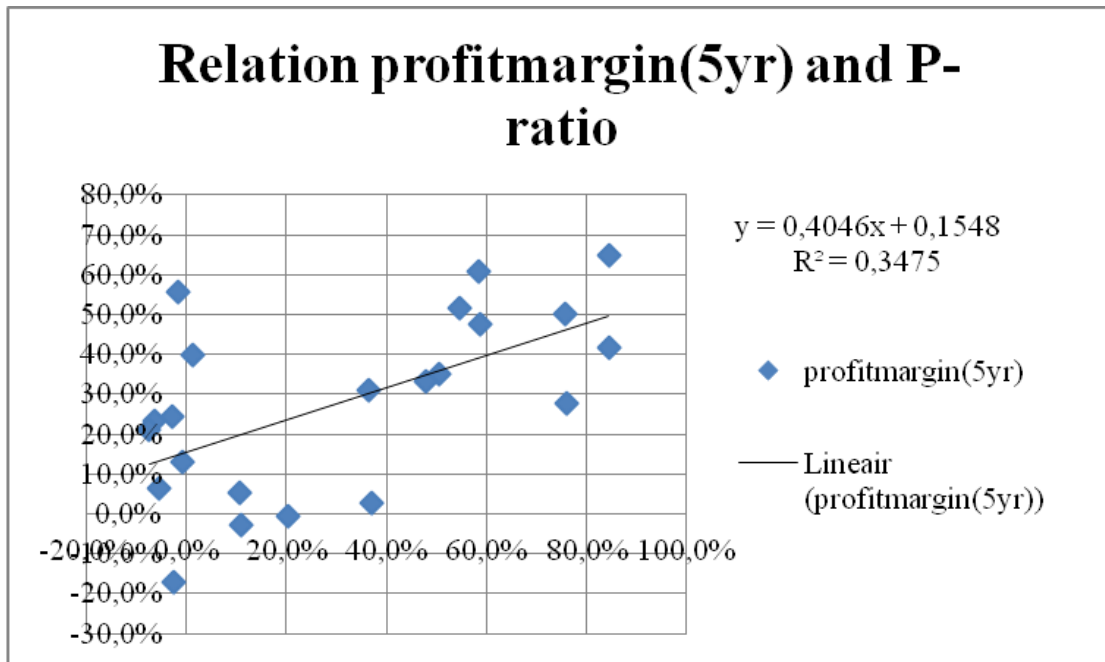


Figure 6.11 : Scatterplot of profit margin and the P-ratio in the finance, insurance and real estate industry.

Working capital

The analysis of the different industries shows that the linear relation between working capital and P-ratio in general is very weak. Exception is the retail trade industry with a coefficient determinant of 23%.

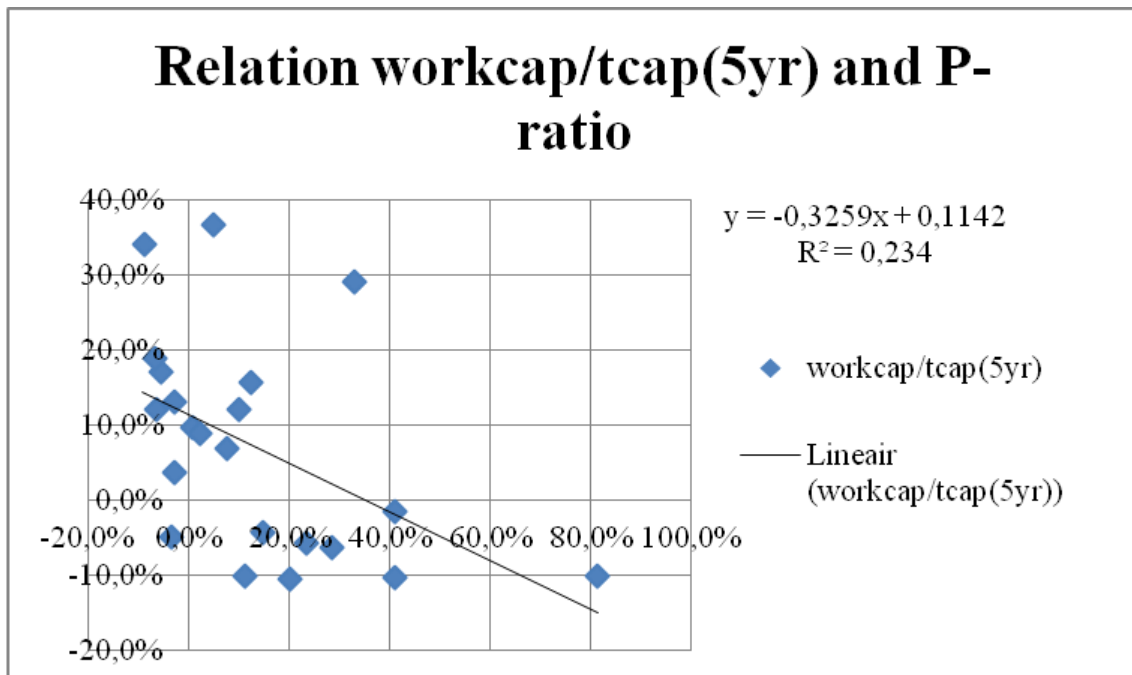


Figure 6.12: Scatterplot of working capital over total capital and the P-ratio in the retail trade industry.

An explanation for the negative linear relationship between the P-ratio and the value driver sales working capital (working capital/ total capital) can be found in the fact that for paying rent more working capital is required. Interest on extra debt requires no extra working capital in the view of accountancy.

Leverage

The analysis of the different industries shows that the correlation between leverage and owning real estate in general is weak. Exception is the retail trade industry with a correlation of 17%.

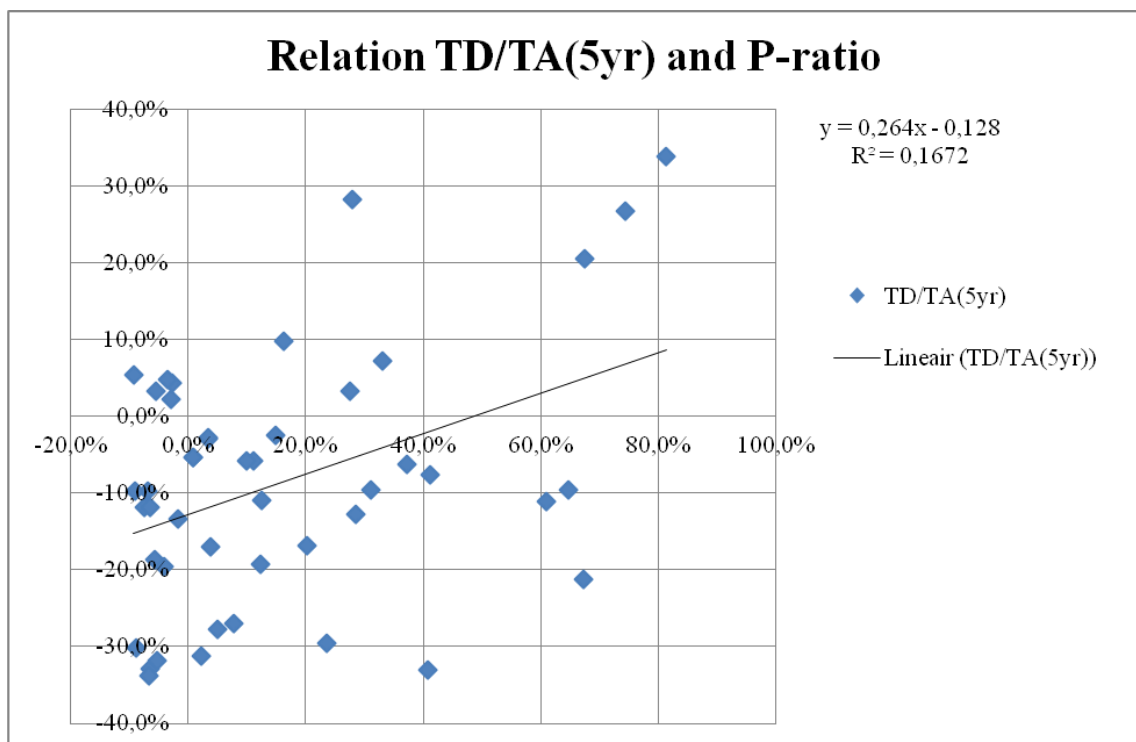


Figure 6.13: Scatterplot of total debt over total assets and the P-ratio in the retail trade industry.

Based on the analysis, as can be seen in figure 6.13, there is a weak positive linear relationship between total debt over total assets and owning CRE. An explanation for the positive linear relationship between the P-ratio and the value driver leverage (total debt/ total assets) can be found in the combination of the fact that CRE is a significant part of the fixed assets in the retail industry and the fact that for buying real estate normally a mortgage is used to finance the CRE.

Dividend payout

The analysis of the different industries shows that the coefficient correlation between dividend pay-out and P-ratio in general is weak. Exception is the construction industry with a coefficient determinant of 16%.

