MASTER THESIS, STOCKHOLM SCHOOL OF ECONOMICS

Representation Faithfulness of Investment Property in Real Estate Companies

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Abstract

The purpose of this Master Thesis is to investigate the representation faithfulness of reported investment property in Swedish real estate companies. Faithful representation is evaluated through comparing valuation estimates and realized selling prices on Swedish data from 2005-2008. Realized changes are found to be significantly higher than the estimated fair values of sold properties, on average higher than 10%. However, any conclusion regarding the degree of faithful representation is subject to the representativeness of the valuation estimate of the sold properties. Transaction intensity as a proxy for market information is found to be unable to explain the size of realized gains. Finally, indications of earnings management are found in the timing of asset sales and recognition of unrealized changes in value.

Key words: fair value, real estate, IAS 40, faithful representation, earnings management

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1 INTRODUCTION

1.1.1 Real estate and the economy

Roughly one third of all wealth is comprised of real estate. It is an asset that is used for many purposes: a factory for the manufacturer, a shopping mall for the consumer, a home for the family and an investment for the investor. As an asset, real estate is in many ways different than other asset classes. Once land has been developed and a building has been constructed, the use of that piece of land will stay the same for some time. Further, the immobility of property and the static land use makes each piece unique which is why location, location and location is said to be the three most important factors when pricing property. The segmentation of real estate in use and location, along with market conditions prevalent at the transaction date, makes it hard to compare prices of real estate in time and between locations. This is often why real estate is referred to as a heterogeneous asset. (Geltner 2007)

Resource allocation between projects is essential to maximize utility in society and lies at the heart of the market mechanism. Communicating the financial performance is central in the resource allocation process since the person who allocates capital between projects, the principal, is seldom the one putting capital to work, the agent. Given that accounting is one of the primary tools to communicate financial performance, users of financial statements need useful accounting information.

1.1.2 Accounting for investment property and the implementation of IAS 40

The usefulness of accounting information depends on the two qualitative characteristics, relevance and faithful representation. Accounting information is relevant if it influences the economic decisions of users. Representation faithfulness is achieved when the depiction of an economic phenomenon is complete, neutral and free from material error (International Accounting Standards Board [IASB/FASB] 2008).

For example, information on the market value of a piece of real estate is very relevant for investors. However, the valuation involves judgment and might not include all available inputs which will affect the accuracy of the estimated market value. On the other hand, the original cost of acquiring the land and constructing the building might be very faithful but the information have little impact on an investor's decisions.

When the European Commission (EC) approved the application of International Accounting Standards (IAS) public companies were to account for their investment property[4] according to IAS 40 (European Parliament and Council 2002). This standard provides companies with the choice of accounting for investment property at either fair value, with changes in fair value recognized in profit or loss, or acquisition cost less depreciation with a disclosure of fair value (IASB 2008). Fair value is defined by the IASB (2008) as:

> "*…the amount for which an asset could be exchanged between knowledgeable, willing parties in an arm's length transaction.*"

[4] Investment property is defined as real estate that is held for the purpose of earning rent or for capital appreciation

The fair value model was implemented by all Swedish public real estate companies at the introduction of IAS 40 in 1 January 2005 and has continued since and any subsequently listed companies have also implemented the fair value model.[5]

After the first quarter of 2005 there was a sudden increase in market risk for property shares, as demonstrated in exhibit 1-1 which plots the equity beta of Swedish publicly traded real estate companies assembled by Leimdörfer, a financial adviser on the Nordic property market, in June 2008.

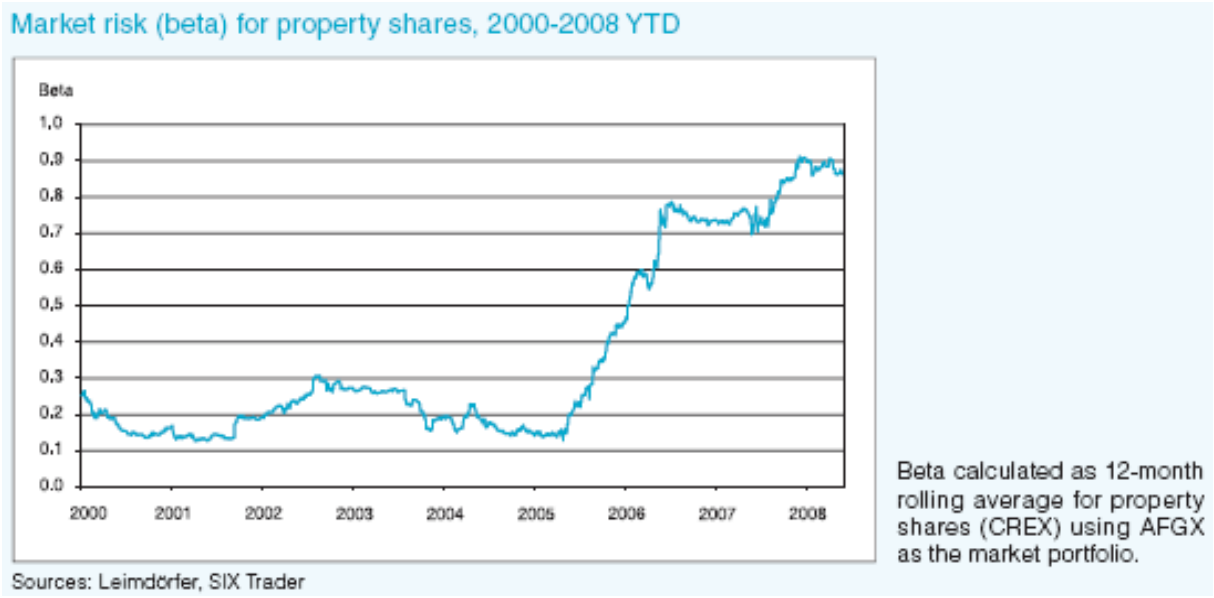


Exhibit 1-1 *Market risk (equity beta) for property shares between 2000 and June 2008. Note the change after 2005 when IAS was introduced for public Swedish real estate companies.*

While no causality has been determined, the perceived increase in risk apparently accompanies the introduction of IAS 40 in the beginning of 2005. Increases in beta risk obviously impact the diversification capabilities of investors. The increase in volatility is supported by academic research (Bengtsson 2008) and emphasizes the importance of examining how accounting information is prepared in the new regime.

1.1.3 Putting faith in faithful representation

International Financial Reporting Standards (IFRS) applies to all companies traded in regulated markets of EC member states.[6] Through the market value of real estate companies, investment property will implicitly be valued every day shares are traded. And at every balance sheet date an appraiser will try to determine a fair value of the same investment property. As such, there is a dual valuation of investment property in publicly traded companies that have applied the fair value model of IAS 40: both through the capital market and the real estate market. Surprisingly or not, these valuations are seldom consistent.[7] If

[5] According the findings of this thesis, all quoted real estate companies use and have used fair value accounting for investment property since 1 January 2005

[6] Regulation (EC) No 1606/2002 of the European Parliament and of the Council of 19 July 2002 on the application of international accounting standards

[7] See for example: Downs, Anthony, *Public, private market valuations do diverge*, National Real Estate Investor; Dec 1994; Leimdörfer & Partners (2000), "Rabatt på fastighetsaktier är motiverad"; Leimdörfer & Partners (2000), " Portföljpremier — är helheten mer värd än summan av delarna?"

perfect capital markets are assumed to exist, it is worthwhile to take a glance at accounting data to search for an explanation for this lack of consistency.

Today, as the shock waves of the financial crisis have hit the Swedish economy in full force, Swedish real estate companies have been surprisingly moderate in writing down the value of their investment property (Nordlund 2009). At the same time, independent analysts have pointed towards a fall in property value with a magnitude of 20%, which raises doubt of the valuation of investment property reported by the real estate companies (Levander 2009).

1.1.3.1 Same asset – different valuations

Data show a wide discrepancy between the companies' reported fair value, the implied valuation of the stock market and Leimdörfer's valuation of the same assets. For example in June 2008 the discrepancy was roughly 14% for the whole sample, meaning that the adviser's and the market's valuations are 14% lower than the companies' own valuation. There are also large differences in the magnitude of this discrepancy between companies. The difference between an estimate provided by Leimdörfer and the reported value range from 0% for Fabege and Balder, to +34% for Brinova. The difference between the implied market value and the reported value range from -3% for Heba, to +28% for Brinova.

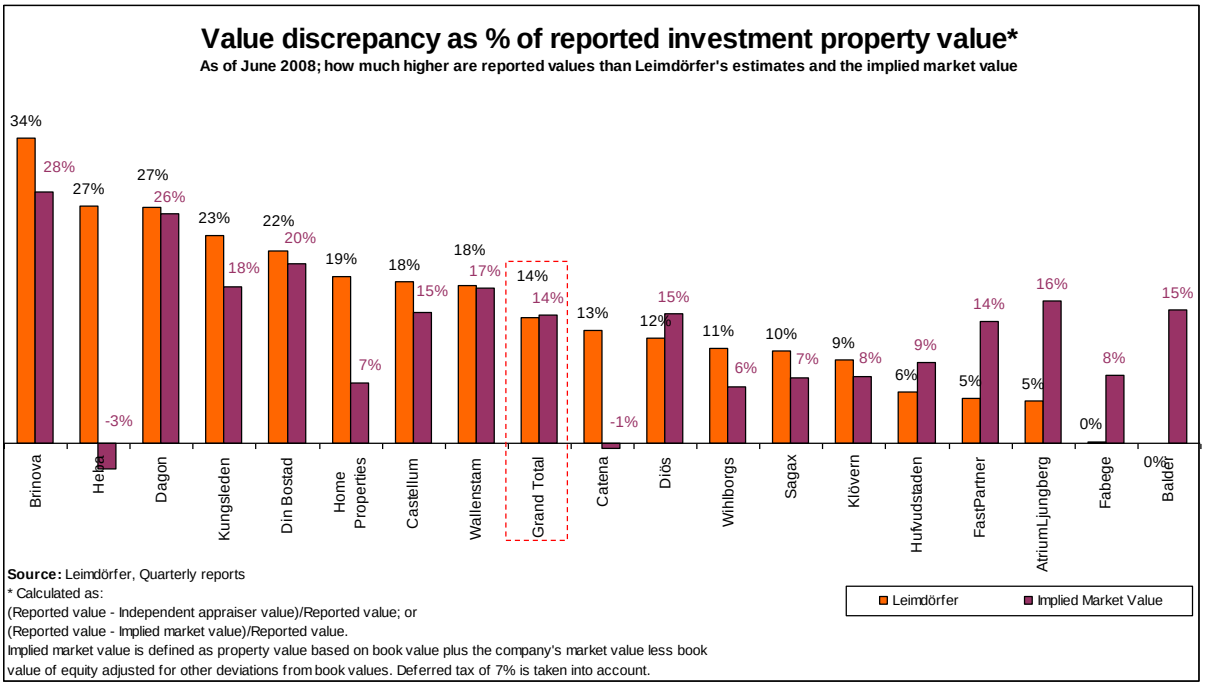
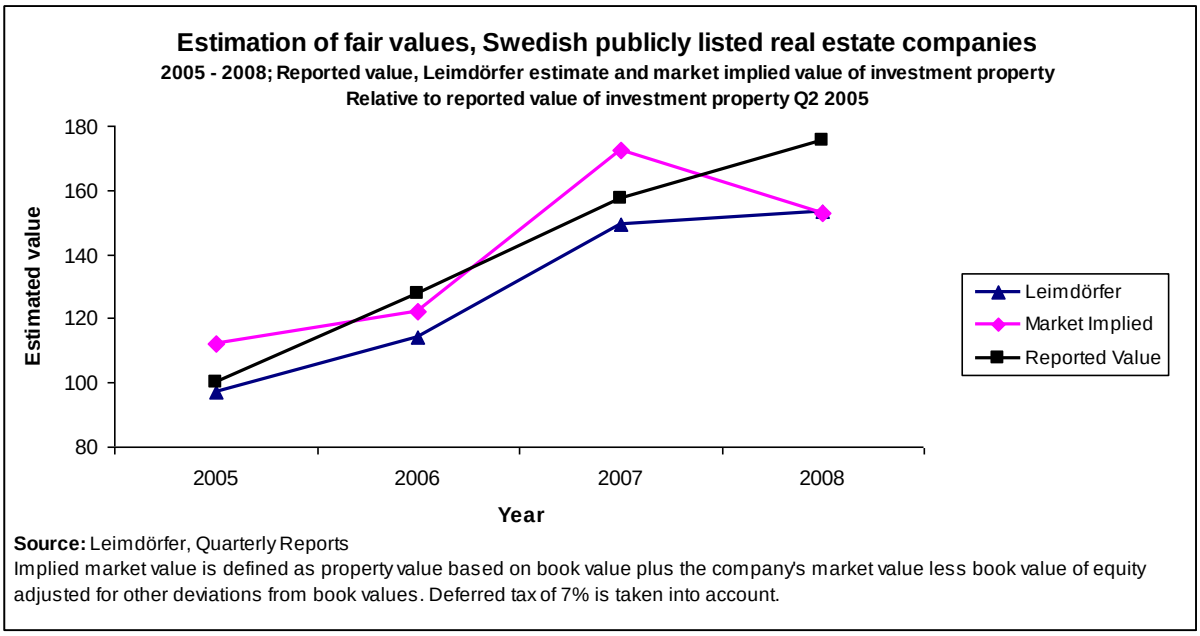


