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# **Procyclical effects of fair value accounting**

**- A study of Nordic investment property companies**

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## **Abstract**

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Fair value accounting for investment property has been mandatory in the EU since the adoption of IFRS 13 and has been both heavily criticized and praised. Previous research suggests that there are some inherent issues with fair value accounting for investment property, such as lacking reliability and persistence of reported unrealized earnings. There is also evidence of unrealized earnings influencing dividends and share price development related to fair value accounting in a procyclical manner. The purpose of this study is to enhance knowledge about whether fair value accounting in listed Nordic investment property companies causes procyclical effects on dividend payout and stock market behaviour. To fulfil this purpose, a quantitative analysis of financial reports and share prices of listed Nordic investment property companies was conducted. This study confirms that fair value accounting has a strong influence on dividends and share price development.

Key words: Fair value accounting, IFRS, investment property, dividends, NAV deviation

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# 1 Introduction

## 1.1 Background

The implementation of the International Accounting Standards (IAS) 40 and International Financial Reporting Standards (IFRS) 13 has resulted in listed investment property companies applying fair value accounting as opposed to the historic cost model (PwC, 2016). Investment property is defined as buildings and/or land that is held to earn rentals and/or capital appreciation (IASB Foundation, 2003). In other words, real estate becomes investment property when it is acquired by an entity for the above stated objectives. Under IAS 40 for investment property, gains or losses in value in the balance sheet are translated into profit or loss in the income statement, called unrealized gains or losses. The meaning of fair value is clarified in IFRS 13, where fair values essentially should equal the exit price for selling an asset on a market, based on certain assumptions (Nobes & Parker, 2016).

Meanwhile, in many member countries of Organization for Economic Co-operation and Development (OECD), such as Sweden and Norway, the real estate market has continuously reached unprecedented levels of value, to a degree where there is a significant risk of a real estate bubble (Kholodilin & Michelsen, 2018). Furthermore, Kholodilin and Michelsen (2018) also concluded that some countries, such as Finland and Denmark, have experienced a slower recovery on their real estate market since the 2008 financial crisis. The Nordic countries thus show varying developments within this area, despite their similarities.

The Swedish Financial Supervisory Authority (FI) (2019) reports that long periods of economic growth, abundance of capital and low interest rates have contributed to rapid price increases on the Swedish commercial real estate market. As of today, investment property companies show good financial health, but debt levels are high and still increasing. Worsened economic conditions could result in credit defaults exceeding the commercial banks' capital reserves to cover lending risks. FI (2019) concludes that current capital requirements in Sweden for lending to investment property companies are too low in relation to the amounts of possible credit default losses. In 2018, investment property loans made up 43 percent of total lending of Swedish banks to non-financial companies. Swedish banks thus have a substantial exposure to the property market.

On a European level, the European Systemic Risk Board (ESRB) (2018) report that Sweden's commercial real estate market is the largest among the EU countries in relation to GDP, and concludes that France, Germany and Sweden in particular have reached peak-level or close to peak-level commercial real estate prices, with decreasing yields as well.

The price increase of assets such as real estate that is caused by artificially low interest rates for long periods of time can be defined as asset price inflation (Brown, 2017). Not only are there risks of new real estate bubbles, but also stock market bubbles, as low interest rates decrease returns on less risky assets, causing greater demand for riskier assets with higher yields such as stocks (Rajan, 2006). For example, the S&P 500 index, measured by price per

earnings adjusted for inflation, exceeds the overvalued levels of 2007 as of 2017. Similarly, the Wilshire 5000 index, measured by market capitalization to GDP, also indicates significant overvaluation (Sigler, 2018). A similar development of rapid increases in value continues in stock markets today, as well as in stock price indexes of real estate companies, that continue a wave of all-time high levels, despite prominent volatility (Nasdaq, 2021).

Hitz (2007) states that the additional information usefulness of fair value balance sheets comes at the expense of the usefulness of the income statements, as book value on fair value balance sheets naturally converges better with company market value, and does not consider income based on transactions. The key issue of the fair value income model is earnings persistence, which refers to the degree and likelihood that present earnings will also continue to be present during coming periods. Hitz (2007) argues that although this results in increased income volatility, fair value financial reporting is more responsive to shocks and converges better with actual economic income and should therefore be considered persistent.

Although previous research suggests there is some form of investor scepticism towards the reliability of reported fair value estimates of investment property (Muller, Riedl & Sellhorn, 2011; Sundgren, Mäki & Somoza-López, 2018), there is no clear evidence of inflated reported fair values. For instance, Dietrich, Harris and Muller (2000) found that listed companies in the UK commonly applied fair value revaluations that underestimated actual selling prices. Furthermore, the reliability and accuracy of estimates were found to increase with the involvement of external appraisers. Reported fair values are consequently considerably more accurate than the alternative of reporting values based on the historical cost model.

Other researchers found contradicting evidence about the reliability of fair values, however. Lind and Nordlund (2019) argue that the exit price for properties does not necessarily equal fair value nor market value in thin and low activity markets, which the investment property market can be described as. Over 97% of European investment property companies were found to determine fair values in accordance with IFRS 13 level three, which is appraisal based on unobservable inputs due to the market's inactivity and lack of comparable objects (PwC, 2016). As recent entry prices do not necessarily equate to market value or fair value, Lind and Nordlund (2019) raise concern over the fact that subsequent valuations are seldom downgraded below entry price, but rather often exceed the price paid, even though entry prices above market value naturally ought to occur.

## **1.2 Problem discussion**

Clearly fair value accounting is far from perfect, but it is in many regards more accurate, relevant and useful than the historic cost model, due to its transparency towards investors and congruence with market values, as described by Hitz (2007) and Muller, Riedl and Sellhorn (2011). Still, there is some information asymmetry between companies and investors even with IFRS 13 (Sundgren, Mäki & Somoza-López, 2018). While there is some evidence that fair value accounting in general does not seem to create inflated fair values or non-persistent figures

related to investment property in the income statement and balance sheet, as described by Dietrich, Harris and Muller (2000), arguments by Lind and Nordlund (2019) about the reliability problems of fair value in thin markets cannot be neglected.

Possibly the most relevant issue with fair value accounting is the persistence of reported fair value earnings. Although Hitz (2007) argues that those earnings in general are persistent and do not provide noise or excessive volatility, there is evidence of reliability problems with reported fair values and prominent irrational behaviour from noise traders on the stock market (Ghosh, Liang & Petrova, 2020; Nellesen & Zuelch; 2011). Noise traders trade stocks not fully based on company fundamentals, with unrealistically high return expectations. The risk they pose can subsequently be reflected in stock prices. Consequently, there is a possibility that fair value reporting of investment property can cause unwanted side effects both on the stock market and for the companies themselves. There are multiple examples of previous research suggesting that unrealized gains cause increased dividend payouts in Greece, Australia, and Israel (Chen & Gaviious, 2016; Chen, Hellmann & Mithani, 2020; Sikalidis & Leventis, 2017).

What is described above can also be explained by signalling theory and agency theory. According to Baker, Mendel and Wurgel (2016) and Kale, Kini and Payne (2012), dividends are used by management to signal financial strength and to uphold stock prices. Thus, if dividends are based on unrealized earnings, it signals that these are persistent and reliable. Furthermore, according to agency theory, management and owners tend to have conflicting objectives, and strong investor pressure could lead to excess dividends (Driver, Grosman & Scaramozzino, 2020).

As fair value accounting generally amplifies profitability ratios (Lantto & Sahlström, 2009), there is also evidence of fair value accounting induced procyclical trading behaviour amongst listed investment property companies in China and Hongkong (Hsu & Wu, 2019; So & Smith 2009). It can also result in higher dividend payouts, which can induce further procyclical trading behaviour and reduction of liquidity. However, there is also evidence suggesting that fair value accounting had a mitigating effect on market shocks for European financial companies, due to its strong convergence with equity market value, which also shifts investors' decisional weight from the income statement to the balance sheet (Adwan, Alhaj-Ismaïl & Girardone, 2020).

The issue with current research and knowledge within the area of fair values of investment property is that it is geographically scattered with findings from many countries, including Greece, Australia, Israel, China and Qatar (Sikalidis & Leventis, 2017; Chen & Gaviious, 2016; Chen, Hellmann & Mithani, 2020; Hsu & Wu, 2019; So & Smith, 2009; Elsiefy & ElGammal, 2017). Hence, different findings do not necessarily have direct applicability to investment property companies in Europe and the Nordic countries. Furthermore, previous research has been conducted during different points in time of business cycles, whereas few studies have been conducted after the adoption of IFRS 13. Both mentioned factors can affect the findings and research comparability.

There is also a clear research gap within the area of fair value accounting and finance since few studies have researched the interconnection and causal relationship between unrealized earnings, dividends and trading behaviour, especially regarding investment property. Possible explanations for this are that investment property has stood in the shadow of fair value accounting research related to financial instruments, which has been a popular research topic since the 2008 financial crisis, defined as an exacerbating factor and sometimes accused of being the cause of the crisis (Laux & Leuz, 2010; Sellhorn & Stier, 2018). Furthermore, the U.S. Generally Accepted Accounting Principles (U.S. GAAP) do not allow fair value accounting of investment property, which is also likely a reason for low research activity, along with the fact that few European countries have large stock markets, especially in comparison with the U.S. (Sellhorn & Stier, 2018).

The risks and problems of fair value accounting lie in its amplifying effect on reported income and equity which, under circumstances of strong booms, amplifies current stock market trading cycle and raises dividend levels, and vice versa during busts or downward market corrections. Consequently, as fair value accounting can affect both stock price movements and dividends, it can be said to be procyclical, as opposed to countercyclical. This can cause several problems for individual companies and the market in general both during current cycles and during abrupt market corrections, as Laux and Leuz (2010) describe the events that occurred for financial companies and institutions in particular during the 2008 financial crisis. As described by Kholodilin and Michelsen (2018) and ESRB (2018), Sweden and many other European countries once again show considerable risk for a real estate bubble with rapid price increases due to an abundance of capital and low interest rates, particularly since the 2008 financial crisis. Simultaneously, stock markets have displayed vulnerably high levels of value ever since (Sigler, 2018).

As previously mentioned, fair value accounting for financial instruments have shown high research activity following the 2008 financial crisis and have generally been identified as an exacerbating factor to the crisis (Laux & Leuz, 2010). Consequently, the argument of studying the relationships between said variables is to broaden the knowledge of the possibilities of fair value accounting to function as an exacerbating factor in a similar market bust or correction in the near future, but from an investment property company market perspective. Thus, we identify dividends and price to book values, i.e., capital outflow and market valuation, as the two most relevant factors in determining the existence of procyclical effects from fair value accounting.

For further research within this area, it is thus suitable to investigate the potential procyclical effects of fair value accounting on dividends and stock prices among listed investment property companies in a European setting. Particularly interesting are the Nordic countries, which have a long history of low dividends and stakeholder orientation, as opposed to shareholder orientation and high dividends (La Porta et al., 1998a; Strand & Freeman, 2015). Based on the discussion above, we argue that this clear research gap in combination with current market conditions motivates the need and timeliness for this study.



### **1.3 Purpose**

The purpose of this study is to enhance knowledge of whether fair value accounting in Nordic listed investment property companies causes procyclical effects on dividends and stock market behaviour. The purpose will be fulfilled by providing answers to the two research questions.