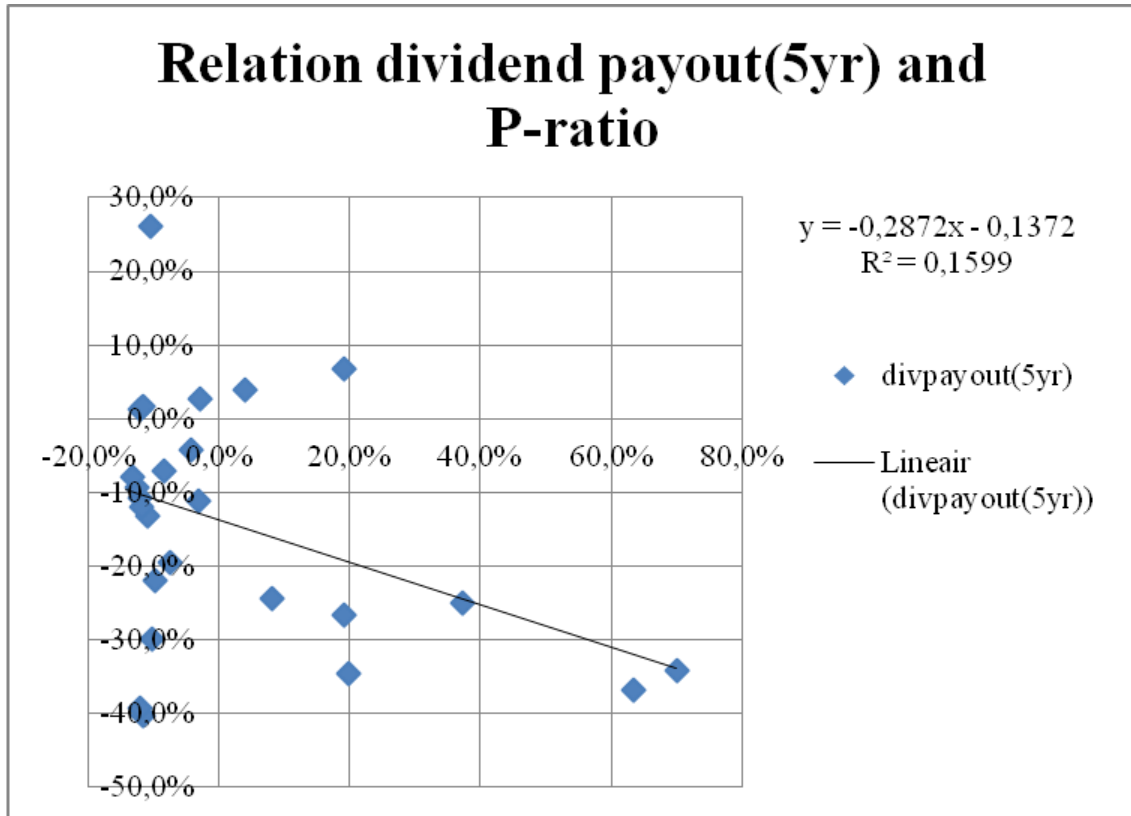


Figure 6.14: Scatterplot of dividend payout and the p-ratio in the construction industry.

Based on the analysis, as can be seen in figure 6.14, there is a weak negative linear relationship between dividend payout and owning real estate. This could be based on the fact that for buying real estate normally substantial financing is required and that the corporate management chooses to reinvest within in the company and/or bring down the total debt instead of paying dividend.

Beta

Based on the analysis, as can be seen in figure 6.8, there is a weak correlation between the beta and owning CRE. All the coefficients of determination are below 6%. For this value driver a further analysis is not executed.

Cost of debt

Based on the analysis, as can be seen in table 6.8, there is a weak correlation between the cost of debt and owning CRE. All the coefficients of determination are below 6%. For this value driver a further analysis is not executed.

6.6 Overview & discussion of results

The following conclusions may be drawn concerning CRE as part of the total assets:

Our research showed that the average P-ratio is about 15% and is relatively stable over the last 15 years. This differs significantly from the impression we got from previous research: Based on the PPE-ratio the general assumption was that CRE is about 30% of the assets (see section 6.1). Furthermore it shows that, on average the sale and leaseback deals of the last few years did not significantly influence the P-ratio. This is in contrast with the expectation as given in section 6.1. An explanation could be that the CRE managers perceive more deals but that relative to the total value of CRE, the amount that concerns sale and lease back is minimal. Furthermore the P-ratio can be effected by more aspects than only the sale and lease back deals. For example the valuation of CRE could have risen over the years.

The level of property differs widely per industry, from 30% of total assets in the retail industry to 8% in construction and services industry. Within the Retail industry real estate property is a very significant part of the total assets. Except for the mining industry, real estate property is a significant part of the fixed assets. Except for the retail industry, real estate property makes up between 15% and 8% of the total assets. The higher level of CRE as part of the total assets in the retail industry is in line with the expectations as stated in section 6.1. A commonly heard explanation is that CRE is a key asset for their core business and therefore historically retail corporations own a lot of CRE. The exception of the mining industry can be explained by the fact that corporations in the mining industry have a lot of other fixed assets. And although it seems unimportant in absolute terms, corporations in the mining industry possibly own a lot of CRE in absolute terms.

Based on a distribution analysis, it may be concluded that for 50% of the companies CRE is 10% or less of the assets. This goes for all the industries except for the retail industry.

The conclusion above explains partly the negligence of CRE. For many corporations CRE is not (considered as) important.

The following conclusions may be drawn concerning the impact of CRE on the value drivers:

In general there seems no strong relation between the value drives and the P-ratio.

Table 6.15 gives an overview of the expected of the impact of CRE on the value drivers and the analyzed impact of CRE on the value drivers in general.

Value driver	Expected Impact	Analyzed impact
Capital structure	Strong	Weak
Dividend policy	Weak	Weak
Tax rate	Strong	Weak
Working capital	Weak	Weak
Capital investment	Strong	Weak
Sales growth	Weak	Weak
Profit margin	Weak	Weak

Table 6.15: Overview of expected and analyzed expectations of the impact of CRE on the value drivers

The general opinion is that CRE, because of its magnitude of investment, effects the capital structure. The analysis showed no proof of this general opinion. There is no proof found in the analysis that CRE effects the capital structure.

Related to this opinion, it is expected that owning CRE affects the tax being paid. Also for this opinion the analysis shows no proof.

Furthermore owning CRE was expected to have a strong relationship with capital investment. Also here the analysis showed no proof.

The reasons for not finding a strong relationship between the value drivers and the P-ratio *could* be:

- There is no impact; CRE is not as important as regarded by the CRE professionals, as the distribution analysis shows for 50% of the corporations CRE is 10% or less of the value of fixed assets.
- The ‘wrong’ measures are applied: Financial ratio’s don’t capture everything and per value driver only one ratio is used in this research.

As Jacoby stated:

‘More stupefying than the sheer number of measures is the ease with which they are proposed and the actual uncritical manner in which they are accepted. In point the fact most of our measures are only measures because someone says they are, not because they have shown to satisfy standard measurement criteria’ (Jacoby 1978)

A closer look at the different industries showed that the value drivers working capital (figure 6.12), capital structure (figure 6.13) and sales growth (figure 6.9) in the retail industry seem relative strongly related with owning CRE. Given the limited number of companies within this industry, one should be careful with drawing conclusions from the analysis.

Furthermore the value driver profit margin and dividend payout in the construction industry seem relative strongly related with owning CRE (see figures 6.10 and 6.14)

The last relative strong linear relationship is the relationship between profit margin and P-ratio in the finance, insurance and real estate industry (see figure 6.11).

An explanation for the negative linear relationship between the P-ratio and the value driver sales growth may be that leasing retail outlets is easier and quicker to accomplish, compared to buying; and adding more outlets, in general, mean higher sales growth.

An explanation for the positive linear relationship between the P-ratio and the value driver leverage (total debt/ total assets) can be found in the combination of the fact that CRE is a significant part of the fixed assets in the retail industry and the fact that for buying real estate normally a mortgage is used to finance the CRE.

An explanation for the negative linear relationship between the P-ratio and the value driver sales working capital (working capital/ total capital) can be found in the fact that for paying rent more working capital is required. Interest on extra debt requires no extra working capital in the view of accountancy.

The positive linear relationship between the profit margin and the P-ratio in the finance, insurance and real estate industry may be explained by the fact that the P-ratio doesn't reflect CRE as defined. In other words within the P-ratio is not only CRE in the sense of property for use but also for investment, like offices for reconstruction or land which is used for the core business.

The value drivers profit margin & dividend payout and the P-ratio seem to have a strong relationship in the construction industry, may be explained by the fact that the P-ratio doesn't reflect CRE as defined. In other words within the P-ratio is not only CRE in the sense of property for use but also for investment, like offices for reconstruction or land which is used for the core business.

7 Summary of results & epilogue

This chapter will provide a summary of results and an epilogue.

It is based on the literature research, the analysis and the interview with the CoreNet representative. Its objective is to give answers to the research questions.

7.1 Summary of results

Given the change in accounting regulations (IFRS), CRE will attract more attention and new questions about CRE and its strategy will be asked. In order to provide a framework to be able to answer these questions, the objectives as stated in chapter 2 of this research are:

- Insight in relevance of performance measures,
- Update of (theoretical) performance measures for CRE,
- Provide relevant performance measures for CRE.

The figure below gives a schematic overview of the objective, to come from a non-reasoned, multidimensional system of measures to a more one-dimensional, reasoned approach:

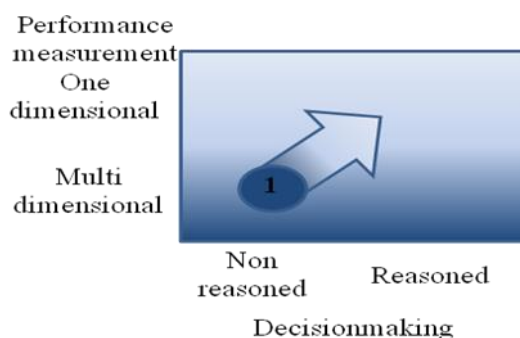


Figure 7.1 Schematic view of research objective

In order to meet the objectives the following (main) research question is formulated: “What (kind of) model and by extension measures may be needed to better quantify the direct and indirect effects the corporate real estate has on corporate performance?”,

In order to answer this question the following sub-questions are asked:

- What are the performance measures, currently used for CRE?
- What kind of performance measures could help the organisation to identify the contribution of CRE to the shareholder value?

Based on the executed literature research the conclusion is, that the current measures for CRE are:

- increasing the value of assets,
- promoting marketing and sales,
- increasing innovation,
- increasing employee satisfaction,
- increasing productivity,
- increasing flexibility,
- and reducing costs.

These measures are mostly used by the CRE departments. They are not measures which are needed to align CRE with corporate strategy, nor are they, 'common use' for corporate management.

CRE decisions are to be considered as strategic decisions because they are non-recurring, long lasting, involve special attributes and require specialized expertise. Furthermore they fail to provide a clear linkage (and a rationale for that linkage) between the performance measures and the corporate system. They don't provide a scorecard in the traditional sense of the word. It can tell managers many interesting things about CRE, but it does not give a score for its contribution to the organisation's performance, compared to other supporting business units

In order to identify the contribution of CRE to the shareholder value a performance measure should meet the described shortcomings. In other words, they should provide a clear link between the performance measures and the corporate system and should give comparable scores for their contribution to the organisation's performance

One of the main objectives of this research is to provide relevant performance measures for CRE. Based on the analysis above a shareholder value analysis (Rappaport) is used to measure the added value of CRE.

Figure 7.2 gives the proposed model.