Exhibit 1-2 *Companies reported fair values compared to the real estate advisor and the market respectively. Note the 14% higher reported values of investment property compared to both valuations.*

Further, as exhibit 1-3 illustrates, a visible discrepancy has been around for some time. While not statistically confirmed, the market implied valuation appears to be more volatile than the value from Leimdörfer which in turn is more volatile than the reported value.



Source: Leimdörfer, Quarterly Reports
Implied market value is defined as property value based on book value plus the company's market value less book value of equity adjusted for other deviations from book values. Deferred tax of 7% is taken into account.

Exhibit 1-3 *Estimation of fair values by three different sources, estimated at mid-year each year from 2005 to 2008.*

While these patterns in the change of investment property fair value may well be tracking the patterns of the underlying market it should be noted that both the decision of acquiring or divesting property as well as the valuation of property is uttermost under the discretion of company management.

1.2 Purpose

The purpose of this thesis is to investigate the representation faithfulness of investment property in Swedish public real estate companies.

By examining reported and realized values of investment property in Swedish public real estate companies subsequent to the implementation of IAS 40 this thesis aims to shed further light on the representation faithfulness of investment property in these entities. Faithful representation is achieved when the depiction of an economic phenomenon is complete, neutral and free from material error and this thesis aims to examine these three factors separately.

It is a good time to scrutinize reported values in this segment of listed companies. Four years have gone since the implementation of IAS 40 and sufficient data has been generated to measure representation faithfulness statistically. Further on, as charts of macroeconomic indicators dramatically have turned south, the theme of asset valuations is more topical than it has been for a long time.

The concept of faithful representation is under development and it is an ambition of this thesis to contribute to the debate on this qualitative characteristic and how its three constituents should be interpreted when it comes to valuation of investment property according to IAS 40. In its Exposure Draft to a Conceptual Framework for Financial Reporting, IASB and Financial Accounting Standards Board (FASB) discuss whether faithful representation can be empirically measured. This thesis can be viewed as an attempt to contribute to this discussion.

The investigation of faithful representation will be structured around the three pillars that make up the qualitative characteristic of faithful representation. From these pillars the following research questions are formulated:

1.2.1 Are reported and realized values consistent?

The fair value hierarchy of IAS 40 depicts that the best evidence of fair value is given by current prices in an active market for similar property which should make the balance sheet values track the underlying property market (IASB 2008). This thesis will firstly examine the accuracy of reported values by comparing reported fair values with the realized values at time of disposal.

1.2.2 Is there better consistency with more proximity to the market?

Since the fair value hierarchy require knowledge of current prices in the real estate market it is interesting to examine whether the accuracy of reported values can be attributable to the availability of information about underlying property market. This might well be the case in a heterogeneous and information inefficient market. This reasoning says that the inputs to the valuation are not complete since companies lacking this information will not be able to undertake accurate valuations. The examination will be undertaken by examining if firms with higher transaction intensity have a better proximity to the market and thus better information about going market prices.

1.2.3 Are valuations of investment property free from bias?

The valuation of investment property has a direct impact on earnings since changes in fair value passes the profit or loss in the fair value model. If valuation data of investment property is prepared in order to achieve a predetermined result or outcome in the income statement, this would clearly be a violation against the neutrality paragraph of the conceptual framework. Due to the managerial discretion in both valuation of investment property and the timing of acquisitions and disposals, management has an ability to achieve certain patterns of earnings that they desire. It is therefore interesting to observe the treatment of realised and unrealised value changes and acquisitions and disposals with respect to their impact on reported earnings. With this in mind it is also interesting to see how different valuations of the same portfolio compare to each other.

1.3 Background

The following section will briefly go through some important background information that is necessary to continue the discussion in the continuing sections. Please note that the joint project for a conceptual framework uses the term faithful representation is used instead of reliability. It is hard to avoid using the term reliability when referring to previous discussions and although some confusion might arise in sections 1.3 and 1.4 it is the ambition of this thesis to be as consistent as possible with the joint project.

1.3.1 Relevance and reliability

A classical trade-off within accounting is between relevance and reliability. In its joint project, IASB and FASB have decided to identify present and potential capital providers as the primary user group for general purpose financial reporting (IASB/FASB 2008). In making a choice between these qualitative characteristics the decisive factor has traditionally been which capital investor you focus on. When comparing creditors and equity investors, the creditors are seen as more conservative with an emphasis on reliability since they are concerned with immediate liquidity and long-term asset position of the company. They seek assurance of the payment of interest and the capability of refunding the obligation at maturity. On the other hand, equity investors bear the residual risk in the enterprise and seek assurance

of the long-term earning power, ability to grow and pay dividends (White et al 2003). Thus, the equity investors should be the most interested in information about the current market value of the assets since their interest will fluctuate more relative to creditor's interest, with this value. With the implementation of IAS 40, fair value is disclosed irrespectively if the fair value model or the cost model is chosen, this has put an emphasis on relevance and the equity investors' interest.

1.3.1.1 Current definitions of relevance and faithful representation

Accounting information is relevant if it influences the economic decisions of users. Faithful representation is achieved when the depiction of an economic phenomenon is complete, neutral and free from material error (IASB/FASB 2008).

The exposure draft to a conceptual framework says that a depiction of an economic phenomenon is complete "*…if it includes all information that is necessary for faithful representation of the economic phenomena that it purports to represent.*" (IASB/FASB 2008).

Neutrality is defined as "*…the absence of bias intended to attain a predetermined result or to induce a particular behavior.*" It might be easier to interpret neutrality by knowing what is not neutral. Financial reports are not neutral if: "*...they influence the making of a decision or judgment in order to achieve a predetermined result or outcome.*" Particular emphasis should be paid to the wording "*predetermined result*" – if accounting information influences decisions it is indeed relevant which is a goal of the conceptual framework (IASB/FASB 2008).

To be free from material error financial reports must *"...be based on appropriate inputs, and each input must reflect the best information available"*. Most accounting information involves estimates which incorporate management's judgment. Even if these estimates should be complete and neutral it would be desirable that the estimates achieve some minimum level of accuracy in order to be a faithful representation of an economic phenomenon (IASB/FASB 2008).

1.3.2 The value concept

Central to accounting in real estate companies is the value of investment property. The concept of value is an elusive concept because the term "value" depends on value for whom and for what purpose the asset is used. To make the term value useful it has to be related to something; a market, the return of the asset or to costs associated with acquiring the asset. A market related value can be either market value, likely transaction price or liquidation value, while a return related value can be investment value or value in use, and a cost related value can be for example replacement cost or historical cost (Persson 2008). Essentially these measures are respectively: a measure of opportunity costs, a measure of the value in use for the company or a measure of value already given up to acquire the asset, or lastly the value needed to reacquire the asset.

1.3.3 Definition of fair value/market value

To estimate fair value, IAS 40 provides a hierarchy between valuation methods based on the verifiability of the estimate. For assets that have an active market the assets should be "marked-to-market" by using the market value of the asset. For example, if a company owns shares in a publicly listed company, the price on the stock market should be applied to the company's owned shares. The European Valuation Standard (EVS) set forth by the European Group of Valuers' Association (TEGoVA 2003) defines market value as:

> "*Market value is the estimated amount for which an asset should exchange on the date of valuation between a willing buyer and a willing seller in an arm's length transaction after proper marketing wherein parties had each acted knowledgeably and without compulsion."*

This definition is very similar to the shorter definition of fair value used in IAS 40 (IASB 2008, §5):

> *"Fair value is the amount for which an asset could be exchanged between knowledgeable, willing parties in an arm's length transaction."*

If there is no active market the standard prescribes that the asset should be valued according to the market price of similar assets or as a third option use a 'mark-to-model' approach. The two first methods are market related while the third method is primarily return related. The conformity that the estimated value is indeed a level at which an exchange between knowledgeable parties could take place, differs between these three methods. Thus, it is relevant to demonstrate the hierarchy between them.

1.3.4 How real estate is valued

The valuation of investment property should be done each quarter and can be done through either internal or external valuation. Two major methods are used: the capitalization rate method and the discounted cash flow (DCF) method. The capitalization rate is derived from comparable sales of similar properties while the required return in the DCF valuation should be based on long term expectations of risk-free interest, inflation and asset risk. However, in practice short-term market fluctuations often influence DCF valuations (Persson 2008).

As there is considerable judgment involved in estimating fair values of real estate, there is a voluminous amount of literature behind the estimation procedures. SFI/IPD writes that many variables are left out to the appraiser in determining the value of investment property (Svenskt fastighetsindex 2007). They further recommend the comps model[8] ahead of the cash-flow based[9] valuation when there is a considerable sample of previous transactions available. This follows the principles outlined in the standard (IASB 2008).

The typical appraisal assignment is to produce the best possible estimate of the market value of a single, individual property and the appraiser must balance the advantage of a larger number of comps[10] (a measure of accuracy) with the disadvantage of drawing comps from further in the past (a measure of timeliness) (Geltner 1997). The principle behind using comps, before using a discounted cash flow technique, follows also from the advice of the standard setters (IASB 2008).