- What effect does unrealized gains or losses have on dividend payouts?
- What long term effect does unrealized gains have on price to book values?

### **1.4 Study delimitations**

Due to the relatively small, illiquid and foreigner-restricted stock market in Iceland (Graham, Peltomäki & Sturludottir, 2015), this study is delimited to focus on listed investment property companies in the four other Nordic countries, namely Sweden, Norway, Denmark and Finland. As IFRS 13 was adopted in 2013, the natural time scope of this study is thus after its adoption in 2013 until 2020, which as of 2021 is the most recent year of published annual reports.

## 2 Theoretical frame of reference

### 2.1 The nature of fair value accounting

Fair value accounting has various aspects and implications in comparison to historic cost, where assets are valued to acquisition cost minus depreciation. A primary component is that fair value accounting does not consider income as solely a consequence of market transactions, but also as a result of market valuations of assets and liabilities. This becomes especially apparent when a company's net asset value increases or declines as it is translated to profits or loss in the income statement (Hitz, 2007). One key issue of the fair value income model is the earnings persistence, which refers to the degree and likelihood that present earnings will also continue to be present during coming periods. Therefore, more income volatility can occur, because fair value income statements naturally are less stable, but they are also more responsive to shocks and converge more with actual economic income.

Another primary component of fair value accounting is that it narrows the gap between book value and company market value on the balance sheet. This is because it recognizes asset values that would otherwise be hidden, and thus have a stronger link to the stock market, even though this gap cannot be fully eliminated. The product of these components is that the additional information usefulness of a fair value balance sheet comes at the expense of the usefulness of the income statement, antithetical to historic cost (Hitz, 2007).

In IFRS 13, there is a three-level hierarchy of fair value determination. Level 1 inputs are current prices of identical assets and liabilities in an active market. If not enough information can be collected in level 1, level 2 includes prices for similar assets on active markets, or identical assets in non-active markets, with adjustments for spreads, interest rates or yield curves. If there is limited or no observable data, level 3 should be applied, which includes unobservable inputs, often based on discounted cash flows. Due to the heterogeneity of investment property, these markets can usually be characterized as less active markets with a general lack of transparency of achieved transaction prices, so the use of level 1 and level 2 of the hierarchy play a smaller role during valuation of investment property (Lind & Nordlund, 2019).

Lind and Nordlund (2019) argue that this results in inherent reliability problems and risk, which is also supported by other studies. Muller, Riedl and Sellhorn (2011) found that fair value accounting of investment property since the adoption of IAS 40 has reduced information asymmetry between companies and investors, but not eliminated it. Fair value accounting has resulted in lower bid-ask spreads on stock exchanges, but investors' trading decisions continue to be characterized by different perceptions of the reliability of the reported values. Furthermore, Sundgren, Mäki and Somoza-López (2018) found that there is a strong association between better disclosure quality and lower bid-ask spreads. IFRS 13, which was introduced in 2013, has in general resulted in significant increases in amounts of information and assumptions related to the fair value measurement compared to IAS 40.

However, Sundgren, Mäki and Somoza-López (2018) found no support that the more complex IFRS 13 provides better disclosure quality compared to what was required under IAS 40.

Furthermore, Nordlund, Lorentzon and Lind (2021) found that a deviance within plus or minus ten percent of management reported fair value valuations in relation to the auditor's valuation was according to Swedish auditors an acceptable level. Also, the auditors-stated fair values should not be seen as the exit price at a certain date, but rather as a more long-term valuation that is smoothed out during ups and downs. Thus, Nordlund, Lorentzon and Lind (2021) found several risks of auditor confirmation bias of the reported value and its accuracy. Earlier studies have also provided evidence of client pressure and management bias in fair value determination (Achu, 2013; Selling & Nordlund, 2015). This can be somewhat compared to the period leading up to the 2008 financial crisis where credit rating institutions deliberately gave inaccurate high credit ratings to financial instruments due to client pressure (Coffee, 2009; Neal, 2008).

## **2.2 Stock market trading behaviour and net asset value deviations**

Ohlson's (1995) valuation model states that share market value should roughly equal book value plus present value of expected dividends and future abnormal earnings. Notwithstanding, Barkham and Ward (1999) conclude that there is a long history of investment property companies trading at discounts on stock exchanges in relation to their net asset value (NAV). Aside from that, explanations for discounts include company specific factors such as management quality or contingent taxation. Barkham and Ward (1999) also suggest that general market sentiments are just as important factors explaining net asset value premiums or discounts. Market sentiment is particularly linked to noise traders, whose risky behaviour can be reflected in stock prices.

Brounen and Laak (2005) found that NAV discounts decrease with firm size and historic returns, and increase with more leverage, risk and property type spread. Morri and Baccarin (2016) found that level of debt, operational risk, and financial performance are related to the level of NAV discounts in Real Estate Investment Trusts (REIT), while Ghosh, Liang and Petrova (2020) also found dividends to decrease NAV deviations. Similar to other studies, Morri and Baccarin (2016) also found that general market sentiment has a strong explanatory power of discount levels, especially during market downturns and recessions.

As mentioned previously, there are still certain degrees of reliability issues and information asymmetry between companies and investors regarding fair value accounting in investment property companies (Muller, Riedl & Sellhorn, 2011; Sundgren, Mäki & Somoza-López, 2018). Furthermore, Ghosh, Liang and Petrova (2020) found that disclosure of fair values does not lead to lower NAV deviation, rather fair values make the NAV deviation and stock liquidity worse during crisis periods, contrary to Adwan, Alhaj-Ismail and Girardone's (2020) findings from financial companies. Similarly, Nellessen and Zuelch (2011) found that deviations between market capitalization and net asset values are to a large part connected to the reliability

of reported fair values. So, as fair value estimates are not reliable enough, it results in the net asset value of European property firms deviating from the share price, resulting in discounts.

A common standpoint brought up by many such as Adwan, Alhaj-Ismail and Girardone (2020) or Hitz (2007) is that the issues with the pro-cyclical nature of fair value are compensated by the increased relevance and transparency that fair value provides. However, Lantto and Sahlström (2009) found that, in comparison to the previous historic cost model, fair value accounting generally increased profitability ratios. Consequently, due to the fair value model's positive effects on the income statement, the studied companies saw significant effects on various financial ratios, such as initial decreases in the price per earnings ratio.

As found by Elsiefy and ElGammal (2017) in a study of a listed Qatari investment property developer between 2007-2011, fair value accounting had marginal effects on the balance sheet, but the unrealized gains and losses had a substantial impact on the income sheet both during market booms and busts. In turn, this had a major impact, sometimes amplifying and concealing effects on real profitability measures such as profit margins, return on assets and return on equity. The company that was researched, prior to the 2008 market bust, had a very high NAV premium.

Because of these findings, Elsiefy and ElGammal (2017) conclude that any increase of the share price in response to fair value gains would drive the share price to vulnerable levels in case of downward corrections in the market. Due to fair value accounting, the company's earnings per share were more than three times higher than would have been the case without fair value accounting. Nevertheless, Elsiefy and ElGammal (2017) conclude that market corrections were primarily associated with general market factors rather than fair value gains or losses, much similar to what is suggested in previous research (Barkham & Ward, 1999; Morri and Baccarin, 2016).

So and Smith (2009) studied stock market behaviour of Hongkong investment property companies between 2004-2006, during the transition from historic cost to fair value accounting. In the old standard, revaluations were presented in the revaluation reserve and not in the income statement, as is the case with the fair value model. Sellhorn and Stier (2018) explain that there are strong associations between annual asset revaluation amounts under fair value and subsequent stock returns. So and Smith (2009) also found that investment property companies saw significantly higher stock market price reactions after the adoption of fair value, with a strong association between fair value adjustments in the income statement and subsequent share price increase. According to So and Smith (2009), this meant that investors placed more value and weight on revaluations when presented in the income statement in comparison to when the same figures were presented in the revaluation reserve.

Furthermore, Hsu and Wu (2019) found that the use of fair values was associated with higher degrees of crash risk in comparison to historical cost for Chinese listed companies. Explanations for this include that fair values for non-financial assets in low-activity markets are more prone to managerial manipulations of input, particularly at level 3, something that is

not as common in high-quality information environments such as in Europe. Hsu and Wu (2019) also found that crash risks are mitigated under strong corporate governance.

Partly in line with Hsu and Wu (2019), Adwan, Alhaj-Ismail and Girardone (2020) found that higher exposure to fair value mitigated market reactions to the 2008 financial crisis amongst listed financial companies in Europe. As Hsu and Wu (2019) explained, because of stronger corporate governance and a higher information quality environment, fair values are not expected to be an exacerbating factor during market turbulence in such markets. The reason for this is that the balance sheet rather than the income statement becomes more relevant for investors during times of market turbulence. Consequently, as fair value accounting increases the value-relevance of equity book value in relation to equity market value, the level of exposure to fair value moderates the changes of the ratio between book value and market value (Adwan, Alhaj-Ismail & Girardone, 2020).

### **2.3 Dividend policy**

Lintner's (1956) dividend policy framework serves as an influential theoretical base for corporate dividend policy even today. Lintner found that companies tend to create long run dividend targets based on dividend to earnings ratios that are derived from projected discounted income. Furthermore, as earnings are not always persistent, the dividend policy does not change until management can confirm that the earnings are persistent over time. Lintner (1956) identified two primary types of dividend policy. The first type is that dividends are based on residual equity after met capital requirements. The second one is based on fixed dividend payout rates in relation to earnings.

As mentioned above, fair value adjustments end up in the income statement. Sikalidis and Leventis (2017) found that revaluation of investment property resulting in unrealized gains or losses had different effects on dividend payout policy in Greek investment property companies. Sikalidis and Leventis found that increase of payouts occurred when a positive revaluation materialized, while dividends are unaffected when a negative revaluation occurs. Sikalidis and Leventis (2017) also found that revaluation of financial securities had no effect on dividend payout, as they are generally considered to be transitional. The fact that dividends were found to be based on unrealized earnings from investment property was found to be because such reported income, in the form of unrealized gains, is considered persistent, in line with Hitz's (2007) view.

However, Chen, Hellmann and Mithani (2020) found that unrealized gains on financial instruments generally resulted in increased dividend payout of these unrealized earnings. Similarly, Chen and Gavius (2016) found a substantial increase in dividend payouts since the 2007 Israeli adoption of IFRS, and a large portion of these can be linked to the dividend payout of unrealized gains following positive fair value adjustments of both financial instruments and investment property. Companies more propense to distribute unrealized earnings were typically characterized by higher levels of financial leverage and with a more aggressive financial reporting approach and possibly some sort of manipulation of reported earnings.

Related to this, research by Asquith and Mullins (1983) and Healy and Palepu (1988) have shown strong relationships between announced dividend changes and stock market reaction which supports and explains the strong signalling function that dividends have. Asquith and Mullins (1983) found that there is a strong relation between market reaction and the dividend change significance. They conclude that part of the significant excess return that is associated with initial dividends can be explained by the increase in dividend yield. Asquith and Mullins further conclude that shareholders' wealth is increased when dividends are initiated and when subsequent increases in dividends are initiated. They also support Lintner's (1956) findings about the value of dividends information and suggest that dividends can be effectively used as signalling a firm's performance, unlike other information.