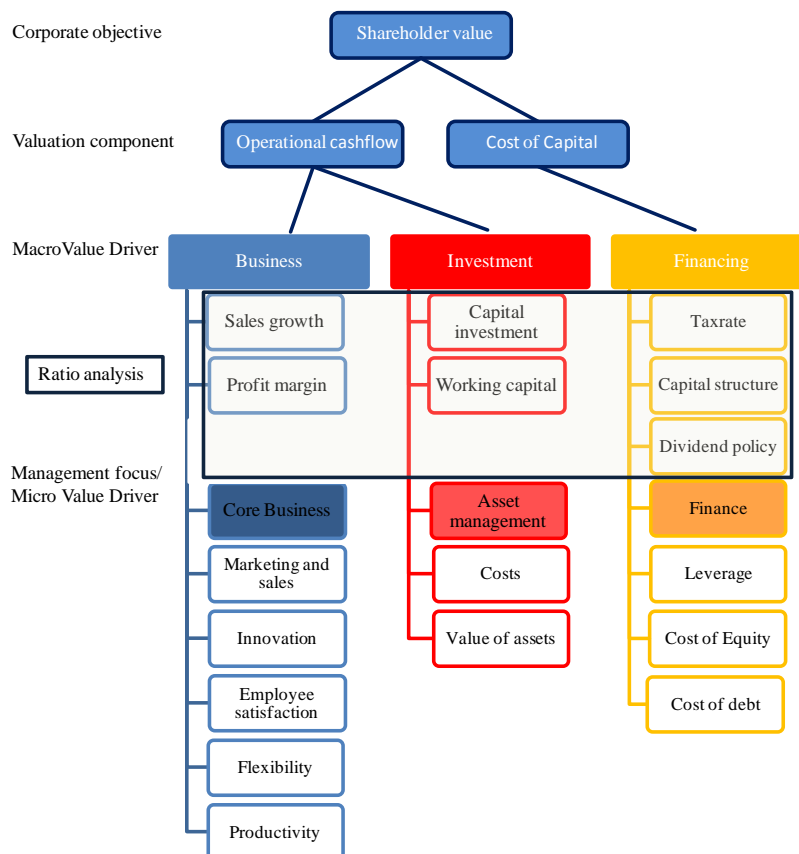


Figure7.2: Proposed model

In comparison with the current models of measuring added value, two mayor aspects are added:

- The macro value driver level
- and the financing aspect at micro value driver level.

The advantages of this model over the state of the art model are:

- It provides a link to the key business drivers
- It provides a single performance measure.
- It expresses the added value in the language of corporate management.

By using this model, it becomes clear what and how corporate real estate contributes to the core value of the organisation and which choices should be made.

In order to give insight of the relevance of CRE, the model has been applied to the S&P 1200 companies.

The following main conclusions may be drawn from the analysis:

Our research showed that the average P-ratio is about 15% and is relatively stable over the last 15 years. This differs significantly from the impression we got from previous research: Based on the PPE-ratio the general assumption was that CRE is about 30% of the assets. Furthermore it shows that, on average, the sale and leaseback deals of the last few years did not significantly influence the P-ratio.

The level of property differs widely per industrial sector, from 30% of total assets in the retail industry to 8% in construction and services industry. Within the Retail industry, real estate property is a very significant part of the total assets. Except for the mining industry, real estate property is a significant part of the fixed assets. Except for the retail industry, real estate property makes up between 15% and 8% of the total assets.

Based on a distribution analysis, it may be concluded that for 50% of the companies CRE is 10% or less of the assets. This goes for all the industrial sectors except for the retail industry.

In general there seems no strong linear relationship between the value drivers and the P-ratio.

Table 7.3 gives an overview of the expected of the impact of CRE on the value drivers and the analyzed impact of CRE on the value drivers in general.

Value driver	Expected Impact	Analyzed impact
Capital structure	Strong	Weak
Dividend policy	Weak	Weak
Tax rate	Strong	Weak
Working capital	Weak	Weak
Capital investment	Strong	Weak
Sales growth	Weak	Weak
Profit margin	Weak	Weak

Table 7.3: Overview of expected and analyzed expectations of the impact of CRE on the value drivers

The general opinion is that CRE, because of its magnitude of investment, effects the capital structure. The analysis showed no proof of this general opinion.. Related to this opinion owning CRE affects the tax being paid. Also for this opinion the analysis shows no proof. Furthermore owning CRE was expected to have a strong relationship with the amount of total capital investment. Also here the analysis showed no proof.

A closer look at the different industries showed that the value drivers working capital, capital structure and sales growth in the retail industry seem relative strongly related with owning CRE. Given the limited number of companies within this industry, one should be careful with drawing conclusions from the analysis.

An explanation for the negative linear relationship between the P-ratio and the value driver sales growth may be that leasing retail outlets is easier and quicker to accomplish, compared to buying; and adding more outlets, in general, mean higher sales growth.

An explanation for the positive linear relationship between the P-ratio and the value driver leverage (total debt/ total assets) can be found in the combination of the fact that CRE is a significant part of the fixed assets in the retail industry and the fact that for buying real estate normally a mortgage is used to finance the CRE. An explanation for the negative linear relationship between the P-ratio and the value driver sales working capital (working capital/ total capital) can be found in the fact that for paying rent more working capital is required. Interest on extra debt requires no extra working capital in the view of accountancy.

Furthermore the value driver profit margin and dividend payout in the construction industry seem relative strongly related with owning CRE. The positive linear relationship between the profit margin and the P-ratio in the finance, insurance and real estate industry may be explained by the fact that the P-ratio doesn't reflect CRE as defined. In other words within the P-ratio is not only CRE in the sense of property for use but also for investment, like offices for reconstruction or land which is used for the core business

The last relative strong linear relationship is the relationship between profit margin and P-ratio in the finance, insurance and real estate industry. The value drivers profit margin & dividend payout and the P-ratio seem to have a strong relationship in the construction industry, may be explained by the fact that the P-ratio doesn't reflect CRE as defined. In other words within the P-ratio is not only CRE in the sense of property for use but also for investment, like offices for reconstruction or land which is used for the core business.

7.2 Epilogue

The proposed extension of the model is, to my opinion, of prime importance because performance measurement has become a essential part of today's business. Top organizations are doing more than just measuring performance; they use sophisticated analysis as a strategic resource and a winning advantage.

Using the old framework and models, CRE professionals keep communicating too much blur; the essence of CRE and strategic choices made cannot be explained. IFRS will probably be a first wake-up call.

This framework should be seen as a first step, in a new approach to communicate the value of CRE in those terms, corporate management most wants to hear. And subsequently a framework to focus on activities that truly matter to the organization's success.

It will need further development and testing. But it is a start to create and communicate clear and substantive performance metrics that link real estate to the larger objectives of

the business. By designing and reporting metrics in a relevant and insightful way, real estate will become an integral part of the vision and success of their organizations.

The interview with the chairman of CoreNet Benelux gave insight in the reasons why the corporate financial aspect has not been developed yet. Historically CRE analysis is dominated by financial investment analysis and in order to differentiate from this financial approach the point of view of ‘user orientated’ research was ‘the business point of view’. The focus of research was not on financial business (as opposed to investment) aspects and therefore is never researched properly, as the first results indicated that ‘cost savings concerning CRE’ are relative small within the total financial view of the corporation. Furthermore the business aspects of CRE are hard to quantify and therefore not taken into account.

Hopefully this report is, at least, a trigger to start the discussion how to get CRE on the corporate agenda.

APPENDIX 1: MANAGEMENT PROPOSAL

MBA Management Project Proposal

Name Student	: Wouter W. Würdemann
University of Bradford number	: 10032148
Project title	: IFRS, the new era for Corporate Real Estate?
Supervisor	: Prof Dr. D. Brounen
Company	: Non company related
Planned submission date	: 9th of September 2012

This management Project structure conforms to the guidelines set out in appendix Section 6 of the document Management Project Guidelines.

Scope rational of the project

Corporate real estate (CRE) is a term, used to describe the real property held by a non-real estate company to support core business operations.

Changes in the competitive, economic, financial and regulatory conditions ignite changes in corporate real estate decision making.

Based on earlier research and first hand experience, one may conclude that the importance of CREM was and still is, in general, neglected by corporate managers.

The neglect of CREM by corporate managers may be the result of one or more of the following reasons:

- **Outsourcing:** The prime focus is on outsourcing services and reducing the impact of CRE on the corporate balance sheet (Krumm 1999). This means that improvements on CRE showed less and less on the corporate balance sheet: the corporate scorecard.
- **A lack of adequate information:** Roulac and Manning (1999) cited that the lack of adequate information results in difficulty of making suitable CRE

decisions. Lindholm (2008) gives the following reasons for ‘the lack of adequate’ information: first of all, it is not easy to create unifying models for the CREM contribution, because all the organisations and their demands and needs for real estate management are unique. Secondly, how to measure functions and processes where outcomes are mostly intangible. Besides that, most of the existing measures are more like indicators for operational tasks, not strategic performance measures, which could help the organisation to identify the CRE contribution to the corporate wealth. Krumm (2001) argues that, because CRE might not be regarded by many corporations as being a critical resource, information regarding financial and technical details are often concealed in clouds.

- **Real estate experience:** Few corporate officers come from the real estate field or have any experience with strategic property. Several literatures pointed out that the lack of this background and/or experience would make the property decision making process more difficult for corporate managers (Lindholm and Leväinen, 2006).
- **Delayed show of results:** By nature of real estate, the results of good or bad CREM are ‘delayed’ and as a result not of ‘first interest’ to corporate managers (based on Veale 1989).

Furthermore, as the trend of the last years, the reduced impact of CRE on the corporate balance sheet, in combination with the lack of adequate information makes information on CRE in *the Annual Report and Accounts* ambiguous.

This, in combination with delayed show of results and lack of experience concerning real estate among corporate officers, results in difficulty of making suitable CRE decisions and most decisions will be timely in relation to the effect on the annual accounts/ strategy.

In figure 1.2 position 1 gives the current status of strategic decisions concerning real estate.

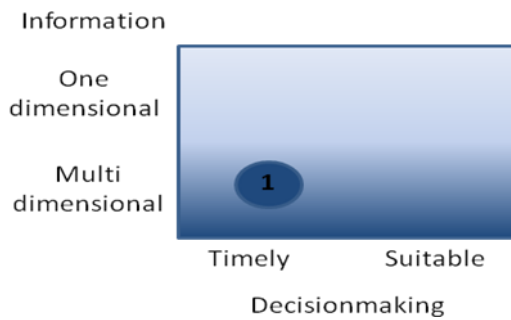


Figure: The current status of strategic decisions concerning real estate.