[8] The comps model determines the fair value of the asset by looking at completed transactions of similar assets at a free and open market. See i.e. SFI/IPD or corporate finance schoolbooks for more information.
[9] In a cash-flow model the fair value of the asset is determined by projecting in- and outflows of cash during the explicit forecast period and projecting a residual value at the end of the forecast period and then calculating the present value of the in- and outflows and the residual value by applying an appropriate discount rate. See SFI/IPD or corporate finance textbooks for more information.
[10] I.e.: "comparable transactions"

1.3.4.1 Example of fair value accounting effects in the financial statements

Since all Swedish publicly listed real estate companies use the fair value model in IAS 40 this section will briefly go through an example of this accounting practice. Picture that the following events occur (disregard from tax effects):

I. A company acquires an office building for SEK200 MM with a yearly rent of 10 with the total consideration paid in cash. The market requires a yield on this type of property is 5% so the property is acquired at market value. There is no income statement effects at the acquisition date;

II. The company invests SEK10 MM in a new air-conditioner;

III. Due to favorable market conditions the firm has indications that the required yield has decreased on this kind of property. Through knowledge of recently made transactions management estimates the required yield to be 4,33% compared to 5% at the beginning of the period. The value impact on the building is a positive SEK30 MM;

IV. The company disposes the building at the end of the year at SEK250 MM corresponding to a realized change in value of SEK10 MM compared to the recorded book value. The price results in an implied yield of 4%.

	Acquisition (I)	Investment (II)	Change in value (III)	Disposal (IV)
Income statement	-	-	+30	+10
Balance sheet				
Inv. Property	+200	+10	+30	-240
Cash	-200	-10	-	+250
Total Assets	0	0	+30	+10
Equity	-	-	+30	+10
Cash flow statement				
CF operations	-	-	-	-
CF investing	-200	-10	-	+250

Exhibit 1-4 *Illustrative example of fair value accounting for investment property*.

1.4 Previous research

The research that has been conducted on the use of fair value has been focused around relevance and faithful representation of accounting information as well as the trade-off between them. Studies on relevance usually try to relate the release of accounting information to its impact on the stock price in order to measure the decision usefulness of the information. Studies on representation faithfulness of accounting values have been focused on issues regarding earnings management, often with a comparison of fair value vs. historical cost. Adjacent research has been conducted within the field of finance and has mainly related to the valuation techniques for real estate and how it can be related to index construction. Furthermore, there is considerable research around the implied valuation of investment

property by the market and there has been an intensive discussion around whether this implied valuation can be used in the appraiser's valuation of investment property.[11]

To evaluate relevance as well as the implementation of the new standard, researchers have predominantly focused on the change in value relevance of accounting data and thus related the release of accounting information to the variability in stock prices.

Bengtsson (2008) investigates the implications of IAS 40 for Swedish investment property companies and the relevance of their accounting information. He finds that the recognition of unrealized gains and losses from changes in fair value of investment property has increased volatility in the affected companies' share prices, book equity and has also increased the correlation between reported equity and share prices. His conclusion is that IAS 40 has increased the relevance of accounting data from Swedish investment property companies (Bengtsson 2008) and this seems to be in-line with the results from international research.

Bengtsson (2008) further recognize that those who make investment decisions by looking at the cash generating ability of real estate companies will now pay an increasing amount of attention to the balance sheet. This since, the balance sheet will be a valuation of the future cash flows from the assets with the implementation of IAS 40 and the use of the fair value model (Bengtsson 2008).

Danbolt and Rees (2008) define "…*relevance as explanatory power; bias as a predictable difference in the relationship between accounting and market values; and reliability as the precision of fair value estimates*…". In their contribution to the relevance/reliability debate, they compared historic cost (HC) and fair value accounting (FVA) in the British real estate and investment fund industry. Both industries have the majority of their assets marked to market but as the valuation of real estate is arguably more subjective than that of investment funds, the authors are able to contrast fair value accounting in a near ideal setting (investment fund industry) with one where it remains important (the real estate industry), but where valuation difficulties may permit bias.

Danbolt and Rees (2008) find that FVA for the real estate sample is considerably less value relevant than for the investment companies. Further, they observe significantly fewer negative fair value incomes for both industries and significantly fewer small losses for the real estate firms than they would expect given the associated share price movements. Regarding reliability they find that bias, or earnings management, is an explanation for lacking reliability.

Bartov (1993) explored whether managers manipulate reported earnings through the timing of sales of long-lived assets and investments by taking advantage of the acquisition-cost principle underlying the accounting valuation of assets. Though, he also points out that a fair value model is vulnerable to earnings manipulations because net income is materially affected by management's opinion on the fair values of the assets involved.

The topic of reliability in fair value estimates of investment property was also elaborated on by Dietrich et al (2001). They found that appraisal estimates understate actual selling prices by a median of six percent but are on the other hand considerably more accurate measures of selling price than acquisition cost accounting. According to Dietrich et al, this conservative bias of six percent might reflect:

[11] See for example Geltner, David (1997) "The use of appraisals in portfolio valuation and index construction" Journal of Property Valuation & Investment, Vol. 15 No. 5, 1997, pp. 423-447

- Appraisers' and auditors' incentive to undervalue property to protect themselves from litigation if property is sold for less than its appraised value;
- Price increases of assets sold since the balance sheet date; and
- Managers' incentive to undervalue property to increase reported earnings or minimize the likelihood of reporting a loss when a property is sold.

Dietrich et al (2001) says that since *"…appraisers rely on subjective assumptions and exercise considerable judgment, managers may have discretion to manipulate property appraisal estimates.*" They highlight three ways of managerial manipulation using UK GAAP for investment property and managers' discretion in:

- Selecting among accounting alternatives for investment property;
- Selecting properties to be sold; and
- Exercising influence on appraisers.

Their investigations of managerial discretion over fair value reporting revealed that managers time asset sales to smooth reported earnings changes, smooth reported net asset changes and boost fair values prior to raising new debt.

1.5 Filling the gap

Having previous research in mind, this thesis aims to contribute to the continuous discussion around the trade-off between relevance and faithful representation by examining the representation faithfulness of investment property reported in Swedish publicly traded real estate companies.

By analyzing faithful representation of fair values of investment property this thesis contributes to the topical discussion of how to empirically measure representation faithfulness.

With four years of accounting information in accordance with IAS 40 it is now possible to statistically examine the information. Further on, the theme is highly topical due to the turbulence in the financial markets and the dramatic movements in asset prices.

Much previous research on faithful representation has emanated in the US and the UK, probably due to the extensive databases prevalent in the countries. There are some studies on the implementation of IAS 40 in Swedish public real estate companies. However, only a scarce volume of these studies are quantitative and also have a focus on relevance. This thesis is however a quantitative study on faithful representation and should thus be useful to users of accounting information on investment property.

2 METHOD

2.1 Research approach

There are different approaches on how to draw conclusions when undertaking research. Either existing concepts or theories are used to interpret and explain empirical findings or empirical findings are the starting point of research from which new theories are discovered (Eriksson and Wiedersheim-Paul 2006).

This thesis aims to evaluate the faithful representation of reported fair values among Swedish listed property companies and uses existing theories and prior research as a foundation to explain the empirical findings. When concepts and theories are used as the starting point the deductive research approach is applied. According to Jacobsen (2002) this approach imply that theory and earlier empirical studies within the research area creates a foundation of what reality looks like and thereafter empirical findings study a phenomena from this perspective. This method has the advantage of being more grounded in accepted assumptions from prior research, however it has the risk of breaking less new ground since the research is made within an already existing framework.

The alternative research approach would have been the inductive approach using empirical findings as starting point rather than theory. The method is explained by Halvorsen (1997) as a research method where empirical data are gathered without any interpretation from existing theory and further processed into new theory. Since the fair values reported by Swedish real estate companies have not been tested in this way before, this thesis aim to test and explain the resulting fair values of the implementation of IAS 40 rather than to formulate new theory from the findings.

2.1.1 Methodology approach

To draw conclusions about faithful representation in Swedish publicly listed real estate companies subsequent to the implementation of IAS 40, it is valuable to study all companies. There are two different methodology approaches, qualitative and quantitative, to apply when gathering and analyzing empirical data in research studies. These two approaches differ in their data collection process and should be applied at different occasions depending of the aim of the research (Eriksson and Wiedersheim-Paul 2006). The quantitative approach is used when numerous observations from a population are processed and tested statistically (Eriksson and Wiedersheim-Paul 2006). The qualitative approach on the other hand is used when studying a phenomenon more in depth with fewer observations. Through explorative interviews respondents are given the opportunity to be subjective and empirical data is often specifically gathered as primary data to a certain research (Holme and Solvang 2003). Eriksson and Wiedersheim-Paul (2006) argues that a deductive research approach is often carried out with quantitative data gathering. This thesis uses a quantitative research approach due to the limited scope to conduct a complete qualitative study of the total sample. A quantitative approach is also preferable in order to maintain objectivity towards the investigated values and minimize any inclusion of potentially subjective respondents.

2.1.2 Selection of study objects

To be a valid study object for this research, the following criteria have to be fulfilled:

- *Time period:* The time period for this study is limited to the period from the implementation of IAS 40 in 2005 until end of 2008. The company must have shares traded on a market in Sweden during part of the time period from the first quarter 2005 to the fourth quarter 2008 or the entire period;

- *Real estate focus:* Management of investment property must be the core business of the company. Many companies own real estate for either their own use or own investment property in addition to another business. This thesis studies real estate companies only. To capture this criterion the companies must be classified by Leimdörfer as a Swedish real estate company at some point during the time period (Leimdörfer 2004, 2005, 2006, 2007, 2008);

- *Fair value requirement:* Fair value accounting according to IAS 40 must be implemented in the quarterly reports; and

- *Transaction activity requirement:* One or more divestments of property must have been made during the time period.

According to the criteria above nineteen companies can be classified as listed real estate companies with transaction activity during the years 2005-2008. All of these companies report fair value and is thereby selected as study objects for this study. These companies are displayed in exhibit 11-1 in the appendix.

Data used in this study was collected through quarterly reports from the respective companies. All of these companies have not been traded on a Swedish marketplace throughout the entire time period. Therefore the total number of quarterly reports examined is less than the maximum 304 which would correspond to nineteen companies with four full years of quarterly reporting.

To be able to compare the data between companies, relative numbers in percentages are used. One drawback in using this method is that the computed number can be sensitive to when the nominator has a value close to zero. For example, a realized gain of 10 MSEK with a reported book value of 1 MSEK becomes 1000 % while the same gain on a reported book value of 100 MSEK becomes 10%. The computed averages can be distorted by these smaller properties that are not representative for the whole sample and therefore extreme values are removed. Data material without extreme values has been argued to contribute to better and more reliable results (Osborne 2008).

Data removal is performed in two stages. In the first stage ocular investigation of data points that are clearly illegitimate to use are removed (Osborne 2008). The second stage of data removal of extreme values uses the first (q_1) and third (q_3) quartile of the data sample and defines extreme value as:

Extreme value $\geq [q_3 + 3 \times (q_3 - q_1)]$

Extreme value $\leq [q_1 - 3 \times (q_3 - q_1)]$

2.2 Source criticism

It is important that research findings are perceived as of high credibility. Thurén (2003) argues that criticism of sources, as a method, gives the reader an opportunity to judge the trustworthiness in the author's statements about reality. To enhance this perception to the reader relevance, validity and reliability will be further discussed (Eriksson and Wiedersheim-Paul 2006).