Healy and Palepu (1988) also found support for Lintner's findings and suggest that alterations in earnings, past and current, can give way to predictions regarding initiations and omissions of dividends. However, dividend policy changes can cause a permanent change in earnings, caused by a stock market reaction following the dividend policy announcement. Initiations and omissions of dividends are once again found to be valuable indicators of a corporation's future earnings, allowing the stock market to anticipate earnings changes.

## **2.4 Theories to explain dividend policy and market behaviour**

### *2.4.1 Agency theory*

Agency theory explains the differing incentives between agents and principals (typically managers and owners) due to the separation of firm control and ownership (Heckerman, 1975; Jensen & Meckling, 1976; Ross, 1973). As Morris (1987) describes, the so-called principal-agent problem can occur as a result of both parties acting in self-interest. The objective for shareholders is to maximize value and return, i.e., share value and dividends, whereas managers may have other objectives. The potential conflicts that arise are the agency costs, and principals are incentivized to reduce these costs. The agency costs of equity include the decreased company value as a result of shareholders distrusting the management, and the costs incurred in monitoring and bonding with the intent of persuading the management to act according to the shareholders' interests. It is key to find the most effective trade-off between these costs (Morris, 1987).

Agency theory relates strongly to dividend policy (Easterbrook, 1984; Rozeff, 1982). According to agency theory, a company's resources are distributed as dividends to shareholders, which causes a lack of internal resources for reinvestment and forces the corporation to seek capital from third parties, which can create principal/agent costs and problems. The corporation will be motivated to reduce the costs, i.e., the dividends payouts, associated with the principal/agent relationship as much as possible (Moh'd, Perry, & Rimbey, 1995).

Smith and Pennathur (2019) found that dividend policy can also be explained and connected to agency theory implications. They argue that dividend initiating corporations will manage to make earnings appear deflated to make shareholders think less resources are available for paying out dividends. This way, more resources are available for reinvestments, consistent with agency theory and inconsistent with signalling theory suggesting the opposite. On the contrary, Chen and Tang (2017) found that manager cash compensation in Hongkong property firms increased with unrealized earnings. The compensation was however not decreased when unrealized losses were reported.

Driver, Grosman and Scaramozzino (2020) develop the concept of principal-agent problems and investor pressure related to dividends further. It was found that strong shareholder value maximization orientation and the increasing strive for short-term returns can both strongly explain dividend policy. They support the notion that systematic pressures lead to an excess of dividend payments, which could in turn lead to internal underinvestment. These pressures emerge from poorly functioning financial markets which increases the demand for liquidity and short-term earnings.

Furthermore, in a global cross-sectional study, La porta et al. (1998a) found that dividend policies amongst corporations vary greatly depending on legal regimes. Dividend payouts in common law countries are typically higher than in civil law areas, in part due to the superior investor protection in these common law countries. High growth corporations in common law countries also tend to pay out lower dividends than corporations with low growth, as shareholders are more patient when they have solid investment opportunities, contrary to civil law countries, where shareholders accept whatever they can get, without considering reinvestment opportunities. This is in accordance with one interpretation of the agency theory which stipulates that investors located in countries with strong legal protection are able to apply legal powers to obtain dividends, in particular when there are few reinvestment opportunities.

#### *2.4.2 Signalling theory*

Signalling theory brings up the problem of information asymmetry in markets, and the notion that this asymmetry can be reduced by the party that possesses more information than the other (Connelly, 2011; Spence, 1973). As Morris (1987) explains, typically, the first is applied to the buyer and the latter to the seller. This theory assumes that sellers have more information than buyers, and by applying this theory to the stock market, sellers translate to the listed companies, the buyers to investors, and the product to company shares. If buyers only have general perceptions, they will consider all products to have the same value, a weighted average made up of their general perceptions. Sellers that sell products that are of above average quality will incur an opportunity loss, as they could have sold their product at a higher price, had buyers known about the higher quality. Sellers with products of lesser quality stand to have an opportunity gain. The sellers with the higher quality product have an incentive to exit the market, unless they can effectively communicate the superiority of their product to the buyers and increase the product's price, a process known as signalling (Connelly, 2011; Morris, 1987).

Morris (1987) further explains the signalling device. A device is used which is supposed to signal the superiority of a product, which in the stock market could be translated to dividends. To prevent other sellers from imitating the signal, the signalling costs must be inversely related to the product's quality. The desired result is the buyers regarding all the sellers of inferior quality products as less attractive. The sellers that remain will then attempt to separate themselves from others. This process continues as long as there is a profit margin between the signalling costs and the increased selling price (Morris, 1987).

Similar to Asquith and Mullins (1983) and Healy and Palepu (1988), both Baker, Mendel and Wurgel (2016) and Kale, Kini and Payne (2012) also show that dividend policy and investor behaviour could be explained by signalling theory, where management uses dividends to signal financial strength and to uphold stock prices. These findings could be connected to Lintner (1956) who identified that companies tend to base dividends on long term targets rather than short term performance, and as earnings are not always persistent, dividend policy does not change until management can confirm that the earnings are persistent over time. Therefore, increased dividends signal a strong financial outlook for a company, which drives up the share price.

Although agency theory and signalling theory are considered competing theories, Morris (1987) asserts that they are consistent theories, meaning they can both be correct. Both theories assume a set of conditions, of which some are compatible in both theories, such as market participants being rational wealth maximisers and firms operating in two periods. However, they do not share any conditions that are deemed necessary, as agency theory assumes rational wealth maximization and separation of control and ownership of resources is necessary, and signalling theory assumes that information asymmetry is necessary. There is no conflict between these necessary conditions, so the theories are not equivalent, but rather consistent due to the implications of the overlap in sufficient conditions between both theories. Multiple sufficient conditions of the signalling theory can be implicitly found in agency theory. Signalling theory cannot be implicitly found in agency theory however, since information asymmetry is a necessary condition only in signalling theory, and not in agency theory.

Morris (1987) further argues that combining these theories could produce predictions about accounting decisions that cannot be obtained separately from the two theories. Consequently, combining both theories can serve as a useful theoretical basis in predicting and explaining fair value accounting effects on dividends and subsequent stock market behaviour.

#### *2.4.3 Stakeholder vs. shareholder theory*

As described above, dividend policy can be connected to investor pressure and strength (Baker, Mendel & Wurgel, 2016; Driver, Grosman & Scaramozzino, 2020; La porta et al. 1998a) through both agency theory and signalling theory, which in turn can be connected to the rivalling stakeholder and shareholder theories. Stakeholder theory is commonly described as a counterbalance to shareholder theory, although both theories centre upon creating shareholders' wealth, as described by Strand and Freeman (2015). The main objective of stakeholder theory is to create value for a wider range of stakeholders, rather than just



shareholders. Shareholder theory focuses on the interests of shareholders, and only considers the interests of stakeholders as a means to create wealth for the shareholders. Stakeholder theory started to spread in Scandinavia in the 1960s and has had a lasting impact on management academe, institutional structures, and cultural norms, and can evidently be observed in management practices of contemporary Scandinavian firms (Strand & Freeman, 2015).

In the U.S., shareholder theory became known in the mid-1980s and was the foundation for modern strategic management (Strand, 2015). Before shareholder theory rose to prominence, corporations commonly retained and reinvested their earned revenues. Agency theory facilitated the birth of shareholder theory, which advocates maximizing shareholder value and increased pay-out of dividends. Theorists believe this improves the efficiency of corporations, as reflected by increased asset values, and facilitates market mechanisms that redirect resources according to the most profitable use (Lazonick & O'sullivan, 2000). Stakeholder theorists reject shareholder theory on ethical grounds and argue that corporations have duties towards stakeholders that are not shareholders (Mansell, 2013).

As described by Strand and Freeman (2015), Scandinavia has a long history of stakeholder orientation rather than shareholder orientation, something that is also evident in findings by La Porta et al. (1998a) who found that companies in Anglo-American countries often pay higher dividends than in the Nordic/Germanic civil law countries. In general, stakeholder-oriented environments in Continental Europe are said to pay out lower dividends, in contrast to shareholder-oriented, or market-oriented contexts in Anglo-American areas. Stakeholder-oriented companies tend to value other stakeholders' interests over shareholder maximization (Renneboog & Szilagyi, 2015).

There are two ways of explaining this phenomenon, both originated from agency theory. Goergen et al. (2005) consider dividends as substitute control devices. When there is a large controlling shareholder presence, dividends should be decreased, to avoid liquidity problems. Also, Gugler and Yurtoglu (2003) bring up the conflicting agency relationship between minority shareholders and controlling shareholders and argue that a controlling shareholder could exercise its powers and withhold dividends to seize the minority shareholders, so the reliance on external financing can be minimized.

In Continental Europe, ownership structures tend to be more concentrated, and dividend payouts are lower and subject to more flexibility, than in Anglo-American countries. Firms in Continental Europe also tend to restrict shareholder control (Renneboog & Szilagyi, 2015). Sweden in particular saw an increase in shareholder orientation in the 1970s, while in the mid 1980s, a shift occurred towards stakeholder orientation, which has proven to be permanent. These shifts materialized due to various societal developments, mainly economic decline, political change, and market liberalization (Axelsson & Nettersand, 2003).

## 2.5 Hypothesis development

Agency theory predicts that managers and owners often have conflicting objectives and incentives. Managers could want earnings to appear deflated to keep dividends lower, whereas shareholders wish for maximized returns and dividends (Smith & Pennathur, 2019). Strong enough shareholder pressure will result in excess dividends (Driver, Grosman & Scaramozzino, 2020). However, as described by Strand and Freeman (2015), Scandinavia has a long history of stakeholder orientation rather than shareholder orientation, and lower dividends in general due to weaker minority shareholder protection than in other civil law countries (La Porta et al., 1998a). In other words, agency theory and stakeholder theory imply that unrealized earnings ought to not cause increased dividends in Scandinavian countries, since the managements' primary objective is not to maximize shareholder value and return at all costs, coupled with the low minority shareholder protection and power.

However, as argued by Lintner (1956), companies tend to base dividends on long term targets, and not make dividend adjustments until the change in earnings is persistent. Furthermore, Hitz (2007) argues that fair value earnings are persistent, and there are multiple examples of previous research suggesting that unrealized gains thus cause increased dividend payouts in different markets outside the Nordic countries, albeit both in civil law and common law countries (Chen & Gavious, 2016; Chen, Hellmann & Mithani, 2020; Sikalidis & Leventis, 2017). Furthermore, signalling theory would predict that management bases dividends on unrealized earnings to signal the reliability and persistence of unrealized earnings and financial strength (Baker, Mendel & Wurgel, 2016; Kale, Kini & Payne, 2012). Furthermore, Chen and Tang (2017) found that manager cash compensation in Hongkong property firms increased with unrealized earnings, which implies that managers do not necessarily have incentives to deflate unrealized earnings. Thus, both agency theory and signalling theory predict that both managers and shareholders have incentives to use unrealized earnings as a base for dividends, which is also supported by previous research.