With the globalisation of international financial markets, the idea of adopting a common language for financial reporting to develop international comparability has become widespread. Of all the possible ways of implementing a single financial reporting language, adoption of **International Financial Reporting Standards (IFRS)** as an accounting standard was the approach selected by Europe and many other countries. More than 100 countries have agreed to require or allow adoption of IFRS, or have established timelines for the adoption of IFRS (Zalm; 2008):

Under IFRS a new set of rules, *lease accounting*, will take effect from 2013 onwards.

For CRE the mayor change is that the distinction between operating leases and capital leases will be eliminated. All leases, including existing arrangements, will go on balance sheet and rent will no longer be an operating expense. Balance sheets will swell and companies will see their debt loads increase massively.

Given the broad current academic and market discussion on IFRS lease accounting, it draws the attention to the influence of accounting and, by extension, corporate financial aspects on corporate real estate strategy. And vice versa: the influence of corporate real estate on accounting and by extension corporate financial aspects on the overall strategy.

The overall objective of this management project is to provide a framework which provides better and more complete information, to make more suitable strategic decisions on corporate real estate.

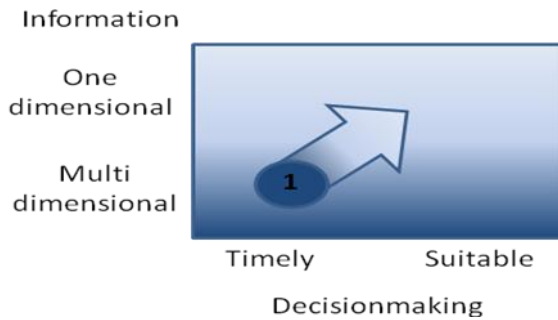


Figure: Schematic view of research objective.

Literature

Since this research makes extensive use of previous research most of the literature review will be derived from journals and dissertations.

As a starting point the following journals will be apprehended:

- Journal of Corporate Real Estate
- Journal of Real Estate
- Management Decision
- Journal of Real Estate Research
- Harvard Business Review
- Journal of Management Accounting Research
- Journal of Facilities
- Journal of Property Investment & Finance

The following dissertations will be used:

- Krumm, P., (1999), Corporate Real Estate Management in Multinational Corporations, Doctoral dissertation, Technical University Delft.
- Canon Timothy R., Christina A. Fenbert (2011), The Future of Lease Accounting and its Impact on Corporate Real Estate Decisions, Massachusetts Institute of Technology.
- Lindholm (2008) Identifying and measuring the success of corporate real estate management, Helsinki University of Technology

Furthermore information will be derived from IRES, Corenet, VastgoedLab, Jones Lang LaSalle, CBRE, DTZ Zadelhof.

Research approach and methodology

In line with the objective the main research question, discussed in the management project is:

“What (kind of) model and by extension measures may be needed to better quantify the direct and indirect effects corporate real estate has on corporate performance?”

This question is defined and further explained in this section.

Business is about creating value. The value of a firm is, primarily, determined by the profits it creates over its lifetime. As most businesses have the goal of maximisation of the value, some tools of financial analysis can be used to assess their profitability.

In 1954 Peter Drucker introduced in his book ‘The practice of management, the concept of management by objectives’ (MBO). The basic idea is to translate corporate strategy into a series of measurable objectives which can cascade down the organisation. This allows managers to track and incentivize performance, while employees know what is expected of them and can reap the rewards if they meet their targets.

As stated by Grant (2010): ‘When assessing the profitability one can use, or forward looking performance, or backward looking performance measures. Given the volatility of stock market values, evaluation of the firm performance focuses on accounting based performance i.e. backward looking performance.

Strategic corporate decisions, like decisions on CRE, are made to improve the firm's performance. In order to make the right decisions the performance needs to be analyzed. In order to analyze performance relevant appropriate, transparent information and performance measures are required.

CRE often accounts for a significant portion of the firm's total assets and/or working capital and as a result is important to the performances of the firm, especially in a financial perspective.

Although several studies related to CREM have addressed the topic of managing real estate resources, little research and literature is available on the benefits of CREM from the core business perspective

The lack of unifying corporate real estate models and by extension measures means that the contribution of real estate to the organisation and the possibilities that exist for adding value, are often not recognized nor properly considered.

Given the arguments above the main research question is: What (kind of) model and by extension measures may be needed to better quantify the direct and indirect effects the corporate real estate has on corporate performance?

Given the fact that all the organisations and their demands and needs for real estate management are unique, the objective is to offer a set of relevant measures, from which the organisations can choose, depending on their specific business strategy.

This will identify what data the organisations need to collect, to analyze the contribution of CREM to the organisation and help CREM gain better recognition and reward for the value the real estate adds to the organisation. This will enable them to make suitable decisions.

In order to answer the main question the following subquestions are asked:

- What are the performance measures, currently used for CRE?
- What kind of performance measures could help the organisation to identify the contribution of CRE to the shareholder value?

The objectives of this research are:

- Insight in relevance of performance measures.
- Update of (theoretical) performance measures for CRE.

- Development of advise for the supporting organisation(s).
- Provide relevant performance measures for CRE.

The project methodology follows the inductive research method, and is primarily based on an extensive literature review and a data analysis, complemented by interviews to test the constructed model.

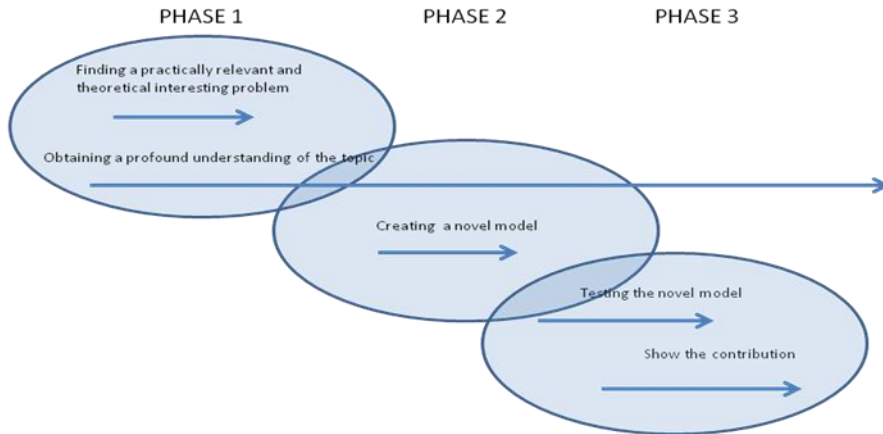


Figure: The phases and steps of the research process.

Data sources

Main sources of data are:

- Academic publications
- Financial reports (Thompson One Banker)
- Interviews

Aspects of MBA syllabus used

The project will involve the following aspects of the core courses:

- Strategic management
- Corporate finance
- Accounting
- Business research

Proposed Chapter Headings and Sub Headings

Preface

1. Introduction

Corporate Real Estate Management

IFRS lease accounting; a change in accounting regulations

The effect of IFRS to CREM

Conclusions

2. Research setup

Research question

Research approach and methodology

Structure of report

3. Literature review of the added value of CRE

Definitions

Business focus

Asset management focus

Financial focus

Conclusions

4. State of the art model

5. Evaluation of the current state of the art model

6. Adapted measurement model (2.0); the financial aspect added

7. Analysis of financial ratios- findings from the S&P global 1200

8. Analysis of financial ratios – findings from interview

9. Conclusions & Recommendations

Workprogramme

Proposed Time frame

	Phase	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Literature review	1								
Develop a novel model	2								
Testing the model	3								
Writing final report	3								
MBA Modules									
Holidays									

APPENDIX 2: DEFINITIONS OF RATIO'S

Property (P)

Name in Thompson One Banker: WS.BuildingsCostPPE

Buildings represent the architectural structure used in a business such as a factory, office complex or warehouse.

It includes:

- Oil/drilling rigs
- Houses
- Revaluation of buildings

Property, plant and equipment (PPE)

Name in Thompson One Banker: WS.TotalPropPlantEquipGross

TotalPropPlantEquipGross represents tangible assets with an expected useful life of over one year which are expected to be used to produce goods for sale or for distribution of services.

It includes:

- Land
- Buildings
- Machinery
- Equipment
- Construction work in progress
- Minerals
- Oil
- Autos & trucks
- Timberland and timber rights
- Leasehold improvements
- Rented equipment, if depreciated
- Furniture and fixtures
- Property, Plant and Equipment leased under capitalized lease obligations
- Book plates
- Non-current film costs and inventory

- Broadcasting rights and licenses
- Franchise rights and licenses
- Publishing rights and licenses
- Funds held for construction
- Long term power purchase contracts
- Software products

It excludes:

- Tools and dies amortized over less than two years
- Excess carrying value over cost of property
- Copyrights, trademarks, patents and goodwill
- Property not used in operations or used in operations to be discontinued
- Property held for sale for companies other than Real Estate (treated as investment and advances)
- Footnote Codes:
- Includes intangibles
- Included in other assets
- Excessive revaluation on fixed assets

Profit margin

Name in Thompson One Banker: WS.GrossProfitMargin

GROSS PROFIT MARGIN = Gross Income / Net Sales or Revenues * 100

Working capital

Name in Thompson One Banker: WS.WorkingCapPctTotalCapital

Definition: WORKING CAP PCT TOTAL CAPITAL = (Current Assets-Total - Current Liabilities-Total) / Total Capital * 100

Tax

Name in Thompson One Banker: WS.TaxRate

TAX RATE = Income Taxes / Pretax Income * 100

Footnote Codes:

Company is not a separate taxable entity for income tax purposes

Total debt/ Total assets

Name in Thompson One Banker: WS.CostOfCapital

Definition:

$$=((\text{TotalDebt}+\text{PreferredStock}+\text{TotalCommonEquity})*\text{WtdAvgCostofCapital})/100$$

Cost of debt

Name in Thompson One Banker: WS.CostOfDebt

INTEREST EXPENSE ON DEBT represents the service charge for the use of capital before the reduction for interest capitalized. If interest expense is reported net of interest income, and interest income cannot be found the net figure is shown.