2.2.1 Tendency critique

Tendency criticism examines the question whether the sources of information in this thesis have special interest in the data material held for public or whether it can be seen as objective

descriptions of reality. Eriksson and Wiedersheim-Paul (2006) support this argument saying that tendency criticism must be examined in order to understand which self interest the information provider has. Since data material in this thesis is collected from quarterly reports of Swedish real estates companies having pressure to deliver results to their owners there is a risk that figures are declared not as objective as they should according to theory and normative rules but rather subjective which could obstruct getting correct data. This argument was to some extent also confirmed during the data collection phase since some real estate companies seemed to be reluctant to facilitate the understanding of the fair values of the sold properties during the quarter compared to other companies who facilitates the understanding reported items by disclosing more information. On the other hand, Swedish legislations require public companies to have external auditors monitoring reported yearly figures of the company and quarterly reports are in the interest of and analyzed by the public so thereby figures displayed by the studied companies are valid for the purpose of this study.

2.2.2 Validity

Bryman and Bell (2003) and Eriksson and Wiedersheim-Paul (2006) argues that it is of importance that conclusions drawn from research are valid. A strong validity, they argue, implies that what is empirically measured in the research study is also what was intended to be measured. Osborne (2008) supports this saying that in a quantitative research it is of importance to have "*...truth value, applicability, consistency, and neutrality...*" in the data examined. To validate the research findings in this thesis established sources of theory and legitimate known methods on how to measure the results has been described in this chapter and used in the research. To be able to draw conclusions from a sample regarding an entire population it is important that the sample is representative for the population the sample is taken from. To validate the conclusions representativeness is thoroughly discussed in the conclusion section.

2.2.3 Reliability

High reliability regarding the method used according to Eriksson and Wiedersheim-Paul (2006) is fulfilled when it is independent of its user. High reliability hence imply that a certain research, if correctly methodologically explained, should be replicable and display the same result if conducted several times (Bryman 2003). Since this thesis study compiled data from quarterly reports that to some extent further has to be subjectively analyzed one can question whether the study is of high reliability and if the same results would have been achieved if the study were carried out a second time. Identified risks include incorrectly entered data in to the data base and subjectively interpreted estimates of fair value numbers. In order to increase the reliability and trustworthiness of the data as well as minimizing data sampling error several phases of data collection has been performed:

1. First round collection of compiled data from all 264 quarterly reports;
2. Second round collection of compiled data from all 264 quarterly reports independently from the first collection phase;
3. Audit and correction of data regarding discrepancies found in the data collected in phase one and two; and
4. Benchmark of company quarterly reported accumulated data during one year with the annual report of the company the same year (this has not been able to perform in 2008 since no yearly report was official at the time of data collection).

With this precautionary data gathering the reliability of the data used can be seen as high since this data should be replicable if gathered with the same approach.

3 THEORY

3.1 Exit price accounting and zero profit

According to Godfrey et al (2003), fair value is essentially what an asset would be worth in another use estimated by what others would be willing to pay. In theory, by relating the performance of the company to what others would be willing to pay to utilize the same asset you also arrive at management's ability to add 'value' or purchasing power of net assets in excess of other uses. The investment value, or the asset's value in use in operations for the company, can be both higher and lower than the market value. Therefore the use of fair value has been criticized for not representing the assets' value in operations and for putting too much focus on liquidating the company instead of acting as a basis for decisions regarding the manager's performance (Godfrey et al 2003).

Weston (1971) argues that this makes the information irrelevant if the company plans to continue in business. Furthermore he argues that the measurement of transactional profit becomes useless since the effective profit from sale of assets would be zero since all profits have already been accounted for in the changes of fair value. Other authors have highlighted the comparability made possible by the use of fair value when it comes to comparing balance sheets across companies where previously almost identical properties could have different values depending on when they were bought (Godfrey 2003).

The application of fair value accounting should cause the mean profit/loss to go towards zero since changes in market value would be incorporated in the reported value as discussed in the background section. However there may be other reasons for the fair value profits to deviate from zero and these will be elaborated on below.

3.2 Temporal differences between valuation date and sale

It is reasonable that there are some changes in the fair value of the asset during the period between the balance sheet date and the point-of-sale due to both macroeconomic trends (i.e. interest rate changes) and asset specific effects (i.e. broken pipe). However these effects on realised gains should be quite small given that properties are valued at the end of each quarter. Given no timing of assets sales[12] it would be reasonable to assume that properties are sold on average 1,5 months (in the middle of the quarter) since the last valuation. If prices would either increase or decrease by 12% on a yearly basis the effect on a single sale would be c. 1,5% on a 1,5 month basis and c.3 % on a full quarter basis (i.e.: the valuation is made 31 December and the asset is sold 31 March).

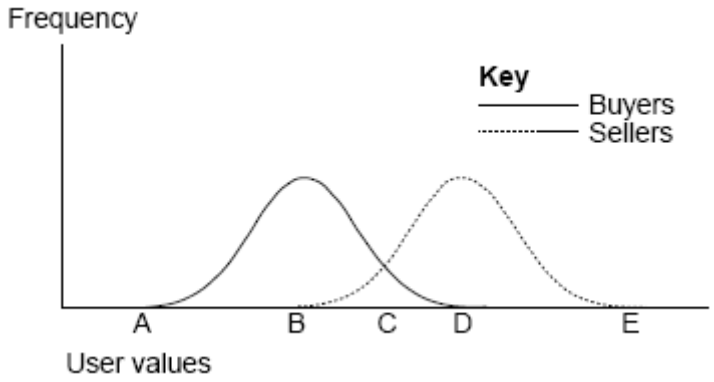
3.3 Information and values in real estate markets

The following is an example of certain market characteristics that arise in a setting with information inefficiency. Firstly try to consider a certain type of property of which there are many of. There are also many different potential owners who are able to extract differing cash-flows from this property. The heterogeneity of potential owners will create a distribution of "usage values" which is the maximum price a buyer would be willing to pay for this property if they had to (Geltner 2002). The frequency distribution of usage values is illustrated in exhibit 3-1. It can here be interpreted as the price per square meter for investors

[12] I.e. manipulation of earnings. In this case it is reasonable to assume that sales would be more frequent later in the quarter when a degree of certainty can be established on the final P&L ex ante the transaction. Any transaction would then be undertaken to reach pre-established targets or a consensus forecast by analysts.

doing valuations on a multiple basis or the required yield, which is perhaps more relevant for companies using a cash-flow based valuation.

Exhibit 3-1 *Frequency distribution of usage values for buyers and sellers of a certain type of property. Any buyer would acquire property at a price below A and any seller would sell the property at a price above E.*



If buyers and sellers randomly find each other we would be able to observe transactions between B and D in exhibit 3-1. If usage values of buyers and sellers are known in this market, C is the value at which the market would clear – the equilibrium price – or the price where there are just as many willing sellers as willing buyers (Geltner 2002).

While not perfect, property markets are still active and generally consist of privately brokered transactions. Publicly made transactions for similar kinds of property gives potential market participants some knowledge about the equilibrium value or a range around it. Such knowledge will aid buyers and sellers to determine their "reservation price": the price at which they would stop searching for a willing partner and begin to trade. Reservation prices will cause the distributions in exhibit 3-1 to become tighter around the midpoint of the overlapping distributions, a function of the market learning about itself. The easier it is to observe transaction prices the tighter and closer to C will the reservation price distributions be. The extreme case approximately occurs in the stock market where both sides collapse into a single market-clearing price. The value C is often what the appraiser tries to estimate and what is defined as the "market value".

Knowing that exhibit 3-1 only displays a snapshot of the property market at a single point in time, any observed transactions would merely be drawings from a random distribution. Any of these drawings, or the average of the drawings, would not necessarily equal C. On the other hand, knowing that the average of the observed transaction prices is an unbiased estimate of the true market value, the more estimates there is included in the average, the more precise will the estimate be (Geltner 2002).

3.3.1 Noise and inertia in information inefficient markets

Since private asset markets have unique and infrequently traded assets without public disclosure of price, these markets are less information efficient than public securities markets. Thus, asset market values will be noisy and exhibit inertia. The manager might extract the following opportunities due to this market inefficiency (Geltner 2007):

- Noise (imprecise observations of the market value): if the manager does his "homework" well and negotiates smartly he may acquire properties below the equilibrium value (since the equilibrium value is hard to know in the private market); and

- Inertia ("sluggish prices" – do not fully adjust right away to reflect news): by analyzing the market and its trajectory, the predictability of asset prices will give the manager an ability to adopt a market timing strategy and buy low and sell high.

If the manager has a competence of undertaking these strategies in a suitable fashion, it would be expected that he realises profits even if his portfolio is valued at the market value at the valuation date.

3.3.2 Appraisal smoothing

A part of reality is that market values change over time, in part due to incorporation of new information, and comps at one point in time will be drawn from a different distribution than comps at a later point in time. Because of the infrequency of transactions in the property market it is tempting to expand the sample of comps by going further back in time to arrive at a better estimate of C – the equilibrium value. However, the equilibrium value was another at that point than at the date of the appraisal. Obviously, the preparer of the accounting information knows this problem and applies a lower weighting to older comps in order to adjust for a perceived trend in the market (Geltner 2002).

Geltner (2002) says that appraisers tend to be more "backward looking" than market participants, because of their need to rigorously document and support their opinions of value, and because they have less incentive than market participants to look into the future.

This effect of past market value on the current appraised value is what is known as "appraisal smoothing". It will be most severe when (Geltner 2002):

I. The property market is rapidly changing, for this is when past market values will differ most from the current value; and

II. Comparable transactions are infrequent, for this requires appraisers to go back farther in time to obtain a given number of comps.

The latter occurs predominantly during "bear-markets", because owners with deep pockets tend to refrain from selling during such periods, which means that appraised values lag the market during downturns (Geltner 2002).

Obviously, at the point-of-sale there will be a deviation between the reported value and the realised value if there is appraisal smoothing in place. In a market trending upwards it could be expected that observed transaction prices will overshoot appraised fair values. Since smoothing is an effect of the market's information inefficiency it would potentially mean that an actor with access to more information would be able to appraise more current, and therefore more accurate, estimates of the market value of investment property.

3.3.2.1 Market information and its impact on valuation

If the number of observed transactions is important in reducing the magnitude of this overshooting in bear markets and undershooting in bull markets, it could be expected that firms that are able to observe more transactions should also have more "current" inputs to the fair value estimates of their assets. This information can be acquired through market

participation or from a party with access to information about the market, such as an appraiser or advisor.

The thinking here is that a transaction at a higher yield than the one used in the current valuation would induce a revaluation of the portfolio at the new rate. However, one cannot be sure that the observed transaction was due to noise or if the actual equilibrium has moved. A company that have many observations of transactions will, due to its higher amount of observed transactions (and also observations of transactions not being executed), faster be able to see if a new equilibrium price actually has been established and incorporate this information to its valuation of investment property.

3.3.2.2 Auditor's conservatism

There are some arguments for auditors and appraisers that are remunerated by the company, to not apply the most correct and current estimation of fair value in an upmarket (Dietrich et al 2001):

- They might be forced with litigation if the company is forced to sell the asset and sells it below the estimated fair value;
- Accounting firms might still have an aura of conservatism in their assignments. This would not allow "too aggressive" fair value estimates where it is as likely that a price in a transaction would overshoot as well as undershoot. It is often viewed as better to have a positive than a negative surprise when taking an equity investor's perspective; and
- The appraiser/accountant is the agent in a principal/agent relationship and has incentives to retain the relationship with the client (the investment property company) and their revenue stream. The client is here assumed to be interested in conservative estimates in order to realise gains at the point of sale.