Based on the discussion above, our prediction is that unrealized earnings are persistent and therefore affect dividends among Nordic investment property companies as well, and therefore we formulate the following alternative and null hypothesis:

*H1a: There is a positive causal relationship between unrealized earnings and dividend payout*

*H0a: There is no causal relationship between unrealized earnings and dividend payout*

Despite reliability problems of reported fair values, irrational behaviour from noise traders has a prominent strength on the stock market (Ghosh, Liang & Petrova, 2020; Nellesen & Zuelch, 2011). Furthermore, as fair value accounting generally amplifies profitability ratios (Lantto & Sahlström, 2009), there is also evidence suggesting that fair value accounting induces pro-cyclical trading behaviour amongst listed investment property companies in Asia (Hsu & Wu, 2019; So & Smith, 2009).

Additionally, Ohlson's (1995) valuation model states that present value of earnings and future abnormal earnings are relevant in market valuation, and it is likely that investors use reported unrealized earnings in their price determination of stocks, both from an income statement and balance sheet point of view.

Consequently, we predict that unrealized earnings positively affect stock market behaviour in the Nordic countries as well, especially since financial markets are becoming increasingly more globalized. In addition, as discussed by Asquith and Mullins (1983) and Healy and Palepu (1988), due to the strong signalling effect of dividends, dividend change announcements strongly influence stock price development. Therefore, if fair value affects dividends, we can also predict that it further amplifies procyclical trading behaviour (Ghosh, Liang & Petrova, 2020; Ohlson, 1995), as dividends are an important input in company market value determination as well. Based on signalling theory and previous research, we formulate the following alternative and null hypothesis, expecting that unrealized earnings positively affect price to book ratios:

*H1b: There is a positive causal relationship between unrealized earnings and stock price development*

*H0b: There is no causal relationship between unrealized earnings and stock price development*

## 3 Method

### 3.1 Research approach

The purpose of this study is to enhance knowledge about whether fair value accounting in Nordic listed investment property companies causes procyclical effects on dividend payout and stock market behaviour. The purpose will be fulfilled by providing answers to the two research questions, ‘What effect does unrealized earnings have on dividend payouts?’ and ‘What long term effect does unrealized gains have on price to book values?’ which in turn are answered by testing our two hypotheses. In order to test and validate what has been found in previous research within this area on other markets and apply it to the Nordic countries, a quantitative approach was chosen.

A quantitative approach is generally required in order to make claims of causal relationships and generalize findings to a broader context. However, it ought to be mentioned that there are semi-qualitative methods, for example fuzzy-set qualitative comparative analysis, that can establish some degrees of logical causal relationships as well. Although, such methods include various issues regarding operationalization and achieving validity due to their binary nature (Toth, Henneberg & Naudé, 2017). Thus, such a method was considered inappropriate since our research area is within accounting and finance where all our data are easily accessible and raw on an interval-ratio scale, as opposed to studies involving softer data of a more qualitative nature.

Similar to most quantitative research, this study takes the ontological position of objectivism, meaning that social phenomena and other dimensions of reality exist independently and regardless of the actors involved. In this study, this means that we view corporate and stock market behaviour to exist independently of corporate management or shareholders actively involved. We take this position because dividends and other market behaviour can be viewed as a product of laws, policies, competition, culture and even the construction of the human brain and its view on risk, herd mentality and logic (Hirshleifer & Subrahmanyam, 1998), whereby reality in this sense is not created by involved actors, but rather just is a product of independent and external factors. For example, as described in agency theory, managers and owners have by default often conflicting interests because of their relationships to each other (Morris, 1987). Also, derived from signalling theory, certain corporate signals, such as dividends, initiates easily predicted behaviour among investors (Baker, Mendel & Wurgel, 2016; Kale, Kini & Payne, 2012).

Another relevant discussion is epistemological position and how knowledge is viewed. As we have taken an objectivist position and as we have quantitatively studied corporate and stock market behaviour, we subsequently and naturally take a positivist epistemological view on knowledge. This means that only what is empirically observed and validated as fact, in this

case measured and expressed monetarily in numbers, serves as the basis for analysis and conclusions without the involvement of subjective and personal views.

Furthermore, this study is based on a deductive approach, meaning that the theoretical framework serves as the basis for hypothesis formulation, and established theory and previous research are revised and discussed based on generated empirical findings (Bryman, Bell & Harley, 2019). The theoretical framework was outlined through a preceding literature review where we gathered and reviewed scientific literature within the subject area of fair value and related areas. According to Bryman, Bell and Harley (2019), this is an important step in identifying current knowledge in order to determine research gaps and contradictions that can serve as the basis for further research. Furthermore, as this study utilizes a deductive approach, it is of particular importance to develop a rigorous theoretical framework in order to deduce relevant hypotheses.

Prior to the study, a small-scale data collection and analysis were conducted in order to test the feasibility of the study in terms of data collection, sample, and development of variables out of previous research, which resulted in the operationalization in its current form. To fulfil the purpose of the study and provide answers to the research questions, this study is conducted through a quantitative secondary data analysis. This means that data is collected from official databases and published financial reporting of listed investment property companies, in order to study the effects of reported fair values on key financial posts and indicators.

### **3.2 Sample**

Previous research indicates that reported fair value can have procyclical effects on both dividends and stock prices. For our sample, we have chosen four Nordic countries, Sweden, Finland, Norway, and Denmark for two reasons. The first reason for this is that, as mentioned previously, there is a research gap within this area for the Nordic countries. Secondly, as brought up Kholodilin and Michelsen (2018), both Sweden and Norway have for the last decade experienced extreme increases in property price levels, whereas Denmark and Finland have seen a slower and unstable recovery since the 2008 financial crisis.

Consequently, our sample consists of listed companies from countries that are expected to report different magnitudes of fair value gains or losses as an effect of the current conditions on their property markets. However, the primary purpose is not to compare between the countries, but rather to demonstrate how different levels of fair value adjustments affect dividends and stock market behaviour among Nordic companies in general. As previously mentioned, Iceland was excluded from the sample due to its relatively small, illiquid and foreigner-restricted stock market (Graham, Peltomäki & Sturludottir, 2015).

Furthermore, previous research suggests that corporate governance and managerial orientation towards shareholders is similar within the Nordic countries in comparison to others, with a long history of stakeholder-orientation rather than shareholder-orientation (Strand & Freeman, 2015). Also, La Porta et al. (1998a) found that companies in common law countries, i.e., Anglo-American, tend to pay higher dividends than companies in civil law countries, which includes Continental Europe, due to weaker legal protection for minority shareholders. The Scandinavian civil law family is identified as a separate group but close to the Germanic group, with slightly stronger minority protection, but nonetheless significantly weaker than Anglo-American countries (La Porta et al., 1998a).

La Porta et al. (1998b) also brought up that tax legislation influences corporate dividend policy, which further makes a sample from the Nordic countries suitable rather than North America or other dissimilar European countries. The choice of Nordic countries is also based on their similarities in terms of geographics and demographics, with low population density and a few bigger cities and more smaller ones, which are relevant factors when studying actors on the investment property market. We chose not to make a comparison including the United States despite that their U.S. GAAP does not allow reporting investment property to fair value, which would make a relevant comparison. However, the U.S. property market also consists to a large degree of Real Estate Investment Trusts (REIT), rather than stock-traded investment property companies (Billings & Morton, 2008; Mull & Soenen, 1997). The U.S., or any other non-user countries of IFRS also display significant geographical, demographic and corporate cultural differences compared to the Nordic countries.

Regarding our sample of companies, we solely included listed companies whose operations are exclusively based on holding investment property. We have also limited our sample to listed companies that use IFRS, thus including the Euronext Oslo and Nasdaq OMX Nordic exchanges in the small, medium and large capitalization groups, also including companies listed on smaller trading platforms such as Firth North and Spotlight. However, some smaller capital companies on these latter platforms are not required to prepare financial reporting according to IFRS, which resulted in some exclusions. The results from the initial market screening of Nasdaq OMX Nordic and Euronext Oslo within real estate from the Börldata database are presented in table 1, showing our final sample and total sample, in parentheses.

As mentioned, IFRS 13 was introduced in 2013, although it did not seem to significantly increase disclosure quality as found by Sundgren, Mäki and Somoza-López (2018), the year 2013 still provides a reasonable starting point for our observations to increase validity and reliability as the standard has been mandatory for listed companies since then. Furthermore, 2013 and onwards could be characterized as a relatively stable part of the 2008 financial crisis recovery and boom phase that has lasted to this day (Kholodilin & Michelsen, 2018). Consequently, the sample consists of up to eight firm years for every company, depending on their Initial Public Offering (IPO). We chose to limit the sample to companies that were listed

prior to 2018, in order to obtain data for at least three consecutive years as a minimum for each company to measure change and behaviour.

<b>Nasdaq OMX</b>	<b>Large cap</b>	<b>Mid cap</b>	<b>Small cap</b>	<b>First North &amp; Spotlight</b>	<b>Total</b>	<b>Total firm years</b>
<b>Sweden</b>	15 (16)	9 (14)	1 (1)	15 (37)	40 (64)	247
<b>Denmark</b>	1 (1)	0 (0)	8 (9)	1 (1)	10 (11)	72
<b>Finland</b>	2 (2)	0 (0)	2 (3)	0 (0)	4 (5)	26
<b>Euronext</b>	<b>OBX25</b>	<b>OB Match</b>	<b>OB Standard</b>	<b>Oslo Axess</b>		
<b>Norway</b>	1 (1)	2 (6)	0 (0)	1 (3)	4 (10)	30
<b>All</b>	19 (20)	11 (20)	11 (13)	16 (37)	58 (94)	375

*Table 1 – Final sample size*

Out of the initial market screening sample of 94 companies, 36 companies were excluded due to either being listed after 2018 (14), no use of IFRS in their financial reporting (5) or not solely managing investment property (10). Furthermore, three companies were excluded due to being majority owned by a single individual and therefore explicitly having no dividends policy, and four others had no obtainable complete financial reports. As can be seen in the table above, these excluding factors were primarily applied to companies on the smaller trading platforms First North and Spotlight. With these criteria, a sample size of 58 companies resulted in a total of 375 observed firm years.

### **3.3 Data collection and operationalization**

The data in this study has been collected partly from annual financial reports published by listed companies where specific posts on the balance sheet and income statement are presented, such as earnings, unrealized earnings and asset values. We have also used company specific stock market data for the measure of market capitalization in the second research question. The most suitable database for collecting company specific financial data is Börldata, which contains complete financial data from over 18,000 companies listed on every major stock exchange (Börldata, n.d).

In line with previous research, we have used the variables dividend payout ratio scaled by total assets in relation to unrealized earnings (Chen & Gavius, 2016; Chen, Hellmann & Mithani, 2020; Sikalidis & Leventis, 2017) to measure the effect of fair values on dividends. Furthermore, stock trading behaviour related to fair value have been measured using unrealized earnings, as described above, in relation to price to book ratio, which is market capitalization divided by net asset value (Adwan, Alhaj-Ismael & Girardone, 2020; Barkham & Ward, 1999; Elsiefy & ElGammal, 2017; Nellessen & Zuelch, 2011; So & Smith, 2009).

To increase comparability between years and companies, we have outlined our variables as percentage ratios instead of using nominal amounts, as mentioned above. The first research question “What effect does unrealized gains or losses have on annual dividend payouts?” is thereby answered by measuring the current year’s unrealized earnings divided by the opening balance total property value (independent variable) and the following year’s dividend payout in relation to current year’s average total assets (dependent variable).