It includes:

- Interest expense on short term debt
- Interest expense on long term debt and capitalized lease obligations
- Amortization expense associated with the issuance of debt
- Similar charges

Beta

Name in Thompson One Banker: WS.CostOfEquity

Definition:

$$\text{DividendYieldClose}+((\text{ReturnOnEquityTotalDollar}*\text{EarningsRetentionRate})/100)$$

Dividend payout

Name in Thompson One Banker:: DIVIDEND YIELD - CLOSE

$$\text{DIVIDEND YIELD CLOSE} = \text{Dividends Per Share} / \text{Market Price-Year End} * 100$$

It excludes:

- (1) Dividends paid to minority shareholders

Footnote Codes:

- A. Included in other sources or uses
- B. Includes bonuses to directors
- C. Prior year's proposed dividend

APPENDIX 3: DESCRIPTION OF STANDARD INDUSTRIAL CLASSIFICATION

What is a SIC Code? Standard Industrial Classification (SIC) codes are four digit numerical codes assigned by the U.S. government to business establishments to identify the primary business of the establishment. The classification was developed to facilitate the collection, presentation and analysis of data; and to promote uniformity and comparability in the presentation of statistical data collected by various agencies of the federal government, state agencies and private organizations.

The classification covers all economic activities: agriculture, forestry, fishing, hunting and trapping; mining; construction; manufacturing; transportation; communications, electric, gas and sanitary services; wholesale trade; retail trade; finance; insurance and real estate; personal, business, professional, repair, recreation and other services; and public administration.

Each division encompasses a range of SIC codes: for instance, the division of manufacturing holds all SIC codes with the first two digits between 20 and 39. To look at a particular example of the hierarchy, SIC code 2024 (ice cream and frozen desserts) belongs to industry group 202 (dairy products), which is part of major group 20 (food and kindred products), which belongs to the division of manufacturing.

Below the complete list is given.

A. Division A: Agriculture, Forestry, And Fishing

Major Group 01: Agricultural Production Crops

Major Group 02: Agriculture production livestock and animal specialties

Major Group 07: Agricultural Services

Major Group 08: Forestry

Major Group 09: Fishing, hunting, and trapping

B. Division B: Mining

Major Group 10: Metal Mining

Major Group 12: Coal Mining

Major Group 13: Oil And Gas Extraction

Major Group 14: Mining And Quarrying Of Nonmetallic Minerals, Except Fuels

C. Division C: Construction

Major Group 15: Building Construction General Contractors And Operative Builders

Major Group 16: Heavy Construction Other Than Building Construction Contractors

Major Group 17: Construction Special Trade Contractors

D. Division D: Manufacturing

Major Group 20: Food And Kindred Products

Major Group 21: Tobacco Products

Major Group 22: Textile Mill Products

Major Group 23: Apparel And Other Finished Products Made From Fabrics And Similar Materials

Major Group 24: Lumber And Wood Products, Except Furniture

Major Group 25: Furniture And Fixtures

Major Group 26: Paper And Allied Products

Major Group 27: Printing, Publishing, And Allied Industries

Major Group 28: Chemicals And Allied Products

Major Group 29: Petroleum Refining And Related Industries

Major Group 30: Rubber And Miscellaneous Plastics Products

Major Group 31: Leather And Leather Products

Major Group 32: Stone, Clay, Glass, And Concrete Products

Major Group 33: Primary Metal Industries

Major Group 34: Fabricated Metal Products, Except Machinery And Transportation Equipment

Major Group 35: Industrial And Commercial Machinery And Computer Equipment

Major Group 36: Electronic And Other Electrical Equipment And Components, Except Computer Equipment

Major Group 37: Transportation Equipment

Major Group 38: Measuring, Analyzing, And Controlling Instruments; Photographic, Medical And Optical Goods; Watches And Clocks

Major Group 39: Miscellaneous Manufacturing Industries

E. Division E: Transportation, Communications, Electric, Gas, And Sanitary Services

Major Group 40: Railroad Transportation

Major Group 41: Local And Suburban Transit And Interurban Highway Passenger Transportation

Major Group 42: Motor Freight Transportation And Warehousing

Major Group 43: United States Postal Service

Major Group 44: Water Transportation

Major Group 45: Transportation By Air

- Major Group 46: Pipelines, Except Natural Gas
- Major Group 47: Transportation Services
- Major Group 48: Communications
- Major Group 49: Electric, Gas, And Sanitary Services
- F. Division F: Wholesale Trade
 - Major Group 50: Wholesale Trade-durable Goods
 - Major Group 51: Wholesale Trade-non-durable Goods
- G. Division G: Retail Trade
 - Major Group 52: Building Materials, Hardware, Garden Supply, And Mobile Home Dealers
 - Major Group 53: General Merchandise Stores
 - Major Group 54: Food Stores
 - Major Group 55: Automotive Dealers And Gasoline Service Stations
 - Major Group 56: Apparel And Accessory Stores
 - Major Group 57: Home Furniture, Furnishings, And Equipment Stores
 - Major Group 58: Eating And Drinking Places
 - Major Group 59: Miscellaneous Retail
- H. Division H: Finance, Insurance, And Real Estate
 - Major Group 60: Depository Institutions
 - Major Group 61: Non-depository Credit Institutions
 - Major Group 62: Security And Commodity Brokers, Dealers, Exchanges, And Services
 - Major Group 63: Insurance Carriers
 - Major Group 64: Insurance Agents, Brokers, And Service
 - Major Group 65: Real Estate
 - Major Group 67: Holding And Other Investment Offices
- I. Division I: Services
 - Major Group 70: Hotels, Rooming Houses, Camps, And Other Lodging Places
 - Major Group 72: Personal Services
 - Major Group 73: Business Services
 - Major Group 75: Automotive Repair, Services, And Parking
 - Major Group 76: Miscellaneous Repair Services
 - Major Group 78: Motion Pictures
 - Major Group 79: Amusement And Recreation Services
 - Major Group 80: Health Services
 - Major Group 81: Legal Services
 - Major Group 82: Educational Services
 - Major Group 83: Social Services

Major Group 84: Museums, Art Galleries, And Botanical And Zoological Gardens

Major Group 86: Membership Organizations

Major Group 87: Engineering, Accounting, Research, Management, And Related Services

Major Group 88: Private Households

Major Group 89: Miscellaneous Services

J. Division J: Public Administration

Major Group 91: Executive, Legislative, And General Government, Except Finance

Major Group 92: Justice, Public Order, And Safety

Major Group 93: Public Finance, Taxation, And Monetary Policy

Major Group 94: Administration Of Human Resource Programs

Major Group 95: Administration Of Environmental Quality And Housing Programs

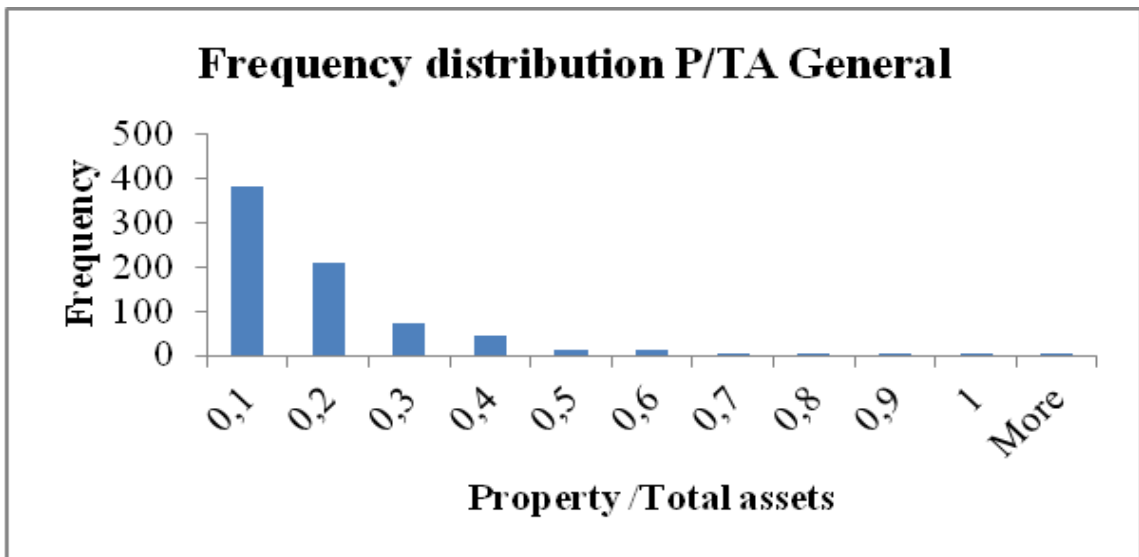
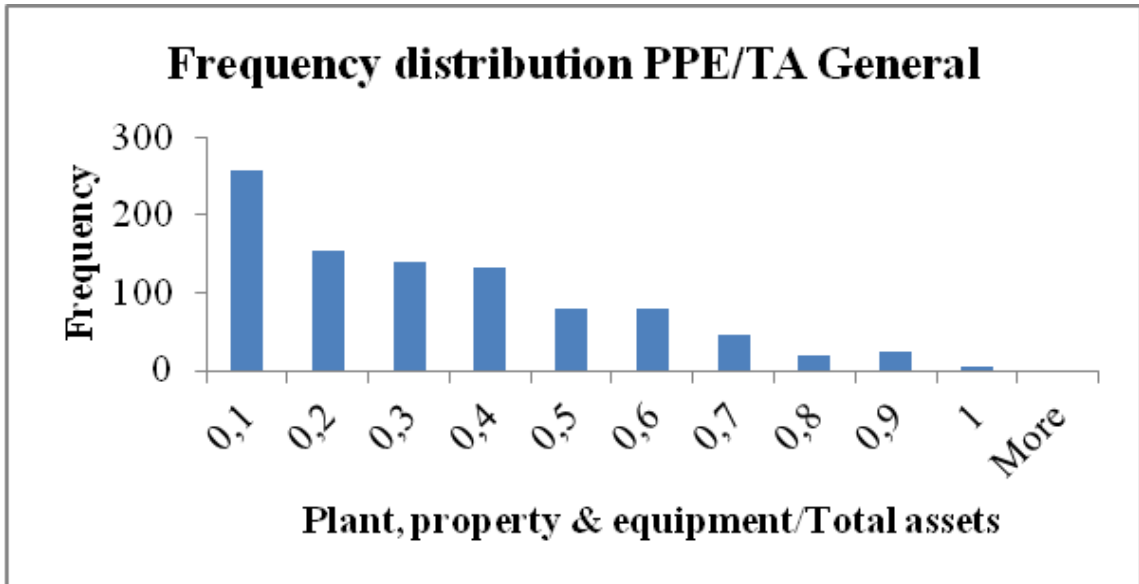
Major Group 96: Administration Of Economic Programs