3.4 Earnings management

3.4.1 Introduction

To describe a business in pure numbers is a complex matter and accounting standards needs to be applicable to a wide range of companies and situations and has left the preparer (i.e. the manager) with choices on how to present the events in the accounting information. Preparers can also affect the timing on certain events which in turn will affect accounting information. Accounting standards also leaves some wiggle room in the choice of accounting method and how methods are applied (Penman 2007). This leaves a door open for management to manipulate earnings and asset values in order to achieve a more flattering view of the company's performance in order to achieve a bonus or a budget target.

These adjustments or manipulations are usually called earnings management and the resulting effect on earnings is a loss of "earnings quality" (Penman 2007, White et al 2003). Healy and Wahlén (1999, p 368) define earnings management as:

> *"Earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers."*

An analyst tries to find "normalized earnings" in order to understand the true earnings potential of the company and estimate the value of the company. Thereby he has a need to be

able to discover earnings manipulation (White et al 2003). In each industry different areas are more sensitive and manipulation more likely. For the real estate industry especially the values of the real property is the area which is most prone to manipulation (Penman 2007). With the introduction of IAS 40, changes in value of investment property are taken through the income statement and thereby real estate companies have one more way to affect income. This can be done by for example refusing to recognize declines in value, recognizing gains by adjusting the required yield or by being too optimistic on the future rent development.

Reasons for management to manipulate earnings can be (Healy and Wahlen 1999):

- *Lending contracts*: avoidance of violation of debt covenants or to achieve more favourable lending conditions;
- *Management compensation contracts*: management can maximize their compensation by deferring income when bonus caps are reached or overstate losses when no bonuses are paid;
- *Industry regulation*: manipulation in order to comply with regulation specific to a certain industry for example a bank's capital requirements; or
- *Anti-trust or other regulation*.

3.4.2 Confirmation of a trading strategy

Earnings management can be used to "borrow" income from the future in order to increase current income or it can be used to "save" current income to increase income in the future (Penman 2007).

It could be argued that firms with a strategy to "create value" through a high transaction activity will try to justify this strategy by having conservative estimates of fair value in order to demonstrate high realised profits at the point of sale. In this way, the firm will be able to extract some unrealised gains but also a realised gain at the point of sale since the fair value estimate is "banked". The underlying assumption here is that investors look at earnings to determine the performance of the trading strategy.

However since true cash flows and income only differ in timing the true performance of the company cannot be hidden for too long as cash flows and income converge over time (Penman 2007).

3.4.3 Different classifications of changes in value

By taking losses as unrealised, management is able to blend these with potential write-ups of other properties. In effect, management will by this fashion never report a realised loss. In the event that a piece of property would decrease in value, the preparer would attempt to:

- Not take into account this event in the accounts, i.e. the property would still be accounted at its reported value before the event;
- Hide the effect in the write-up of other assets; or
- Divest the property and realise a loss but at the same time divest a property where he is able to realise a gain and in this way decrease the negative effect on profit during the period.

3.5 Theory summary

In exhibit 3-2 we summarize the theoretical effects on fair values in different market conditions as well as the effect on realized gains and losses on the sale of investment property.

Phenomena (section)	**Reported value in upmarket**	**Reported value in downmarket**	**Realized gains**	**Realized losses**	**Rationale**
Fair value accounting (3.1)	Market value	Market value	Close to zero	Close to zero	Reported value and market value are consistent for every given time
Temporal difference between valuation date and point of sale (3.2)	~Market value	~Market value	≠0	≠0	Over many periods, the distribution of discrepancies is equal on both sides of the reported value
Management skill (3.3.1)	Market value	Market value	Maximised	Minimised	The manager has a capability of buying low and selling high
Appraisal smoothing (3.3.2)	< Market value	> Market value	Increases in upmarkets	Increases in downmarkets	Reported values will lag market values
Increased market information (3.3.2.1)	→ Market value	→ Market value	Decreases	Decreases	Less smoothing and more current values in the balance sheet
Auditor's conservatism (3.3.2.2)	< Market value	< Market value	Increases	Decreases	Reported values will be estimated below the likely market values
Confirm a trading strategy (3.4.2)	< Market value	> Market value	Increases	Decreases	Conservative estimates of "fair value" and few or no reported losses
Classification of value changes (3.4.3)	Market value	Market value	As reported	→ 0	Negative value changes are hidden through ignorance or blended with write-ups or realised profits. Unrealised losses increases.

Exhibit 3-2 *The effect on fair values and realized gains/losses.*

4 HYPOTHESES

There are a number of theoretical reasons why gains and losses would deviate from zero as shown by exhibit 3-2. With these theories in mind the following hypothesis are formulated.

4.1 Representation faithfulness of accounting values

The first hypothesis is that the mean of the realized change in value during a quarter is different from zero for the total sample of companies.

H1: The mean realized change in value during a quarter is different from zero

The first hypothesis is tested statistically by comparing means using a one sample t-test. A t-test assumes that the tested variables are normally distributed; therefore goodness of fit is first tested using a Kolmogorov-Smirnof test. The null hypothesis is set so that the mean equals zero and the t-test will be used to test the rejection of the null hypothesis using a 1% significance level. The significance level denotes the chance of rejecting a true null hypothesis and a higher significance level denotes higher power.

4.2 Transaction intensity and market information

As discussed, a deviation from zero could be caused by lack of market information. Assuming that transaction activity aids the firm to gain access to private information, the valuation of investment property will better reflect current market conditions. The second hypothesis is formulated as follows:

H2: Transaction intensive firms have a lower mean of realized change in value

The second hypothesis is tested statistically by using regression line analysis. Transaction intensity is set as the explaining variable and realized change in value as the dependent. The regression line is defined as the line that minimizes the squared errors and relies on the assumption that residuals are normally distributed and has a constant variance (i.e homoscedacistic). Heteroscedacity could cause the variance of the coefficients to be underestimated and thus make insignificant variables look significant. This is controlled for using a White test. The resulting R^2 shows how much of the difference in the size of realized changes in value that could be explained by differences in transaction intensity. A high R^2 shows that the correlation between two variables is high while a low R^2 indicate a low correlation.

4.3 Freedom from bias

The third hypothesis is that transaction activity is higher in the fourth quarter. Earnings management is most likely to occur in the last quarter before the fiscal year ends. By then the amount of earnings needed to meet an already predetermined result is known.

H3: Transaction activity is higher in the fourth quarter

This third hypothesis is tested statistically by comparing the mean and size of realized change in value between Q1-Q4 across all four years using two separate one sample t-tests. The t-tests is performed as described above under the first hypothesis. A mean significantly higher in a quarter indicates that transaction activity or valuations are influenced by management. This assumes equal divestment opportunities and that market price fluctuations arise during all quarters.

5 DEFINITIONS

All values are taken from the official quarterly reports from the nineteen companies in the study.

5.1 Unrealized changes in value

Initially, when a property is bought the company records it in the accounts at the acquisition price. Until the property is divested the property can both rise and fall in value each period depending on market conditions. These changes in fair value are recorded as unrealized gains or losses. The unrealized gains are used to illustrate the timing of recognition of changes in value.

5.2 Realized gain, realized loss and book value of properties divested

When a property is divested the sales price can be either higher, lower or equal to the reported fair value of the property at the end of the last quarter. In this thesis realized gain or realized loss is defined as the accumulated sales price of all properties sold during the quarter less the accumulated fair value of all sold properties at the last quarter prior to the sale.

The standard of IAS 40 does not prescribe in detail how these real estate companies must show the numbers relating to divestments and since some companies, more than others, seem to be reluctant to be transparent when displaying their fair value accounting certain calculation has been needed in order to complete the information. For example when the accumulated fair value is not reported accumulated sales price minus realized gains has been used to calculate the fair values. In all cases at least two of the following has been collected:

- Sales price of divested property/properties;
- Realized profit/loss of divestments; or
- Reported fair value of property/properties.

When needed, the unknown variable has been solved for from the following assumption:

Realized profit/loss = selling price – unrealized book value of divested property

All properties, before they are divested, are valued at a book value that should, according to the current standard, IAS 40, correspond to market value. Thus, realised changes are a good proxy to measure the accuracy of the valuation. This argument of chosen phenomenon is also supported by Sloan (1998) who argues that when testing the reliability of accounting estimates, ex post realizations is a good proxy to evaluate the outcome.

5.3 Realized changes in value

Realized change is defined as realized gain or loss during the quarter divided by the sum of fair value of the sold property/properties. In this thesis the realized change is used as a percentage to measure the accuracy of fair values on divestments made in that particular quarter and in SEK to illustrate the magnitude of sales during particular quarters.

The measures of realized change are calculated at accumulated values of all divestments made in that quarter. The rationale for this choice is that a single divestment and its realized economic outcome is not shown by most Swedish real estate companies but the quarterly accumulated divestments are. Therefore, the only way to research this phenomenon while using publicly available data of realized gains is to look at accumulated values.

5.4 Transaction intensity

There are several ways to measure the information advantage gained from transactions in the market. In this thesis transaction intensity is used as proxy for the private information gained beyond the public information. Public information includes the official price but not concessions, the quality of the property, the non-accepted offers or other part of the transaction that are private. Transaction intensity is defined as the average of: the sums of acquisitions and the sums of sales prises of divestments during each quarter divided by the fair value of all properties at the end of the quarter. An underlying assumption is that a large deal adds more information to a smaller company than the same in deal in a larger company. The logic behind this is that the properties are representative for a larger part of the company's holding. A possible alternate route would have been to instead look at the number of quarters with transaction or rank the companies by size of transactions but with the risk of putting too much emphasis on either small frequent transaction or larger companies.

6 EMPIRICAL RESULTS

6.1 Observations and distribution

The full sample consists of 264 quarterly reports from the 19 public traded real estate companies that meet the criteria described earlier in the section on method. The sample is divided into two subsamples: the first subsample with quarters where divestments has occurred and the second subsample where no divestments have occurred. The first subsample is used throughout our analysis while the second subsample is in conjunction with the first when calculating transaction intensity.

Divestments has occurred in 144 quarters but one realized loss and seven realized gains is considered extreme values as defined earlier and removed from the sample. Three of the eight quarters concern divested investment property with fair values close to zero and five quarters concerns divested property with fair values in the range of 3.5 MSEK to 46 MSEK. The first group thus consists of 136 quarters with divestments while the second group consists of 120 quarters.

When looking at the distribution of data, surprisingly few quarterly reports show realized losses as seen in exhibit 6-1. This is true across all companies in the sample and across all years with fair value accounting. In total there are only 10 cases with realized losses across all 264 quarterly reports which must be considered as few.