The second research question “What long term effect does unrealized earnings have on price to book values?” is answered by measuring the current year’s unrealized earnings divided by the current year’s opening balance property value (independent variable) and market capitalization divided by net asset value (dependent variable). As previous research suggests, and subsequently formulated in our hypotheses, we expect a causal relationship between the dependent and independent variables.

In line with previous studies (Barkham & Ward, 1999; Nellessen & Zuelch, 2011; Sikalidis & Leventis, 2017) we have used four additional control variables. The first is earnings before value adjustment and tax (EBVAT) divided by total average assets. Then firm size, which is average total assets, and firm growth which is the percentage increase of operating income. Last is debt, or leverage, which is debt divided by total assets. Additionally, we have included two variables for descriptive purposes to add more context to our two main dependent variables. Dividends to earnings were included in order to give more context and reference for the size of dividends in comparison to the dividends to assets variable. Furthermore, stock market indexes were included to add context to the simultaneous development of company valuation, i.e., price to book values, throughout the period. All variables except size are measured and expressed in percent.

<b>Variable (short name)</b>	<b>Measure</b>	<b>Purpose</b>
<b>Unrealized earnings (FVA)</b>	Current year’s unrealized earnings (fair value adjustment) dividends divided by total property value opening balance	Independent variable RQ 1 and 2
<b>Dividends to assets (DIVA)</b>	Following year’s dividends divided by average total assets	Dependent variable RQ 1 + control variable RQ2
<b>Earnings (EBVAT)</b>	Earnings before value adjustment and taxes divided by average total assets	Control variable
<b>Dividends to earnings (DIVE)</b>	Dividends divided by EBVAT	Descriptive variable
<b>Price to book ratio (P/B)</b>	Market capitalization divided by book value	Dependent variable RQ 2
<b>Debt (DEBT)</b>	Total debt divided by total assets	Control variable
<b>Cash (CASH)</b>	Total cash divided by total assets	Control variable
<b>Growth (GROWTH)</b>	Annual change in operating income	Control variable
<b>Size (SIZE)</b>	Total assets in MSEK	Control variable
<b>Stock market index (STIX)</b>	Annual return on Nordic stock market index and real estate indexes	Descriptive variable

*Table 2 – Independent and dependent variables*



### **3.4 Validity and reliability**

Validity and reliability are vital criteria for judging the quality of a study. Reliability involves the stability of the measures and the repeatability, meaning the extent to which same results would be obtained if the study is performed again at another time (Bryman, Bell & Harley, 2019). As all the data in this study are obtained from public annual company reports, no subjective measures or judgements have been done related to and during data collection and analysis, which strengthens reliability. Although it can be assumed the provided financial figures are reported with great care and audited, inaccuracies and inconsistencies may still occur (Saunders, Lewis, Thornhill, 2019). To further strengthen reliability, the variables used are consistent and based on what is established in similar research, were our adaptation and operationalization is disclosed above.

Validity broadly consists of three parts: measurement validity, internal validity, and external validity. Measurement validity includes content validity, criterion validity, and construct validity. Content validity is concerned with whether the measuring instrument covers all the contents of the variable. Criterion validity deals with whether it is expected that the data collection instruments actually obtain the desired data. Construct validity measures the extent to which the concepts correspond to the measurements (Muijs, 2010; Saunders, Lewis, Thornhill, 2019). In reference to what is discussed in the previous paragraph, measurement validity is assured by applying established variables and statistical tests. Internal validity means whether the causal relationship holds, in reference to the criteria for causality and discussion above, there are strong support for expectation and ability to demonstrate causal relationships. Causality is about establishing a causal relationship between independent and dependent variables. In a causal relationship, the independent variable, i.e., the cause, has an effect on the dependent variable, i.e., the effect (Bryman, Bell & Harley, 2019).

The main criteria for establishing causality are plausibility, covariation, temporality, and spuriousness (Babbie, 2010). Plausibility means that the claim of causality has to make sense, i.e., the cause and effect have to be connected. Covariance of variables means that both variables in the study have to vary consistently. Temporality is about ensuring the cause occurs before the effect. Spuriousness involves establishing a true causal relationship that was not inadvertently caused by an extraneous variable, not part of the hypothesis. To avoid spurious relationships, it is common to utilise control variables to measure these extraneous variables. Control variables are mathematically controlled during the data analysis stage. Having established all of these criteria, a nomothetic causal explanation has been achieved (Antonakis et al., 2010; Babbie, 2010).

Regarding plausibility, previous research suggests that unrealized earnings cause and explains dividend levels (Chen & Gavius, 2016; Sikalidis & Leventis, 2017) and that unrealized earnings cause differences in stock market behaviour (Adwan, Alhaj-Ismail & Girardone, 2020; So & Smith; 2009). Consequently, there is strong support for the plausibility of causal relationships between the variables in both our research questions and subsequent statistical

testing and analysis. Previous research shows strong evidence of covariation between these variables. Likewise, our testing displayed similar results of covariance.

To ensure temporality, dividends are measured against and derived from previous year's earnings and share prices in terms of price to book value and are measured subsequent to publications of annual reports. To mitigate spuriousness, regressions have been performed with established control variables. Also, in line with Sikalidis and Leventis (2017) and Chen and Gavious (2016), we have mitigated the effect of extreme values and potential outliers on the results by utilizing winsorization, where we have replaced the 1<sup>st</sup> percentile with the value of the 2<sup>nd</sup> percentile, and the 100<sup>th</sup> percentile with 99<sup>th</sup> percentile for our variables. This makes our analysis and results more robust, and also decreases the risk of spurious relationships. Based on this, we expect and have good abilities to demonstrate causal relationships.

External validity is about the ability to generalize the findings to a greater population. The objective of this study is to generate knowledge of whether listed investment property companies are affected by fair values, similar to what is suggested in previous research of such companies in other parts of the world. As our sample consists of all listed investment property companies that use IFRS 13 in the Nordic countries, with certain exclusions from the sample to ensure other forms of validity and reliability, our findings have significant ability to be generalized for such companies in the Nordic countries.

However, as remarked by La Porta et al. (1998a) and Strand and Freeman (2015), due to significant differences in law and corporate culture between countries, the findings cannot be considered to be fully generalizable in other countries, particularly regarding the effect of unrealized earnings on dividends. Nonetheless, the findings related to IFRS 13 and unrealized earnings effects on stock market behaviour is somewhat more generalizable to a broader set of countries as investors and stock markets are becoming increasingly more global.

### **3.5 Data analysis**

We used the established statistical processing application SPSS based on Bryman, Bell and Harley's (2019) and Muijs' (2010) recommendations and usage in previous research within this subject. The first section of data analysis consists of descriptive statistics of variables from the sample. For further analysis, one-way ANOVA, or analysis of variance, is used in order to test if there are statistically significant differences in variance between the countries for descriptive purposes related to the variables independent and dependent variables FVA, DIV and P/B. The descriptive statistics will be presented without the use of winsorization to handle outliers. As all our data are on the interval/ratio scale, Pearson correlation tests are used to test if there are statistically significant linear relationships between the independent and dependent variables, and also our control variables.

As previous research suggests, and according to our hypotheses, we expect causal relationships between the independent and dependent variables. To demonstrate this, a hierarchical linear

regression analysis with control variables is conducted to further investigate the explanatory and predicting power of fair values effects on dividends and price to book values in relation to the control variables. The regression analysis demonstrates the explanatory power of variance within our data for each set of variables, measured by  $R^2$  and expressed in percent. The regression will also demonstrate the predicting power of the dependent variables on the independent variables, measured by beta coefficient where the precision is measured by  $t$ , where values more than +2 or -2 are the acceptable level (Muijs, 2010). The regression analysis will thus assure that our assumptions of causal relationship between the variables holds. For all three of our statistical analyses, the most common level of alpha, which is the probability that the results are coincidental or random, is set to  $p < 5\%$  (0,05) to indicate significant relationships.

### **3.6 Ethical considerations**

All research should according to Bryman, Bell and Harley (2019) fulfil general principles of ethical research. Because this study is based on quantitative secondary data analysis these principles are not directly applicable in the same way as would have been the case if we conducted the research through face-to-face interviews or surveys. Publicly available data are the object of this study, so ethical concerns such as confidentiality and informed consent do not apply to this thesis. There are however other ethical considerations, related to the reporting and presenting of results, that are relevant and applied to this research.

The American Psychological Association (2002) specify the following ethical obligations. There can be no data fabrication and plagiarism; errors should be corrected; data sources should be credited; authors should only take credit for their own performed work; and the data should not be withheld from other researchers for verification purposes. Furthermore, Brown and Hedges (2009) consider three more ethical concerns. First, the process of collecting and integrating data has to be performed carefully, so errors and subsequent incorrect conclusions are avoided. Furthermore, the study criteria have to be clearly defined, so it is transparent what data is included and excluded from the research. Finally, the possible influence of publication bias should be considered.

We believe we have fulfilled the described ethical obligations by carrying out the due process of collecting and handling data in a systematic and careful manner. Care has been given to represent the results as truthful and transparent as possible and to place the results in the appropriate context. All data sources are properly disclosed and credited.

## 4 Empirical evidence

### 4.1 Descriptive statistics

Below follow tables of descriptive statistics of our sample. A table of descriptive statistics including a descriptive country comparison is also located in the appendix which is referred to and discussed below.

Variable	Mean	Median	S.D	Trim. mean	Min	P 25	P 75	Max	N
<b>FVA</b>	5,49	4,00	11,79	4,62	-55,26	1,65	7,17	118,37	374
<b>DIV</b>	1,75	1,44	2,94	1,38	0,00	0,35	2,09	36,29	375
<b>EBVAT</b>	2,85	3,12	12,29	3,04	-126,32	1,99	3,97	83,93	375
<b>DIVE</b>	63,45	43,05	102,68	47,61	0,00	14,29	69,23	860,52	375
<b>P/B</b>	1,10	1,01	0,59	1,03	0,20	0,80	1,20	5,81	369
<b>DEBT</b>	59,95	61,62	13,17	60,77	2,30	55,00	67,23	100,23	375
<b>CASH</b>	3,56	1,42	7,48	2,34	0,03	0,56	3,64	64,35	375
<b>GROWTH</b>	24,52	9,84	90,56	15,84	-99,5	1,53	23,48	1273,00	375
<b>SIZE</b>	17951	7628	23037	15054	19	1113	29502	129074	375

Table 3 – Descriptive statistics of the sample

#### *FVA (Unrealized earnings to assets)*

For this variable, the companies in the sample show a mean value of 5,49 percentage annual unrealized earnings on their properties in relation to total property value. However, there are some amounts of outliers and extreme values on the right tail, thus the 5% trimmed mean and median is lower. There is a large spread of reported annual adjustments, where the 25<sup>th</sup> percentile is around below two percent and the 75<sup>th</sup> is slightly above seven percent. This can also be seen based on the standard deviation, where some companies have reported both high losses and profits throughout the years. Swedish companies report the highest unrealized gains with a mean of 7,6 percent annually, compared to Denmark with a mean of 0,40 percent, and Finland and Norway are placed in between. The differences are also significant between Denmark and Sweden, with no significant differences between the other countries.