Major Group 97: National Security And International Affairs

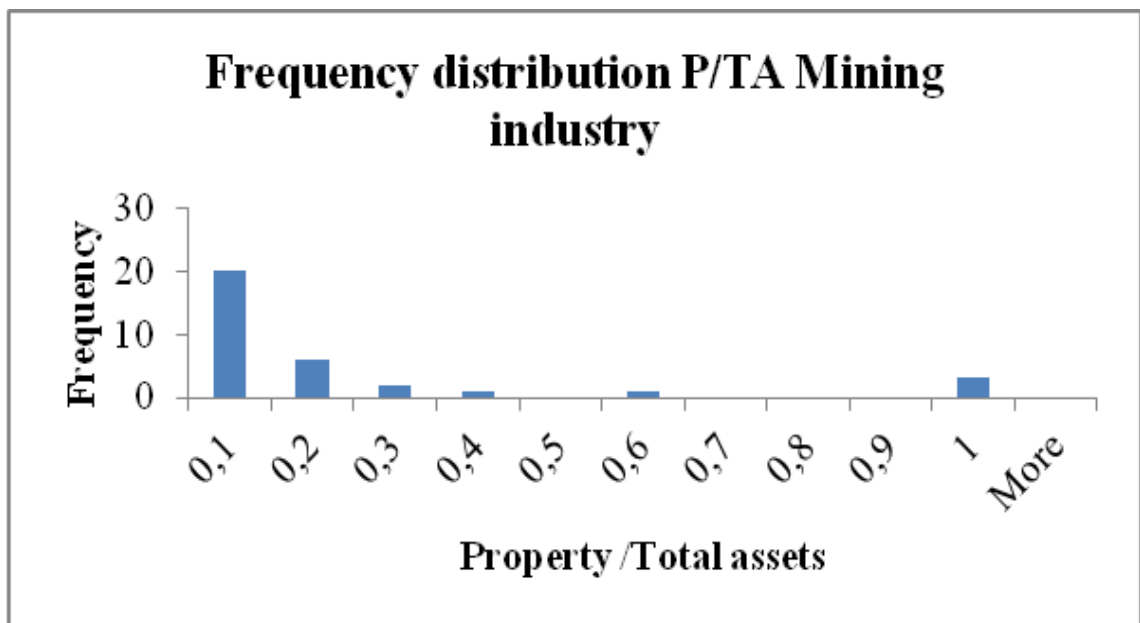
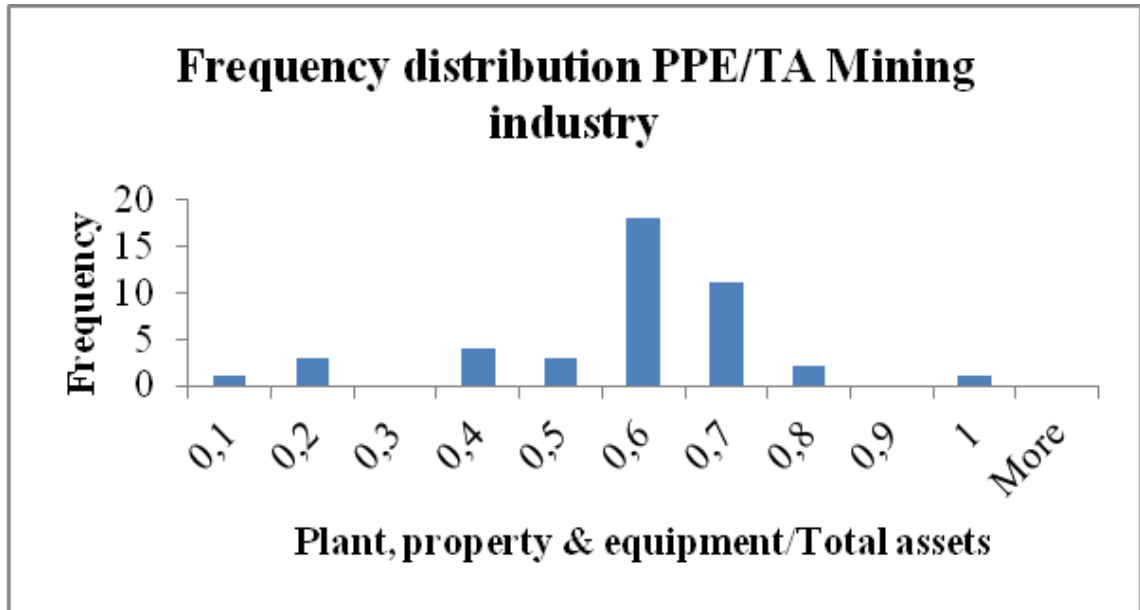
Major Group 99: Nonclassifiable Establishments

APPENDIX 4: OVERVIEW OF DISTRIBUTION HISTOGRAMS

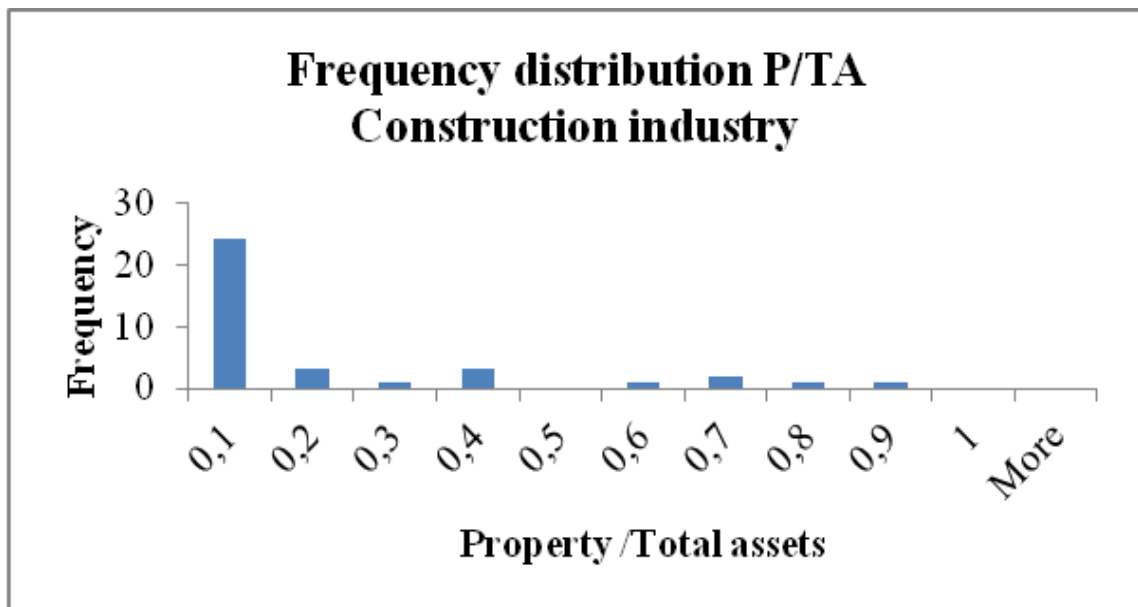
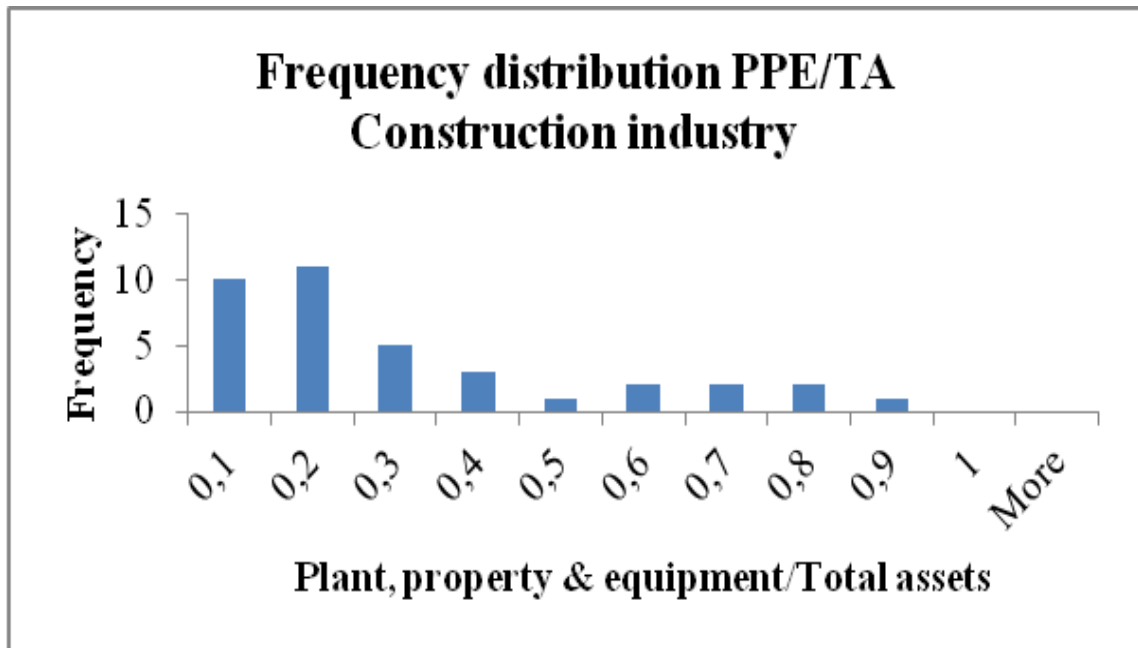
General