Distribution of realized result from divestments

Outcome	N	%	Mean
Profit	108	79,4%	14,6%
Zero	18	13,2%	0,0%
Loss	10	7,4%	-10,9%
Sum	136	100,0%	

Exhibit 6-1 *Distribution of realized result from divestments from 2005-2008.*

6.2 Realized gains/losses

When looking at the distribution of realized gains/losses in exhibit 6-2 over time it is worth noticing the difference between the first three years with the last year of the sample. The mean realized gains is fairly stable around 12-13% across the first three years but goes down to 5,4% in 2008 as the property market turns down. Between quarters 1-4 there is less difference in percentage points than across yearly values but as will be shown in the analysis they differ significantly in size.

Across companies, the range of the distribution goes from -30,9% in realized loss to 0% while the maximum gains reach +16,7% to +66,7%. Notably thirteen of the nineteen companies never report any quarters with realized losses across the entire time period. The frequency of divestments varies as some companies do divestments more often than others, for example Kungsleden, where divestments occurs each quarter vis-à-vis Hufvudstaden where only one divestment has occurred during the entire time period.

Distribution of Sample - Realized Gain / Loss

Sample	Mean	Min	Quartile 1	Median	Quartile 3	Maximum
Full sample	10,8%	-30,9%	0,7%	9,0%	18,0%	66,7%
2005	13,2%	-30,9%	4,4%	11,1%	18,7%	54,9%
2006	12,1%	0,0%	1,4%	10,5%	17,7%	57,0%
2007	12,6%	-5,7%	0,0%	8,9%	20,8%	66,7%
2008	5,4%	-24,5%	0,0%	2,8%	12,7%	33,3%
Quarter 1	5,3%	-30,9%	0,0%	4,2%	13,0%	30,2%
Quarter 2	12,1%	-20,0%	0,9%	9,4%	18,3%	66,7%
Quarter 3	12,9%	-2,9%	2,8%	11,7%	18,3%	54,9%
Quarter 4	13,1%	-9,5%	0,8%	9,5%	23,4%	57,0%
Atrium Ljunberg	5,9%	-24,5%	-10,4%	2,4%	30,0%	30,6%
Balder	6,0%	0,0%	0,1%	2,9%	14,9%	18,1%
Brinova	9,7%	0,9%	1,8%	10,2%	14,1%	25,2%
Castellum	21,0%	-2,9%	0,0%	18,6%	30,2%	66,7%
Catena	20,5%	16,0%	16,0%	20,5%	25,0%	25,0%
Corem	33,3%	33,3%	33,3%	33,3%	33,3%	33,3%
Dagon	10,1%	2,1%	3,5%	9,5%	17,4%	19,4%
Din Bostad	20,2%	18,3%	18,3%	20,2%	22,0%	22,0%
Diös	2,7%	-20,0%	0,0%	0,0%	13,9%	16,7%
Fabege	8,6%	0,0%	0,4%	6,3%	12,0%	43,4%
Heba	10,7%	4,3%	4,3%	10,7%	17,2%	17,2%
Hufvudstaden	57,0%	57,0%	57,0%	57,0%	57,0%	57,0%
Kungsleden	8,6%	-7,8%	2,8%	8,3%	14,4%	29,0%
FastPartner	27,4%	1,5%	7,0%	20,1%	51,6%	54,9%
Home Properties	11,0%	0,0%	1,9%	10,0%	20,6%	22,8%
Klövern	13,1%	0,0%	4,6%	12,9%	18,8%	29,9%
Sagax	4,9%	-9,5%	0,0%	0,4%	11,6%	21,2%
Wallenstam	9,5%	-30,9%	6,6%	9,4%	16,5%	29,2%
Wihlborgs	4,1%	0,0%	0,0%	0,6%	5,8%	25,0%

Exhibit 6-2 Distribution of realized gains and losses

6.3 Transaction intensity

As described earlier, we use both subsamples when calculating transaction intensity. A transaction intensity of five percent per quarter would correspond to an average turnover of a tenth of the company's investment property each year.

As shown in exhibit 6-3 the transaction intensity varies from 1% to 16%. The difference indicate different strategies where some companies have a more active trading strategy while others utilize a buy and hold strategy. Worth to notice is that for some companies, for example Home Properties and Corem, the transaction intensity is influenced by a few large transactions rather than an active trading strategy.

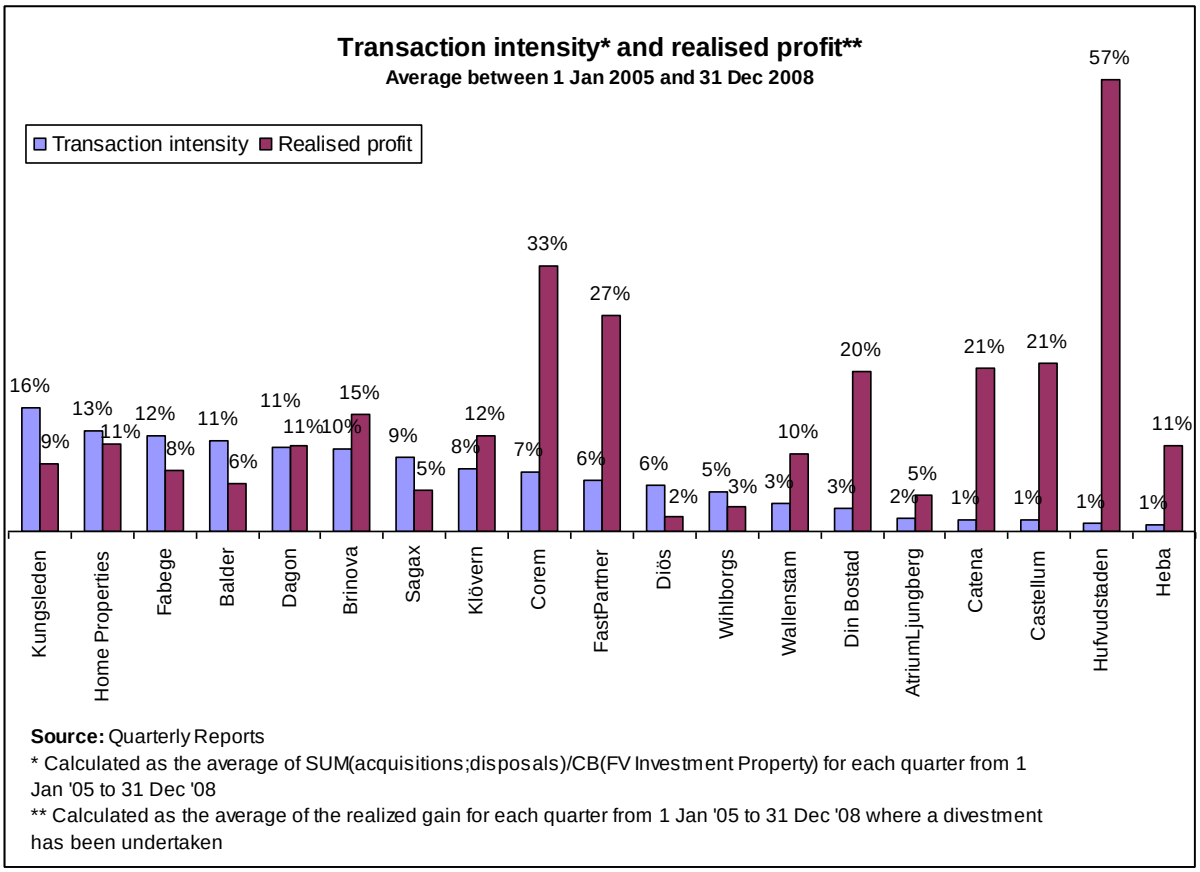
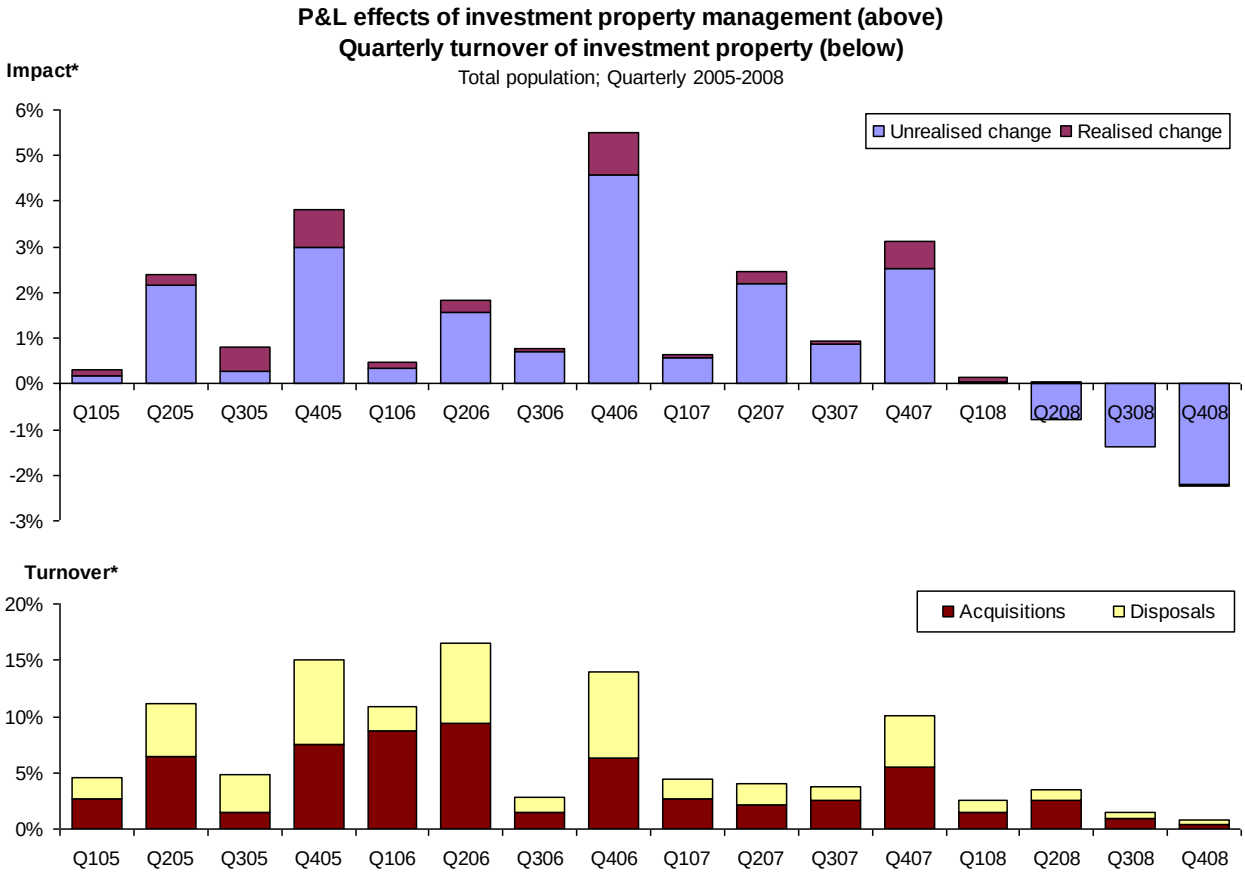


Exhibit 6-3 *Average transaction intensity and realised profit for Swedish publicly traded real estate companies between 1 January 2005 and 31 December 2008.*

When looking at the realized profit in exhibit 6-3 where companies are sorted along with the transaction intensity, the predicted pattern is not all too clear. A perfect correlation would mean lower values to the left of the graph and higher values to the right. When looking at the graph Diös, Whilborgs and AtriumLjungberg stands out on the low side with realized profits in the range of 2-5% while Corem, FastPartner and Hufvudstaden stands out on the high side.