#### *DIV (Dividends to assets)*

The companies in the sample pay 1,75 percent of their total assets in dividends on average, whereas the trimmed mean and median decrease this figure slightly because of long right tail. Furthermore, it is evident that dividends vary greatly between companies and years, as the 25<sup>th</sup> percentile is at 0,35 percent and the 75<sup>th</sup> is at slightly above two percent. Finland, Norway and Sweden have a mean dividend payout ratio of above two percent, whereas Denmark has a mean of 0,40 percent. These differences are also significant between Denmark and the other three Nordic countries.

#### *EBVAT (Earnings before value adjustments and taxes)*

The companies in the sample have on average around three percent in EBVAT in relation to total assets, although it varies greatly, with certain outliers and extreme values on both tails. Although the 25<sup>th</sup> and 75<sup>th</sup> percentile are around two and four percent, respectively.

Realized earnings ratio is overall quite similar between all countries with a trimmed mean of 2,3 to 3,6 percent.

#### *DIVE (Dividends to EBVAT)*

The dividend payout ratio to EBVAT is on average around 60 percent. However, this significantly varies between companies and years, thus there is a high standard deviation. Furthermore, the 25<sup>th</sup> percentile is at around 14 percent, whereas the 75<sup>th</sup> is at 69 percent. This variation is largely attributed to significant differences between countries. Finnish companies have on average the highest dividend payout ratio in relation to realized earnings of about 90 percent. Danish companies have a mean and trimmed mean of about seven and five percent respectively, whereas Swedish and Norwegian companies are in between at a mean of about 60 and 80 percent, and a trimmed mean of about 50 and 60 percent.

#### *P/B (Price to book ratio)*

The price to book ratio is slightly above one for this sample, meaning that the companies on average trade at a slight premium. Even though there is some variation, the 25<sup>th</sup> percentile is at 0,8 and the 75<sup>th</sup> is at 1,2, meaning that they trade at around 20 percent discount and 20 percent premium. In comparison, Swedish companies in general trade at a premium of slightly above 20 percent, whereas the other Nordic countries trade at a slight discount on average. Nonetheless, there are some extreme cases of around 80 percent discount and several hundred percent premium throughout the sample.

#### *DEBT*

The amount of debt in relation to total assets is moderately equal and concentrated between companies with an average of about 60 percent, where the 25<sup>th</sup> percentile is at 55 percent and the 75<sup>th</sup> is at 67 percent. Finnish companies have on average the lowest debt with about 50 percent of total assets. Danish companies have on average a debt level close to 65 percent, whereas Swedish and Norwegian companies report debt levels of about 55 to 60 percent.

#### *CASH*

The amount of cash in relation to total assets varies greatly between companies. The mean is 3,56 percent and the median and trimmed mean are lower at 1,42 and 2,34 percent, respectively. This is also evident based on the high standard deviation. Also, the 25<sup>th</sup> percentile is at 0,56 percent, whereas the 75<sup>th</sup> is at 3,64 percent. Danish companies have on average the highest liquidity, while companies in the other countries fall slightly after.

#### *GROWTH*

The annual growth in terms of operating income has a large spread between companies and years, where the mean is above 24 percent, and the median is at above seven percent. There is high standard deviation and the 25<sup>th</sup> percentile is at around 1,5 percent whereas the 75<sup>th</sup> is close to 24 percent. Swedish companies have on average the highest annual growth of close to 29 percent, whereas companies from the other countries have lower but more varying means and medians.

## SIZE

The average size of the companies in the sample, in terms of average total assets, is close to 18 thousand MSEK, or 18 billion SEK, although this varies greatly. The 25<sup>th</sup> percentile is at slightly above one thousand MSEK in value, and the 75<sup>th</sup> is close to 30 thousand MSEK. Norwegian companies are on average the largest, whereas Danish companies are the smallest, with Swedish and Finnish companies in between. It should be noted however, that the sample is skewed as it includes many Swedish companies listed on smaller trading platforms, unlike the other Nordic companies.

### 4.2 Annual figures of the sample

Table 4 shows that it is evident that the average level of unrealized earnings has been increasing steadily since 2013, with the exception of 2020, in which the average fell. A similar development can be seen for dividends, which has increased overall since 2013 and 2014. The price to book ratios have since 2013 increased to an overall premium of upwards 20 percent. The same development cannot be observed for EBVAT, which has varied greatly from year to year. Growth has on average been very high each year, which is also evident for size, as the average company size has almost doubled since 2013. Additionally, the level of reported debt has since 2013 steadily decreased.

Variable	2013	2014	2015	2016	2017	2018	2019	2020
<b>FVA</b>	0,62	3,37	7,71	6,85	5,20	6,14	8,03	3,69
<b>DIV</b>	1,41	1,41	1,82	1,65	1,72	2,23	1,67	1,75
<b>DIVE</b>	43,48	77,13	76,44	73,86	76,7	57,46	58,22	46,69
<b>P/B</b>	-7,00	-0,67	25,47	19,20	8,61	4,64	8,20	17,16
<b>EBVAT</b>	1,98	5,95	3,18	4,74	4,15	3,16	2,47	3,80
<b>GROWTH</b>	10,73	29,20	33,19	26,76	22,71	48,37	30,20	12,69
<b>DEBT</b>	66,50	64,18	62,45	60,72	59,15	58,73	57,16	56,57
<b>SIZE</b>	13562	13509	14244	15413	16721	19004	21351	24049

Table 4 – Mean statistics of variables grouped by years

As can be seen from table 5, Sweden has had the strongest average annual return on its stock market, but with high volatility. Finland has had the lowest annual return and displays the highest volatility. Norway displays a high annual return with lower volatility. Denmark is placed in between with medium return and volatility. In total, the average Nordic Real Estate index annual returns have been above 16 percent since 2013, which is almost twice the return of the general Nordic stock market index of the same period.

Variable (STIX)	Mean	Min	Max	S.D	Variance
<b>Denmark</b>	12,84	-6,04	37,47	16,75	280,87
<b>Finland</b>	10,08	-16,58	71,16	27,48	755,19
<b>Norway</b>	17,23	0,88	30,85	8,15	9,83
<b>Sweden</b>	18,89	-7,45	62,39	22,31	497,53
<b>Nordic Real Estate</b>	16,47	-2,78	54,08	17,77	315,00
<b>Nordic Total Index</b>	8,42	-15,00	35,00	12,88	166,14

Table 5 – Descriptive statistics of stock market development 2013-2020

### 4.3 Hypothesis A

Our first hypothesis is presented below. As previously mentioned, the probability value to reject the null hypothesis is set at  $p < 0,05$  (5%). To investigate whether there is a relationship between the variables, a Pearson correlation test was conducted between the dependent, independent and control variables, and is presented in table 6.

*H1a: There is a positive causal relationship between unrealized earnings and annual dividend payout*

*H0a: There is no causal relationship between unrealized earnings and annual dividend payout*

Variable		FVA	EBVAT	SIZE	DEBT	GROWTH	CASH
DIV	PCC	0,487**	-0,174**	0,004	-0,079	0,024	0,120*
	Sig.	0,000	0,001	0,936	0,126	0,648	0,020
	N	374	375	375	375	375	375

\*Correlation is significant at the 0,05 level (5%)

\*\*Correlation is significant at the 0,01 level (1%)

*Table 6 – Correlation matrix of dividends in relation to independent variables*

There is a positive and moderately strong correlation between unrealized earnings and the level of dividends in relation to assets, which means that higher unrealized earnings result in higher levels of dividend payout. There is also a negative, but moderately weak correlation between EBVAT and dividends in relation to assets. This means that lower net income is associated with higher dividend levels.

There are no statistically significant correlations between size, debt and growth and dividends. However, there is a weaker, but statistically significant correlation between cash, or liquidity, and dividends, which means that higher liquidity is associated with higher dividend levels. Given the strong and significant relationship between unrealized earnings and dividends, and due to the fact that other explanatory control variables show weaker relationships, there is reason to assume that there is a causal relationship between these variables, namely that higher unrealized earnings also cause higher dividends and vice versa.

Consequently, it is reasonable to assume that the null hypothesis, which states that there is no causal relationship between unrealized earnings and dividends, can be rejected, and that the alternative hypothesis, which states that there is a positive causal relationship between unrealized earnings and dividends, can be accepted. As previously mentioned, this is ultimately tested by regression analysis which will be presented below in the analysis section. The regression analysis will display the explanatory and predicting power of the independent variables on the dependent variables.

#### 4.4 Hypothesis B

Our second hypothesis is as follows below, where the probability value to reject the null hypothesis is once again set at  $p < 0,05$  (5%). To investigate whether there is a relationship between the variables, a Pearson correlation test was conducted between the dependent, independent and control variables, and is presented in table 7.

*H1b: There is a positive causal relationship between unrealized earnings and stock price development*

*H0b: There is no causal relationship between unrealized earnings and stock price development*

Variable		FVA	DIV	EBVAT	SIZE	DEBT	GROWTH	CASH
<b>P/B</b>	PCC	0,186**	0,113*	-0,179**	-0,006	-0,173**	0,107*	0,364**
	Sig.	0,000	0,029	0,001	0,904	0,001	0,040	0,000
	N	369	369	369	369	369	369	369

\*Correlation is significant at the 0,05 level (5%)

\*\*Correlation is significant at the 0,01 level (1%)

*Table 7 – Correlation matrix of price to book value in relation to independent variables*

There is a moderate correlation between unrealized earnings and price to book ratio, which means that higher unrealized earnings results in higher price to book ratio, i.e., higher NAV premium or lower discount. Furthermore, there is a weaker, but also significant correlation between dividend level and price to book ratio, which means that higher dividends are associated with higher price to book ratio. Additionally, there is a significant, but negative correlation between EBVAT level and price to book ratio, which means that lower levels of EBVAT are associated with higher price to book value.

There is not a statistically significant relationship between company size and price to book value. However, there is a moderate negative correlation between debt and price to book value, which means that lower debt leads to higher NAV premiums or lower discounts. There are also statistically significant correlations between growth and liquidity, which means that higher growth and liquidity results in higher price to book value.

Given the strong and significant relationship between unrealized earnings and price to book value, there is reason to assume that the relationships between these variables is causal, that higher unrealized earnings cause higher price to book value, and that this effect is more pronounced in companies who also pay higher dividends.

Therefore, it is also reasonable to assume that the null hypothesis, which states that there is no causal relationship between unrealized earnings and stock price development, can be rejected, and that the alternative hypothesis, which states that there is a positive causal relationship between unrealized earnings and stock price development, can be accepted.



#### 4.5 Assumptions for regression analysis

Table 8 displays multiple significant correlations. There is a moderately strong negative and significant correlation between liquidity and EBVAT, meaning that companies with higher EBVAT tend to have lower liquidity. Furthermore, there is a moderately weak and negative significant correlation between size and growth, meaning that smaller companies tend to grow more annually in comparison to larger ones. Similarly, there is also a negative significant correlation between liquidity and size, meaning that smaller companies tend to be more liquid than larger ones. Lastly, there is also a moderately strong negative and significant correlation between debt and liquidity, meaning that companies with more debt tend to have lower liquidity.