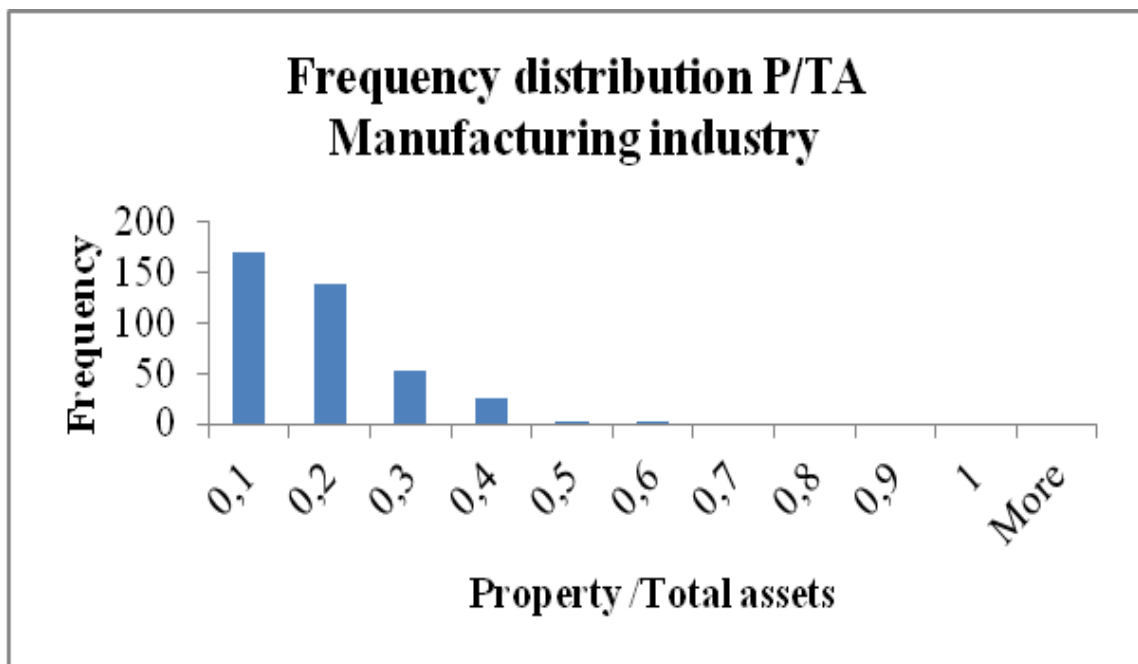
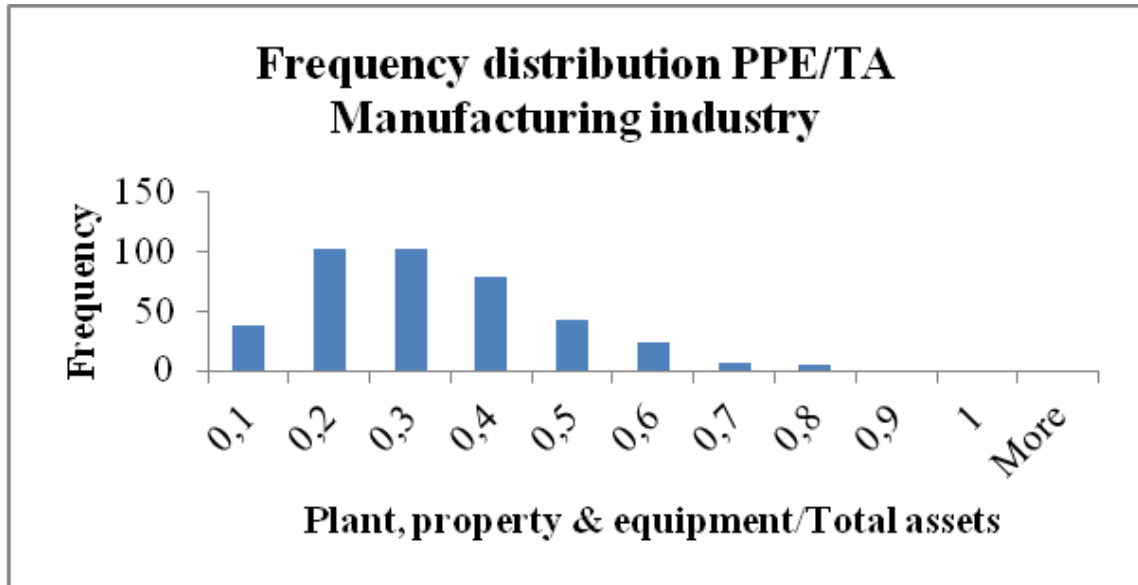
Mining industry



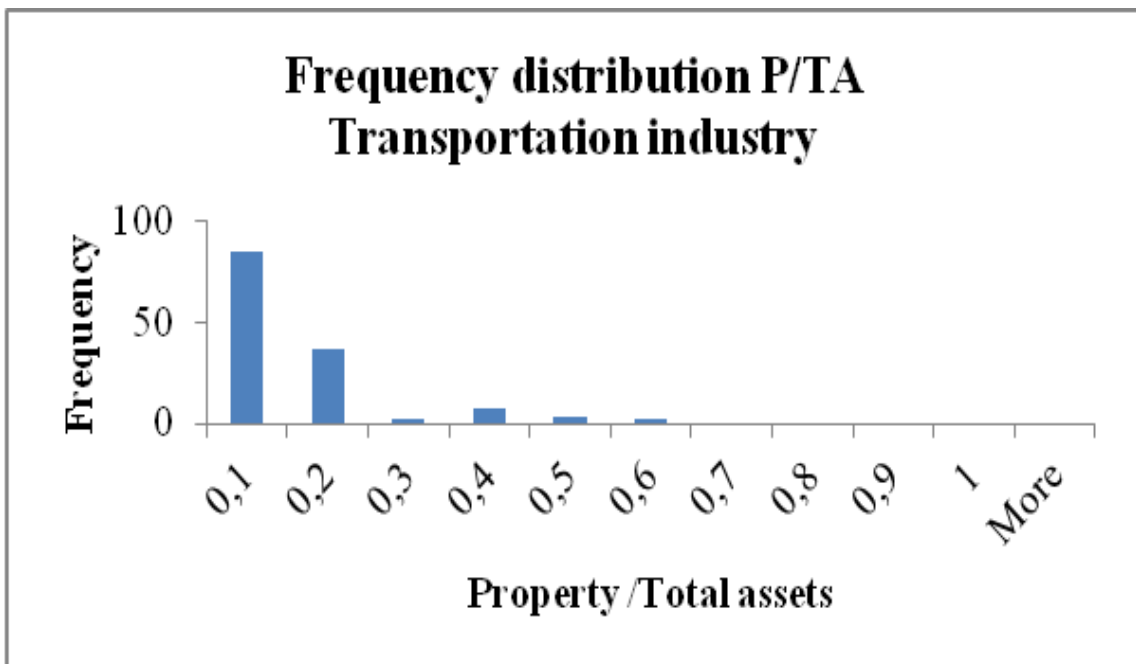
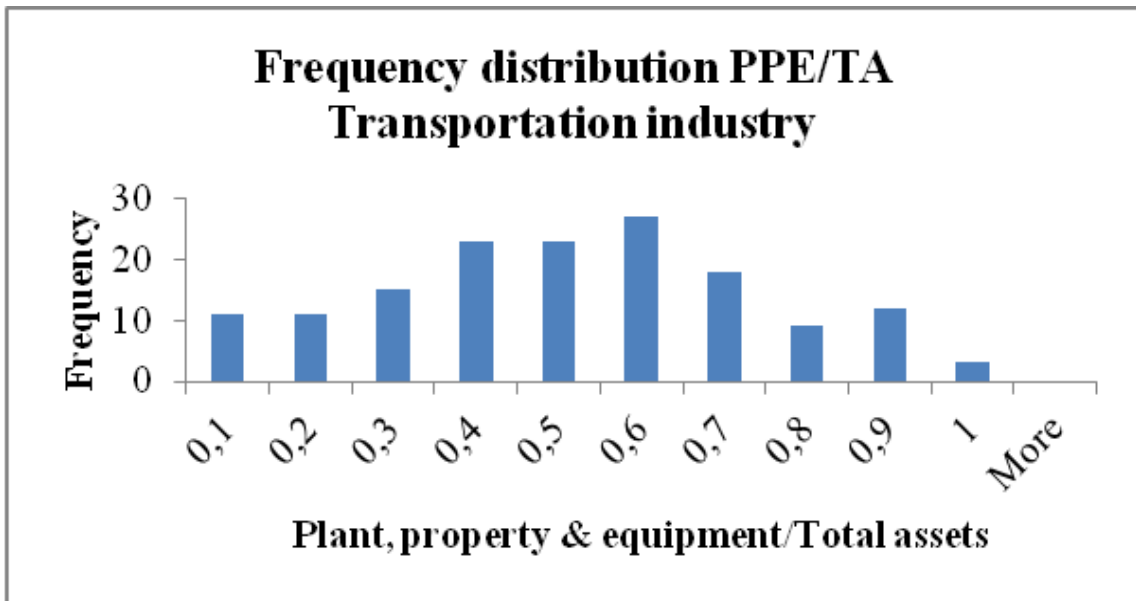
Construction industry



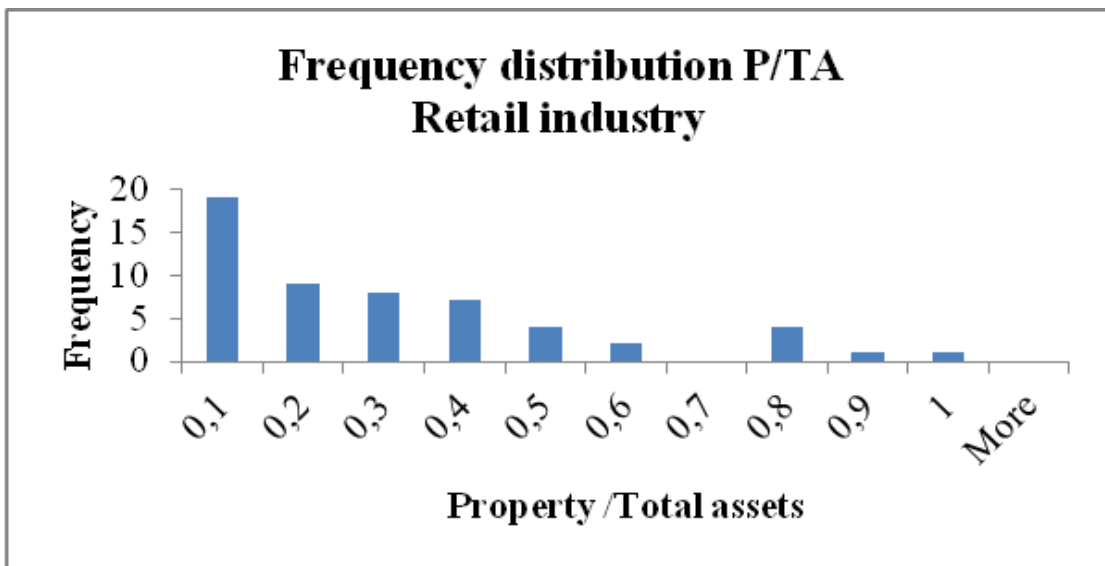
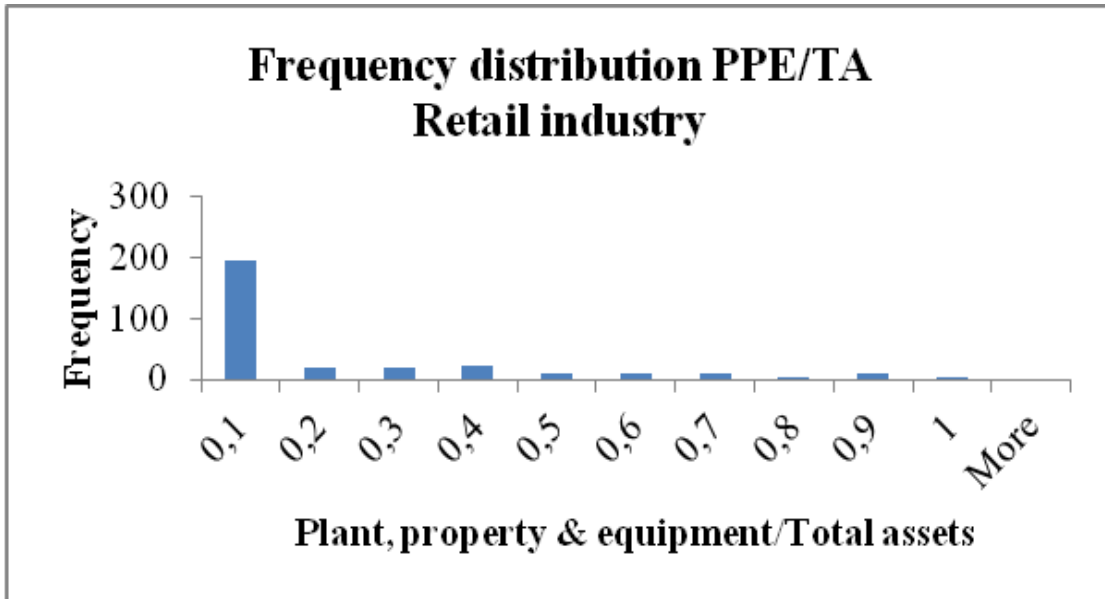
Manufacturing industry