6.4 Timing of transactions

Exhibit 6-4 displays the timing of the factors behind changes in the fair value of the companies' investment property across the time period: acquisitions, disposals, unrealized and realized changes in value. There is a visible peak in magnitude of acquisitions and disposals in the fourth quarter for the three first years and also a half year effect in 2005 and 2006. Furthermore, there is a visible decline in acquisitions and disposals during 2008 when the economic crisis had an established footprint and liquidity in Nordic real estate markets was weak (Newsec 2009).



Source: Quarterly Reports
* as % of investment property (closing balance)

Exhibit 6-4 *The earnings impact of investment property management (disposals and valuation) along with the turnover of investment property (acquisitions and disposals). 4Q 2008 is the only quarter with a negative realised change.*

7 ANALYSIS

7.1.1 Mean of realized gains/losses are different from zero

When looking at the difference between reported fair values and realised values we can see that the mean difference is 10.81% (across the quarters with divestments during time period after excluding extreme values). This indicates that the reported fair values are indeed lower than actual sales prices and is in line with our first hypothesis.

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Realized gains in % of book value	136	,1081	,13832	,01186

Exhibit 7-1

The K-S test shows that these realised changes are normally distributed (se appendix 11-3) and we can therefore use a t-test to test the mean realized gains of from zero. The scarcity of losses already has indicated a bias in fair values compared to actual sales prices and this is also confirmed by the t-test. The t-test show that the mean of the realized changes is separate from zero at the 1% significance level so we can reject the null hypothesis in favour of H1 and draw the conclusion that the mean realized change are higher than zero.

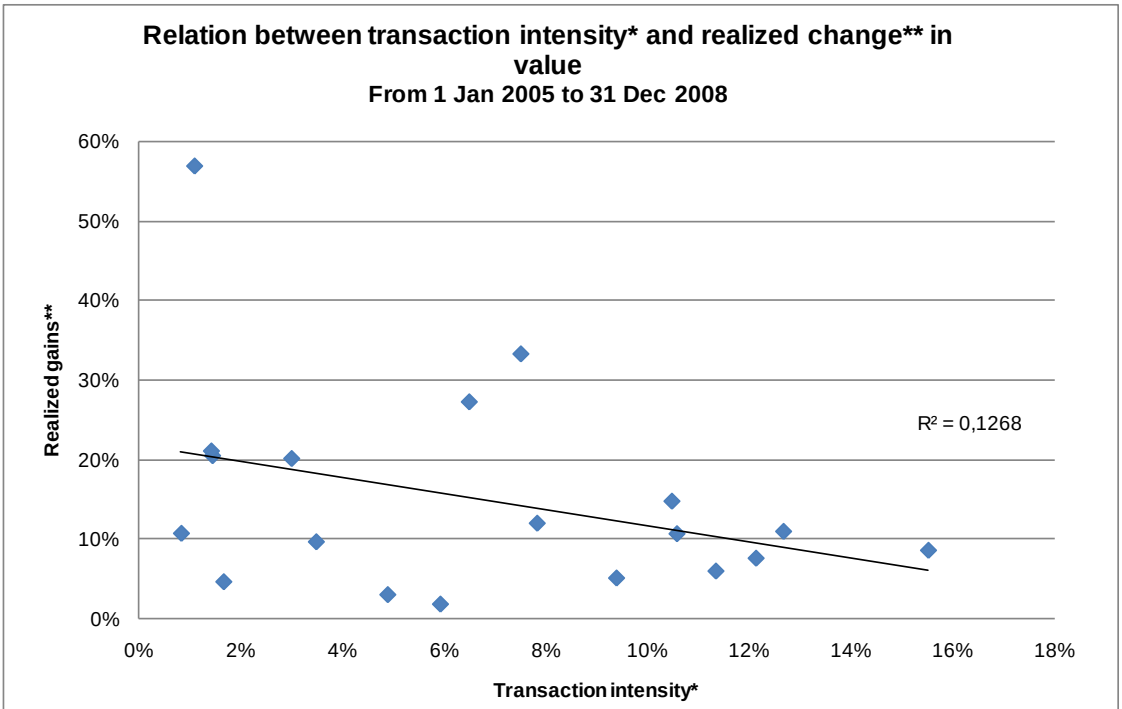
One-Sample Test

	Test Value = 0			
	t	df	Sig. (2-tailed)	Mean Difference
Realized gains in % of book value	9,112	135	,000	,10808

Exhibit 7-2

7.1.2 Transaction intensity and market information

When looking at the difference between companies and more specifically the impact of transaction intensity on the magnitude of realized gains the previous graph on the subject indicated a far from clear cut connection. The regression line analysis in exhibit 7-3 confirms this with a R^2 value of 0,1268. The data used in the regression was controlled for hetroscedacity using a White test that confirmed that the sample was homoscedastic (see exhibit 11-4 in the appendix). The value that stands out the most is the Hufvudstaden value with the 57% realized gain. The weakness of the correlation between high transaction intensity and lower gains is further illustrated if this value excluded since the R^2 value drops to around 0,05. Our second hypothesis that transaction intense firms would have lower realized gains can therefore not be confirmed. This indicates that other factors beyond the transaction intensity are affecting the magnitude of realized gains.



Source: Quarterly Reports
* Calculated as the average of SUM(acquisitions;disposals)/CB(FV Investment Property) for each quarter from 1 Jan '05 to 31 Dec '08
** Calculated as the average of the realized gain for each quarter from 1 Jan '05 to 31 Dec '08 where a divestment has been undertaken

Exhibit 7-3

7.1.3 Timing of transactions and earnings management

When looking at the timing of asset sales, the mean of realized profits are 3% higher in the fourth quarter as shown in exhibit 7-4. This difference is however not statistically significant even on the 10 % level as shown in exhibit 7-5, and therefore no conclusions regarding timing differences can be drawn from analysis of the gains in percentage points.

Group Statistics

	quarter 123 vs 4	N	Mean	Std. Deviation	Std. Error Mean
Realized gains in % of book value	1,2,3	102	,1006	,13442	,01331
	4	34	,1306	,14923	,02559

Exhibit 7-4

Independent Samples Test

		Levene's Test		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Realized gains in % of book value	Equal variances assumed	1,488	,225	-1,096	134	,275	-,03000	,02737
	Equal variances not assumed			-1,040	52,020	,303	-,03000	,02885

Exhibit 7-5

However when looking at the size of realized gains in MSEK there is a visible difference between the fourth quarter and the rest of the year as indicated by the graph in exhibit 6-4. Exhibit 7-6 shows that the difference in mean is in the size of 80-90 MSEK.

Group Statistics

	quarter 123 vs 4	N	Mean	Std. Deviation	Std. Error Mean
Realized gains in comp to book value	1,2,3	102	27,8824	55,4535	5,4907
	4	34	113,8618	224,6153	38,5212

Exhibit 7-6

The difference in mean between the fourth quarter and the rest of the year is confirmed by the t-test on the difference in mean of realized gain size and is significant on the 1% level as shown in exhibit 7-7. Thereby we can reject the null hypothesis in favour of hypothesis three, that the mean transaction size is higher in the fourth quarter than the rest of the year. When comparing the difference in mean between the fourth quarter and the three others independently the difference is significant on the 1% level for both the first and the third quarter. For the second quarter we reject the null hypothesis first at the 10% level.

Independent Samples Test

		Levene's Test		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Interval of the Lower	Upper
Realized gains in comp to book value	Equal variances assumed	38,258	,000	-3,576	134	,000	-85,979	24,045	-133,535	-38,424
	Equal variances not assumed			-2,210	34,350	,034	-85,979	38,911	-165,026	-6,933

Exhibit 7-7

8 CONCLUSIONS

8.1 Realised changes are positive and significant

The average realised gain on investment property was 10,8% for a Swedish real estate company between 2005 and 2008. This result is in line with the 6% gain that Dietrich et al found when investigating faithful representation of UK fair value estimates of investment property.

Since the bias is both positive and clearly significant, one could argue that there is a material error in the valuation of the sold properties. However, any conclusions regarding faithful representation of the property portfolio is dependent on some factors on which we will elaborate on below.

8.1.1 Market efficiency – the ability to sell properties above market value and the relation to transaction intensity

First, we would like to point out that there is room for a positive bias along with having representation faithfulness of investment property. Obviously, managers of real estate companies could have a particular skill in using the noise and inertia of private inefficient markets to their advantage and sell investment property above market value. However, the manager needs to have a superior knowledge about the market compared to other market participants in order to strike this advantage compared to their counterparty in a transaction.

We used transaction intensity as a proxy for a company's knowledge about the market. Thereafter we assumed that if valuation estimates of investment property are faithfully represented, they should be valued at market value. However, we found no statistically significant relation when we tried to relate the transaction intensity with the ability to sell properties at a gain (above market value).

On the other hand, it might be the fact that all companies in our population have higher transaction intensity than private market participants, and thus all have the sufficient superior market knowledge to produce an average realised gain of 10,8%. Since a majority of the potential market participants are private companies, it is possible that public companies are taking advantage of other actors in the property market in order to realise gains above market value. Nevertheless, arguments can be raised whether this discrepancy in management skills between public and private firms would exist for a long time and any explanation would probably have to go further than, for example, the access to capital by public firms.

Obviously, our measure of market knowledge could also be flawed. Market information can be accessed through informal contacts, advisors or by other means but these have been hard to quantify or outside the scope of this thesis.

8.1.2 Representativeness of the valuation of properties and the neutrality of reported values

In the above section we discussed the impact of management skill. In this section we will take into account the possibility that managers have discretion in which properties to sell and the valuation of investment property. Furthermore, we assume that the transactions in our sample were made at market value. We will also discuss implications of our results depending on whether the reported value of sold properties is representative for the reported value of the whole portfolio of properties. This discussion will enable us to draw different conclusions on faithful representation depending on whether:

I. The sold properties have valuations representative for the whole portfolio; and

II. The reported values are neutral or biased.

Matrix of conclusions, disregarding management skill			
		Representativeness of divested properties' reported values	
		Only divested properties	**Whole property portfolio**
Characteristic of reported value	**Neutral**	(C) Cherry picking Timing differences	(A) Appraisal smoothing
	Biased	(D) Golden level, separate portfolios Earnings maximized	(B) Confirm trading strategy Conservatism

Exhibit 8-1 *Summary of conclusions*

The reported values of divested properties can either be representative for only these properties or they can be representative for the companies' entire portfolio of investment property. If the valuations are assumed to be representative for all properties then the properties are either undervalued or overvalued depending on how you look at the nature of reported values.

8.1.2.1 Reported values are representativeness for the valuation of the whole portfolio

If the findings are representative for the whole portfolio there is a material error in the faithful representation of investment property. In this case, investment property is undervalued and the portfolios of Swedish public real estate companies should, on average, be written up with 10,8%.

8.1.2.1.1 (A) Reported values are representative for the valuation of the whole portfolio and neutral

If reported values are neutral and the reported value of investment property reflects the best estimate of the preparer of the accounting information, a possible explanation for our findings could be appraisal smoothing. Appraisal smoothing would cause both realized gains and losses over a business cycle. The time period used in this thesis can be characterised by three years with a bull market and a (2005-2007) followed by a bear market (2008). During this time period, smoothed reported values would tend to create a positive mean of realised changes in our analysis. However it is hard to conclude on the extent of appraisal smoothing without a full cycle behind us.