<b>Variable</b>		<b>EBVAT</b>	<b>Size</b>	<b>Debt</b>	<b>Cash</b>	<b>Growth</b>
<b>EBVAT</b>	Correlation	1				
	Sig.	-				
<b>Size</b>	Correlation	0,010	1			
	Sig.	0,848	-			
<b>Debt</b>	Correlation	-0,011	-0,019	1		
	Sig.	0,835	0,714	-		
<b>Cash</b>	Correlation	-0,173**	-0,211**	-0,517**	1	
	Sig.	0,001	0,000	0,000	-	
<b>Growth</b>	Correlation	-0,31	-0,107*	0,022	0,038	1
	Sig.	0,555	0,038	0,670	0,466	-

N = 375

\*Correlation is significant at the 0,05 level (5%)

\*\*Correlation is significant at the 0,01 level (1%)

*Table 8 – Correlation matrix between used variables*

These control variables in table 8 display multiple significant correlations of various strengths, which could pose a problem for the following regression analysis, as it lowers the explanatory power of the control variables as they overlap to some extent. However, as only cash and debt display a correlation of higher strength, and as the others are weaker and some do not correlate at all, these effects and multicollinearity are acceptable. Furthermore, collinearity diagnostics show no indication of problematic levels multicollinearity. The regression analysis in the next chapter is also performed hierarchically, where all variables are added one at a time to make individual variable effects clearer and more discussable for analysis.

Regarding the other assumptions for a regression analysis, the data from our variables show sufficient homoscedasticity, and as previously mentioned, possible outliers have been handled by winsorization. Furthermore, normal probability plotting shows an approximate normal distribution of the residuals for both regressions. Consequently, the assumptions and criteria for conducting regression analyses, presented in the next chapter, are fulfilled.

# 5 Analysis

## 5.1 Hypothesis A - Dividends and unrealized earnings

Based on the hierarchical regression in table 9, unrealized earnings display significant explanatory power of variance in dividend level as dependent variable of about 11,6 percent ( $R^2=0,116$ ) after adjustment for outliers. While there is some minor explanatory power of the other control variables, none of them are significant. Not adjusted for outliers, R for FVA is equal to 0,487 and consequently has about 24 percent ( $R^2=0,238$ ) explanatory power of variance, while significance was unaffected. Regarding the other control variables, adjustment for outliers lowered significance and strength slightly ( $R=0,495$ ,  $R^2=0,246$ ).

Model	R	R square	Std. error	R <sup>2</sup> change	Df2	change sig.
1	0,341	0,116	2,55	0,116	372	0,000*
2	0,342	0,117	2,55	0,000	371	0,762
3	0,345	0,118	2,55	0,002	370	0,361
4	0,357	0,128	2,55	0,009	478	0,155

1: Predictors (Constant), FVA

2: Predictors (Constant), FVA, CASH

3: Predictors (Constant) FVA, CASH, EBVAT

4: Predictors (Constant) FVA, CASH, EBVAT, SIZE, DEBT

Table 9 – Regression model summary for dividends and independent variables

Unrealized earnings thus have the strongest explanatory variable in our regression on dividends, and also significant coefficients with high  $t$  value as seen in table 10, which indicates a good predictor for dividends. Also, none of the other control variables display any acceptable significance as coefficients.

Variable	Unstd. Beta	Std. error	Std. Beta	t	Sig.
(Constant)	1,750	0,509		3,434	0,001*
FVA	0,064	0,009	0,335	6,762	0,000*
CASH	-0,010	0,014	-0,045	-0,741	0,459
EBVAT	-0,007	0,007	-0,051	-1,021	0,308
DEBT	-0,009	0,000	0,066	1,311	0,191
SIZE	-	0,008	-0,070	-1,197	0,232

Table 10 – Coefficients matrix of regression for dividends and independent variables

To be able to accept the alternative hypothesis, a causal relationship needs to be established and assured. As previously mentioned, the main criteria for establishing causality are plausibility, covariation, temporality, and spuriousness (Babbie, 2010). Regarding plausibility, previous research suggests that unrealized earnings cause and explains dividend levels (Chen & Gavius, 2016; Chen, Hellmann & Mithani, 2020; Sikalidis & Leventis, 2017). Because we, in line with previous research, found a strong relationship between the variables there is high plausibility that this relationship is causal among Nordic investment property companies as well. The variables vary quite consistently, although there are other factors that influence dividends as well, as also suggested in previous research.

Furthermore, regarding temporality, dividends were measured against previous years unrealized earnings, which means that it is ensured that the cause from the independent variable

occurs before the effect in the dependent variable. Furthermore, our control variables show less and no significant explanatory power on our dependent variable and possible outliers were dealt with to reduce spurious and coincidental outcomes in our analysis and increase robustness. Consequently, as a causal explanation has been achieved and as we have measured significant explanatory and predictive power, we can reject the null hypothesis and accept the alternative hypothesis with high certainty, without major risks of type I errors. The answer to our first research question of what effects unrealized earnings have on dividends is that it has a significant influencing effect but does not provide a complete explanation since the regression is not complete and the control variables did not show any significant effects.

Much like previous research, we found strong support that higher unrealized earnings tend to cause higher dividends (Chen & Gaviious, 2016; Chen, Hellmann & Mithani, 2020; Sikalidis & Leventis, 2017). Both Lantto and Sahlström (2009) and Elsiefy and ElGammal (2017) describe that fair value accounting has an advantageous effect over the historic cost model in that it amplifies reported profitability ratios. This could explain why dividends increase as a consequence of fair value accounting, since it amplifies shareholder equity ratios, asset values, earnings and return on capital and also reduces current dividend ratios in relation to total income.

In one interpretation of agency theory, both Moh'd, Perry, and Rimbey (1995) and Smith and Pennathur (2019) argue that corporations would want to reduce dividends payouts as much as possible in order to retain internal resources available for reinvestment. Our results appear to be inconsistent with this argument, or they at least show that investor pressure prevails, as the found dividend payout ratios for most companies are high and increase steadily at least until 2019. As a consequence, due to investor pressure, where shareholders want returns as high as possible, way is given to excess paid dividends, as suggested by agency theory and in line with the perception of increased shareholder power and shareholder orientation in Scandinavia.

For these amplifying effects to have an influence on dividends, the requisite of unrealized earnings persistence needs to be fulfilled. Both Hitz (2007) and Sikalidis and Leventis (2017) argue that both managers and investors perceive unrealized earnings, at least regarding investment property, to be persistent and indicators of future cash flows which thus motivates its function as a base for dividends. This is in contrast with unrealized earnings from financial instruments, which are perceived to be transitional and thus do not serve as a base for dividends (Sikalidis & Leventis, 2017). Also, as found by Lintner (1956), companies tend to only pay dividends on those earnings that are persistent over time. We can therefore assume that the corporate management of Nordic investment property companies perceive unrealized earnings as such as well and that investor pressure too could have contributed to this development.

As Linter (1956) and many others describe, dividends tend to remain stable over time in relation to earnings and assets, without high propensity to avoid cuts. Chen and Gaviious (2016) develop this argument further, and state that if earnings increase, dividends increase as well, but the dividend payout ratio in relation to earnings or assets might not increase at all as dividends are

kept stable over time. Similarly, if unrealized earnings decrease or are reported as loss, there will not necessarily be cuts in dividends as they should be kept stable over time.

Consequently, there is a chance that the strength of our correlations, explanatory and predicting power in our regressions are understated due to the desire to keep dividends stable regardless of reported figures. Furthermore, the observed differences in dividends strategy and shareholder orientation thus also have a possibility of understating the actual influence of unrealized earnings on dividends, as companies with different dividend levels might have equal or similar influence on dividends from unrealized earnings.

On the other hand, realized earnings (EBVAT) also has the second strongest correlation, although not significant in the regression. Size, growth and debt have low explanatory power, also not significant. Liquidity has some explanatory power, but not significant either. The rest of dividend policy could therefore be explained by that companies simply have enforced different strategies, with different management and different shareholder influence. The fact that EBVAT shows a negative coefficient on dividends in our correlation analysis should not be seen as that lower EBVAT causes higher dividends. Dividends have a strong signalling function for management to mitigate information asymmetry towards investors (Baker, Mendel & Wurgel, 2016; Kale, Kini & Payne, 2012; Lintner, 1956), and is an important indicator for future growth and cash flows. As found in our correlations, smaller companies tend to be more liquid and grow faster than larger ones, and thus tend to be more expansionary oriented. Also, lower EBVAT is associated with higher dividend levels. Thus, as more expansion-oriented companies tend to have lower EBVAT and be more liquid, this can result in higher dividends because of it and because of signalling strategy to attract more investors.

The explanatory power of unrealized earnings on dividends is strong but not complete. None of the control variables (growth, debt or size) have significant effects, neither in correlation nor regression analysis. However, liquidity displayed a weaker but significant correlation, and no significance in our regression. This means that there are factors other than fundamental performance variables that influence dividends, even though these variables are likely to have some influence as well. As found by Lintner (1956), companies can take two main approaches to dividends, the first one being that the residual equity after capital requirements are met, which would represent those companies with higher dividend payout ratio in our sample. The second approach is a fixed dividend payout rate in relation to earnings, which implies that the management selects a level of their choice, either lower or higher.

The fact that dividends vary broadly, which cannot be fully explained by our variables, indicates that companies simply have enforced different dividend strategies overall and positioned themselves differently in the stakeholder and shareholder spectrum. Another factor suggested by Sikalidis and Leventis (2017) is that insider ownership is influential in dividend policy as well, which we had no ability to measure. Sweden and Scandinavia in general have traditionally displayed a strong stakeholder orientation (Axelsson & Nettersand, 2003; La Porta et al., 1998a; Strand & Freeman, 2015).

There is some indication, however, that despite the traditional stakeholder orientation and civil law regime, Scandinavian, and especially Swedish and Finnish companies, have increasingly become more shareholder oriented with overall very high dividend levels, in significant contrast to Danish companies, whom although displayed very low levels of unrealized earnings. In the stakeholder versus shareholder orientation debate, Goergen et al. (2005) claim that dividends should be decreased when there is a large shareholder presence, to avoid liquidity problems. As stock markets and the number of shareholders has grown in recent years, we found no evidence of decreasing dividends, neither did we find any relationship between size and dividends.

The high asset value increases that are found in the sample are consistent with Kholodilin and Michelsen's (2018) findings regarding the unprecedented levels of value and risk for a real estate bubble that are found in Sweden and Norway. Many companies in Finland or Denmark on the other hand have reported significant value increases overall, but slower and more unstable development, as also found by Kholodilin and Michelsen (2018), and there are no signs of decreasing. With regards to our results, these factors exacerbate the dividends levels among these companies. ESRB (2018) reported that the Swedish commercial real estate market is either close to or at peak price level. Our results show that real estate asset values amongst Swedish companies in 2019 and 2020 on average are even higher than in 2018 and the years prior, as most companies report high unrealized gains.

Just because unrealized earnings are perceived to be persistent by management and investors, does not mean that they are completely reliable and persistent over time, especially when considering the potential reliability and accuracy issues of reported fair values (Achu, 2013; Nordlund, Lorentzon & Lind, 2021; Selling & Nordlund, 2015). Lind and Nordlund (2019) also noted that recent entry prices do not necessarily equate to fair market value and that revaluations often exceed the price that was paid, whereas it would be natural for entry prices to be above market value. Our results show that a significant number of companies' real estate asset values since 2013 have increased, with annual increases occurring regularly, and very few have decreased, contrary to what should naturally occur, according to Lind and Nordlund (2019).