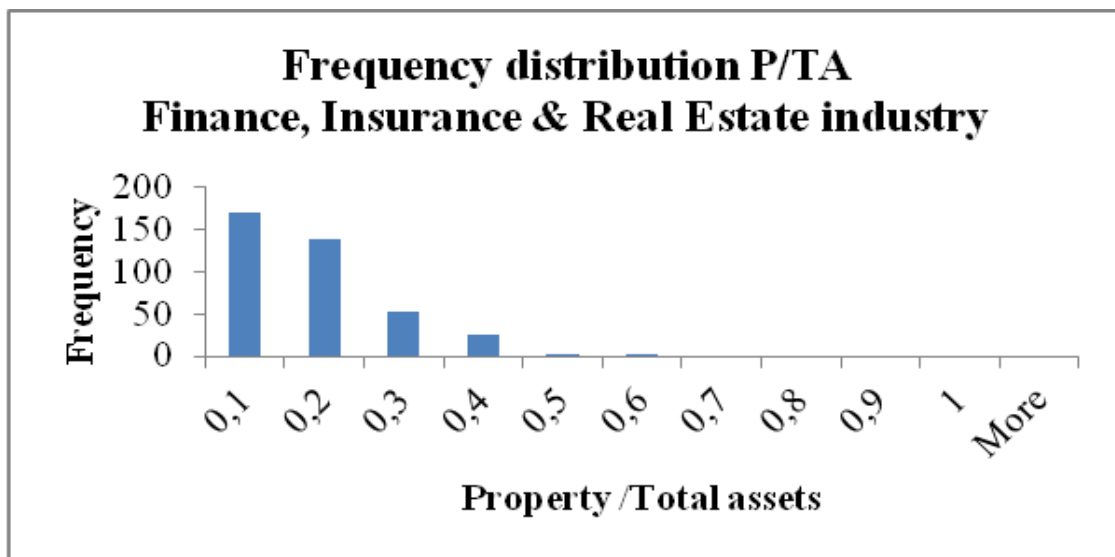
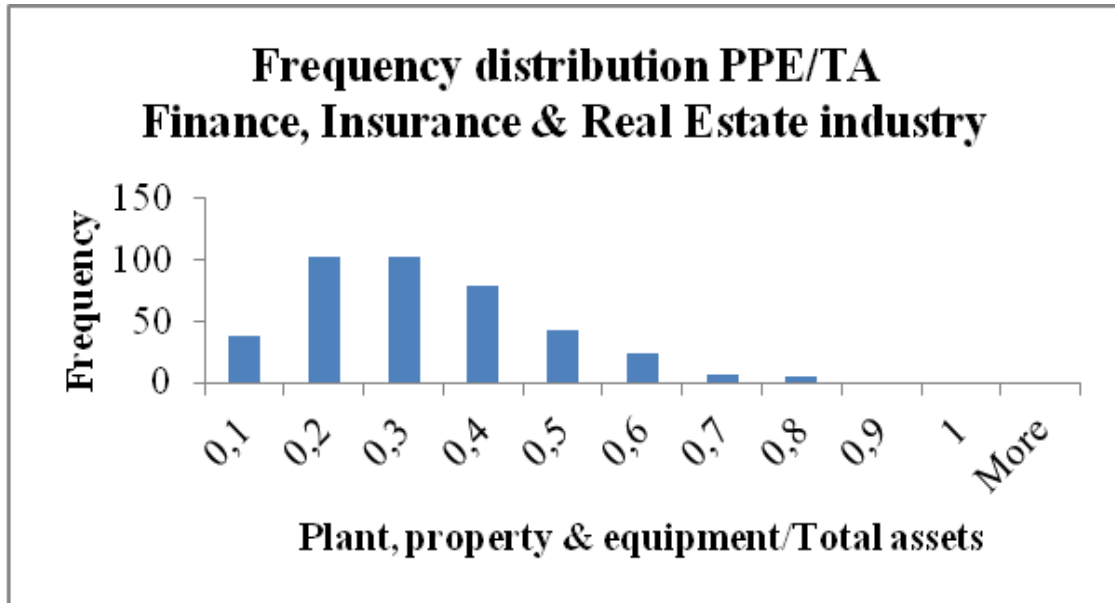
Transportation industry



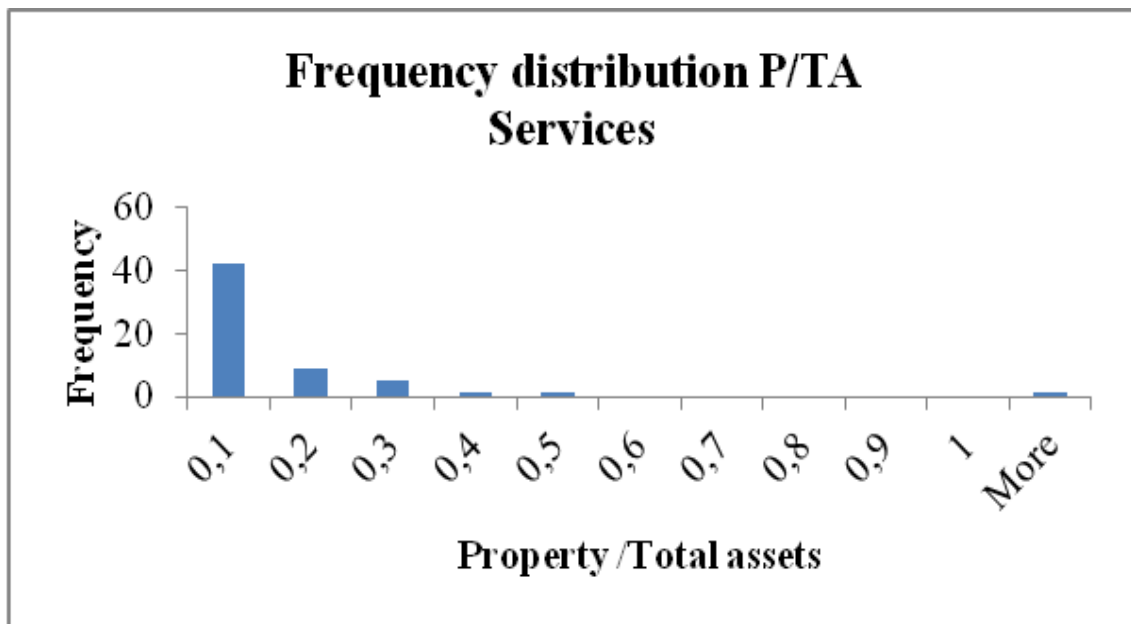
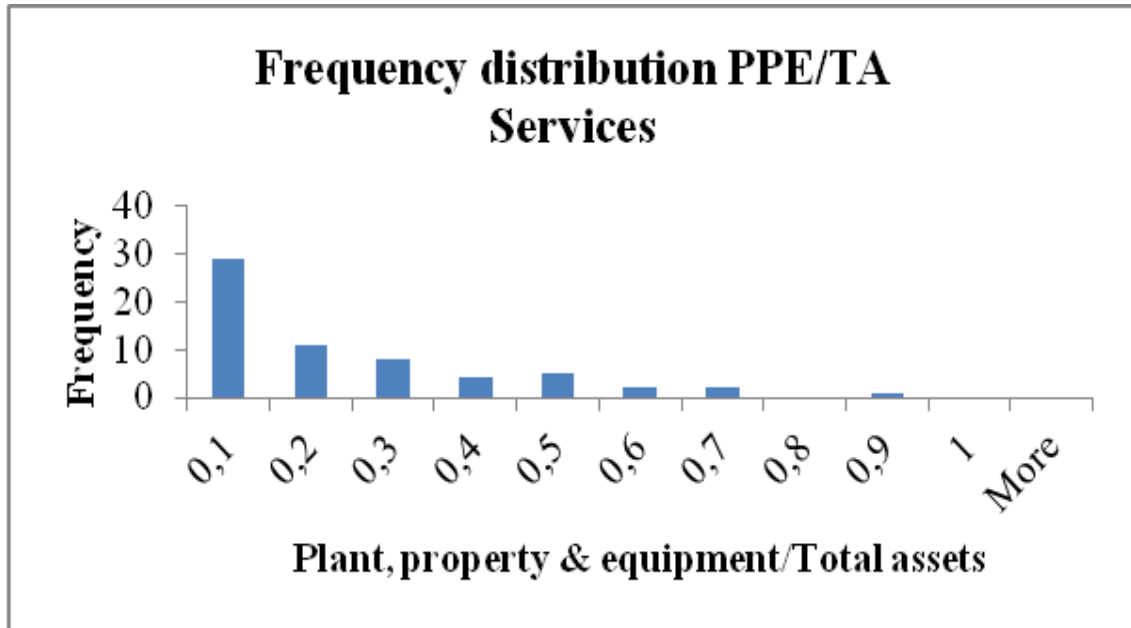
Retail industry



Finance, Insurance & Real Estate Industry



Services industry



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