Having that said, using appraisal smoothing as an explanation for the discrepancy (between selling prices and reported values) looses some substance when taking into account that this discrepancy did not decrease for companies with better market contact, i.e. transaction intensity.

Another way to look at the impact of transaction intensity is that all needed information may already be public or available through a third party such as an independent appraiser or advisor. Of course, a third way to interpret the low relation is that our proxy for market information, transaction intensity, did not capture how much market information the companies have. In this respect, it is interesting to note that the companies (Fabege and Balder) with the lowest deviation from the estimated value by Leimdörfer, who presumably would have access to more information since they act as advisor in many transactions, is also on the low side in terms of average realized gains (see exhibit 1-2 and exhibit 6-3).

8.1.2.1.2 (B) Reported values are representative for the valuation of the whole portfolio and biased

A reason for reported values to be conservative could be to confirm a trading strategy. By consecutively putting a conservative value on the portfolio as a whole, the firm is saving current earnings and has potential to influence future earnings by divesting properties above an artificially low recorded value.

It could also be the case that company has an estimate of the market value but conservatism among appraisers and auditors puts an arbitrary discount of some 10,8% to this value. In this case, reported values will always undershoot the market value. Having that said, it is interesting to note that real estate companies estimated the value of investment property 14% higher compared to the implied market valuation and Leimdörfer's valuation in exhibit 1-2.

8.1.2.2 Reported values are only representative for the valuation of divested properties

We assumed above that our results were representative for the whole portfolio and the conclusion was that the portfolio of investment property should be written up by 10,8%. Should our findings not be representative for the valuation of the whole portfolio, it is hard to infer any conclusions about the representation faithfulness. The portfolio could be undervalued, spot-on valued and overvalued.

8.1.2.2.1 (C) Reported values are neutral and representative for the valuation of divested properties

If reported values are neutral and managers sell properties at market value, a plausible explanation for our observed discrepancy is that managers select the properties where they find that the estimated fair value is lower than market value for sale (*cherry picking*). Cherry picking tells us that some reported values of investment property are inaccurate and that managers take advantage of this.

One alternative explanation for the deviation is temporal differences between valuation date and the divestment date. Price fluctuations between the balance sheet date and the point of sale could cause the mean to deviate from zero if the fluctuations were either non-random or occurred with trend. However we consider this explanation inadequate since it can not explain the magnitude of difference in mean, not even in a strong up-trending property market.

8.1.2.2.2 (D) Reported values are biased and representative for the valuation of the whole portfolio

If reported values of sold investment property are biased the possibility is that management runs two portfolios: one larger for continuous management and another one for trading purposes. In this case, management is able to value the first portfolio above market value and the other below market value, with the aggregate of the two portfolios being a portfolio valued above market value. By doing so, management is able to produce unrealised gains by

overvaluing the larger portfolio and at the same time demonstrate realised gains in the smaller trading portfolio. The use of the smaller portfolio to create realised gains would be to signal a conservative valuation of the aggregate portfolio to investors. This highlights the question whether there is some kind of "golden level" of realised gains. Except for an earnings impact, realised gains have the effect of anchoring the valuation level of the aggregate portfolio by demonstrating an ability to sell properties at this level. In this respect it is interesting to note that the Leimdörfer consistently from 2005 through 2008 puts a lower value of the total real estate holdings than what the real estate companies do (see exhibit 1-3).

Few of these explanations have positive implications in terms of faithful representation, however it is hard to exclude or conclude on any explanation outlined above.

8.1.2.3 Additional considerations on earnings management

An indication of earnings management is that realized and unrealized gains have been shown to be larger in the fourth quarter than in the rest of the year. This can be interpreted as management "managing" earnings in order to meet some kind of target earnings. This target could be analyst consensus estimates, regulatory requirements, debt covenants or to maximize management compensation levels.

8.2 Empirical measurement of representation faithfulness

The various assumptions above behind the representativeness of the measured transactions demonstrate the problem in empirically measuring faithful representation. We would like to point out that it is hard to conclude whether fair value accounting is faithfully represented. Since managers actually may have superior information and exhibit skill in the execution of transactions you can not rule out representation faithfulness just by observing a conservative bias in the measure of realised changes.

8.3 Additional notes

There seems to be a common perception in the society that real estate values are rigid and hardly depreciates. This perception constitutes a fundament not only for the current financial crisis but is also a dominant expectation among the investor community. This is probably a reason why managers reluctantly report depreciating fair values and why any such indication forces investors to revaluate the perceived risk in the asset.

Furthermore, our readings of both quarterly reports and the academic literature displayed a common perception that the ability to buy low and sell high is demonstrated through realised gains. This perception has implications on how to communicate a manager's ability in executing a successful trading strategy. Managers in investment property companies dedicate a meaningful amount of their time to buy and sell investment property and presumably they also want to communicate the outcome of this activity to investors. This demonstrates a need for educating both he investor community and preparers of accounting information of how fair value accounting is correctly interpreted and implemented.

9 SUGGESTIONS FOR FURTHER RESEARCH

9.1 Information from the first quarter 2009

During the last weeks accounting information for the first quarter of 2009 has been published. Although not incorporated in this report, we see that these additional data follows the trajectory of our conclusions outlined above.

Up to date[13] the following companies have reported their first quarter results for 2009:

AtriumLjungberg	Brinova	Castellum
Catena	Din Bostad	Diös
Din Bostad	Diös	Fabege
FastPartner	Heba	Home Properties
Hufvudstaden	Klövern	Kungsleden
Sagax	Wallenstam	Wihlborgs

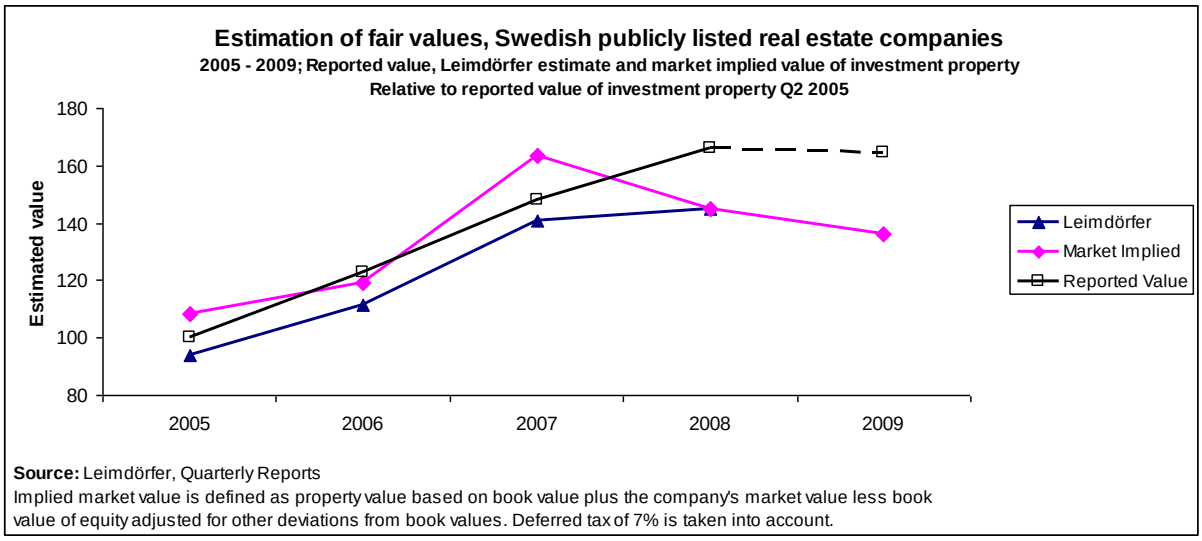


Exhibit 9-1 *Estimation of investment property values.*[14]

From the reading of quarterly reports we are able to see the following:

- Almost all transaction activity has been eliminated;
- Continuous write-downs; and
- Realized value changes are positive.

We would encourage further studies to test the faithful representation of fair values as more information is published. This has particular importance as the effects of the economic slowdown become more prevalent. Two distinct routes have evolved over the last quarter with

[13] 2009-MAY-17
[14] Leimdörfer's valuation was not publically available at this date

reported investment property values demonstrating rigidity and implied market values heading further south. Should the sensitivity of investment property values not be that sensitive to the overall economy as the increase in market betas indicate (see exhibit 1-1) this will have effects for capital allocation decisions.

Investigations, both qualitative and quantitative, regarding the representativeness of the valuation of divested properties is also encouraged in order to rule out or indicate any direction of the potential conclusions above (see section 8).

9.2 Investigate the impact of market liquidity

Market values and the frequency of comparable transactions vary over time; therefore there has been interest in the real estate finance literature to adjust for the ease of selling a property over a business cycle. Fisher et al (2003) developed a model to control for the impact of variable liquidity in commercial real estate price indices by looking at the distribution of buyers' reservation prices. In a public market with homogenous assets the time to sell has lost most of its relevance since the market price adjusted to a level where liquidity is achieved. In a private search market like the real estate market it takes time to find a buyer and the price may depend on how long you are willing to wait to find a buyer. Therefore the suggestion is that you should adjust prices to a 'liquidity adjusted price'. The implications of this would be interesting to investigate in the light of this study when data exists for a full business cycle. The difference between the actual sales prices and the fair value of the sold properties should be greater when liquidity is either high or low assuming a constant time on market for assets sold.

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11 APPENDIX

Swedish Listed Real Estate companies 2005 - 2008	
Atrium Ljungberg	Balder
Brinova	Castellum
Catena	Corem
Dagon	Din Bostad
Diös	Fabege
FastPartner	Heba
Home Properties (Capona)	Hufvudstaden
Klövern	Kungsleden
Sagax	Wallenstam
Wihlborgs	

Exhibit 11-1

Swedish property values, 2008		
SEK MM	Tax assessed value	Market value*
Farms	729 626	972 835
One-family houses	1 942 839	2 590 452
Rental properties	1 783 689	2 378 252
Industries	272 641	363 521
Other	168 180	224 240
Total Swedish property values	4 896 975	6 529 300
Reported value, 19 real estate companies		206 037
% of total property values		*3,2%*
% of rental properties and industries		*7,5%*

Source: Sweden statistics on tax assessed values, company filings
**Based on tax assessed value multiplied by 4/3*

Exhibit 11-2 *Swedish property values 2008. Rental properties and industries are identified as the segment where we would observe the largest transaction activity by publicly listed companies. See Leimdörfer's Bolagsöversikt as of June 2008. (No company has a dominant position in farms or own electricity plants).*

One-Sample Kolmogorov-Smirnov Test		
		Realized gains in %
N		136
Normal Parameters[a]	Mean	,1081
	Std. Deviation	,13832
Most Extreme Differences	Absolute	,144
	Positive	,089
	Negative	-,144
Kolmogorov-Smirnov Z		1,677
Asymp. Sig. (2-tailed)		,007

a. Test distribution is Normal.

Exhibit 11-3

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,390[a]	,152	,046	,02942
a. Predictors: (Constant), COMPUTE trans_kv=Transactionintensity ** 2, Transactionintensity				
Chi2-obs	Chi2-crit	df.	n	
2,736	4,000	2	18	H:0 not rejected, sample Homoskedastic

Exhibit 11-4 *Test of Heteroskedasticity*