As also described by Easterbrook (1984) and Rozeff (1982) in relation to agency theory, the distribution of dividends to shareholders causes a lack of internal resources for reinvestment and forces the corporation to seek capital from third parties such as banks. As explained by Brown (2017), long periods of low interest rates inevitably cause asset price inflation where prices on high return and risky assets such as real estate are driven up, which was one of the main causes of the 2008 financial crisis. Thus, with regards to the similar current market development with both high unrealized earnings and dividends, there are several risks related to liquidity and debt for many listed investment property companies, as there are high risks of market corrections or even crashes. This could result in many companies in the future having to report significant unrealized losses, which gives reason to question the actual persistence of reported unrealized earnings, and the righteousness of such excess dividends. These risks would also be more serious if interest rates were to increase in the future.

## 5.2 Hypothesis B - Price to book and unrealized earnings

Based on the hierarchical regression in table 11, dividend level and unrealized earnings have moderate explanatory power on the dependent variable price to book value. Liquidity has stronger and more significant explanatory power. EBVAT has lower but significant explanatory power, with negative coefficient. The other control variables growth, size and debt have some but no significant explanatory power. The strength and significance levels of the variables were not affected due to winsorizing, rather they were strengthened somewhat ( $R=0,406$ ,  $R^2=0,160$ ).

Model	R	R square	Std. error	R <sup>2</sup> change	Df2	Change sig.
1	0,115	0,023	0,55	0,023	366	0,003*
2	0,217	0,047	0,55	0,024	365	0,003*
3	0,390	0,152	0,52	0,105	364	0,000*
4	0,403	0,163	0,51	0,011	363	0,031*
5	0,411	0,169	0,51	0,007	364	0,240
6	0,416	0,175	0,51	0,006	361	0,114

1: Predictors (Constant), DIV

2: Predictors (Constant), DIV, FVA

3: Predictors (Constant) DIV, FVA, CASH,

4: Predictors (Constant) DIV, FVA, CASH, EBVAT,

5: Predictors (Constant) DIV, FVA, CASH, EBVAT, SIZE, DEBT,

6: Predictors (Constant) DIV, FVA, CASH, EBVAT, SIZE, DEBT, GROWTH

Table 11 – Regression model summary for price to book value and independent variables

Table 12 shows that the first three control variables, DIV, FVA and CASH have positive and significant effects on price to book ratios. EBVAT has a negative but significant effect on price to book ratio. The other control variables show no significant predicting effect. As previously described, companies with high unrealized earnings are more likely to trade at a premium, and companies with reported unrealized losses or low unrealized earnings tend to trade at a discount. Dividend level also has strong and significant explanatory power. Liquidity also has strong and significant explanatory power in price to book ratio.

Variable	Unstd. B	Std. error	Std. B	t	Sig.
(Constant)	0,762	0,173		4,408	0,000*
DIV	0,031	0,017	0,095	1,949	0,029*
FVA	0,006	0,003	0,093	2,978	0,011*
CASH	0,026	0,005	0,357	5,825	0,000*
EBVAT	-0,004	0,002	-0,099	-2,002	0,046*
DEBT	0,002	0,003	0,048	0,818	0,414
GROWTH	0,001	0,000	0,079	1,515	0,114
SIZE	-	0,000	0,091	1,783	0,075

Table 12 – Coefficients matrix of regression for price to book value and independent variables

To be able to accept the second alternative hypothesis, a causal relationship needs to be established and assured once again. As previously mentioned, the main criteria for establishing causality are plausibility, covariation, temporality, and spuriousness (Babbie, 2010). Regarding plausibility, previous research suggests that unrealized earnings cause differences in stock market behaviour (Adwan, Alhaj-Ismail & Girardone, 2020; So & Smith, 2009), which we also found evidence of. Thus, there is high plausibility that these relationships apply to a Nordic stock market setting as well, especially since stock markets are highly globalized.

Similar to our findings for the first alternative hypothesis, there is significant covariation between unrealized earnings and price to book values, although there are other significant influencing factors as well, such as dividends and liquidity. Temporality was ensured by measuring price to book values after the publication of annual reports, including unrealized earnings, dividends and other used control variables. While the control variables have some significant effects, the main independent variable shows similar significant explanatory and predicting effects as well. Furthermore, as for all our variables, possible outliers were mitigated by winsorization, which increases robustness of these results.

Based on this discussion, it is reasonable to claim that a causal explanation has been achieved, and thus we can reject the null hypothesis and accept the alternative hypothesis without major risk for type I errors. The answer to our second research question of what effect unrealized earnings have on price to book values is that it has a significant causal effect but there are many other influencing company specific and market factors as well. For instance, according to our prediction, premiums are more pronounced for companies with higher dividends, which in turn are caused by unrealized earnings.

Our findings show that higher unrealized earnings result in higher price to book ratio, which is supported in previous research of the connection between unrealized earnings and procyclical trading behaviour (Hsu & Wu, 2019; So & Smith, 2009). This is because investors perceive unrealized earnings to be persistent and indicators of future cash flow (Hitz, 2007). Also, as fair value accounting moves investors' decisional weight from the income statement to the balance sheet (Adwan, Alhaj-Ismael & Girardone, 2020; Hitz 2007), the increased equity due to unrealized earnings affect company market capitalization. Furthermore, as both Lantto and Sahlström (2009) and Elsiefy and ElGammal (2017) discuss, fair value accounting has the advantageous effect over the historic cost model in that it amplifies reported profitability ratios. Thus, when companies report high unrealized earnings, it improves reported debt level, return on capital, equity and other financial health and profitability measures, which increases investor attractiveness.

Furthermore, we found evidence that higher dividends result in higher price to book ratio. This goes in line with previous research (Baker, Mendel & Wurgel, 2016; Kale, Kini & Payne, 2012; Lintner, 1956), suggesting that dividends have a strong signalling effect on investors, as it works as an indicator for future growth and cash flows. It is also used as a tool to signal financial strength and to uphold stock prices. In addition, it is also similar to Asquith and Mullins (1983) and Healy and Palepu (1988), who found a strong relationship between dividend announcement and share price development. This naturally drives up the share price, as indicators of higher growth and cash flows motivates a higher price per share. As we found evidence that unrealized earnings cause higher dividends, this effect is stronger for those companies with higher unrealized earnings, and thus higher dividends.

Ohlson's (1995) valuation model states that company market value should roughly equal book value, present value of expected dividends and future abnormal earnings. Therefore, absence of dividends due to unrealized losses reduces market value.

The same can be applied to future abnormal earnings, if those earnings as in unrealized, are negative, then market value is further reduced. Thus, it is reasonable to assume that the differences between the companies and countries in terms of price to book value can be traced to previously reported and future expected dividends and earnings, which is also evident from our results and other previous studies. Market valuation based on unrealized earnings can however be problematic since there is evidence of weak accuracy of such reported figures (Achu, 2013; Nordlund, Lorentzon & Lind, 2021; Selling & Nordlund, 2015), which has paved way for investors not perceiving unrealized earnings to be fully reliable, as brought up by Ghosh, Liang and Petrova (2020) and Nellessen and Zuelch (2011).

Although, considering the booming figures and amplifying developments, it can be thought unlikely the investor skepticism regarding the reliability of reported fair value estimates of investment property, as described by Muller, Riedl and Sellhorn (2011) and Sundgren, Mäki and Somoza-López (2018), is subsiding. However, our findings also show that many companies outside Sweden still trade at or near discount, which Barkham and Ward (1999) found to be very common for investment property companies, suggesting that there could be at least some reliability issues with fair values for certain companies (Ghosh, Liang & Petrova, 2020; Nellessen & Zuelch, 2011).

As described by Kholodilin and Michelsen (2018), Sweden in particular shows significant signs of a real estate bubble, and we have since this publication also observed high levels of fair value increases. As our analysis suggest, these market factors influence stock price development, which is especially apparent and significant among Swedish companies, but thus also affects companies in the other Nordic countries that have reported high unrealized earnings. The current market development is characterized by both high unrealized earnings, dividends and NAV premiums, which, as described by Elsiefy and ElGammal (2017), materializes several risks for listed investment property companies related to liquidity and debt if both the stock market and property market were to correct downward or even burst in the near future as suggested by Sigler (2018) and Brown (2017). These effects and risks are also evident in our findings, as the stock price development of investment property companies overall has been twice as high as other sectors for the studied period.

The first risk related to what is discussed above is that unrealized earnings inflate the value of investment property stocks and could act as a exacerbator in its subsequent deflation during a wide market correction, similar to what happened for financial companies in during the 2008 financial crisis as described by Laux and Lutz (2009) where stock prices previously had soared simultaneously as financial instruments were corruptly appraised and credit rated by external actors (Coffee, 2009; Neal, 2008). This draws some similarity to present day where there is evidence of client pressure on auditors related to the appraisal of investment property (Achu, 2013; Nordlund, Lorentzon, & Lind, 2021; Selling & Nordlund, 2015). This could result in plummeting equity as a consequence of unrealized losses, which significantly increases risk of insolvency and liquidity for such companies, especially if interest rates were to increase. Such an event could have devastating effects on commercial banks with high lending exposure towards the investment property market, as commonly found in Sweden (FI, 2019).



Similar to what was found related to unrealized earnings and dividends, our regression has strong but not complete explanatory power. Thus, there are other factors influencing price to book value, such as company momentum, market sentiment and noise trading, as suggested by Barkham and Ward (1999). This can partly explain why some companies trade at significant premiums, particularly in Sweden, where we observed the strongest development and growth on both the stock market and commercial real estate market throughout the sampling period. As also explained by Ghosh, Liang and Petrova (2020), significant premiums tend to emerge during peak markets, as it did until around 2007 previously.

In relation to Brounen and Laak (2005) and Morri and Baccarin (2016), we also found that price to book ratios increase with liquidity, with high significant explanatory power in our regressions. This could partly be explained by the fact that investors naturally perceive liquid companies, similar to companies with lower debt, as a safer investment, and are thus prepared to pay a higher price, similar to Brounen and Laak (2005) and Morri and Baccarin (2016). It could also be explained by the fact that expansionary companies tend to be more liquid with greater possibilities for increased future cash flows, as we also found an association between growth and price to book ratio, which thus increase the value of equity.

Similarly, we also found that lower level of debt leads to higher price to book ratios, so that companies with low debt are more likely to trade at premiums. Again, this would imply that investors perceive it as a safer investment due to greater financial health. However, as the correlation is not stronger than measured it would imply that debt can work in two ways, as higher debt increases leverage and return on equity, which also motivates higher share prices. However, contrary to Brounen and Laak (2005), Morri and Baccarin (2016) and Ghosh, Liang and Petrova (2020), we found no evidence displaying a significant connection between company size and price to book ratio. This does not mean that size has no effects on price to book ratio, but rather that expansionary and growing companies exist in all company size groups. Additionally, both Brounen and Laak (2005) and Morri and Baccarin (2016) discuss the possible ambiguous effects of size, where there are arguments and reasons that both large and small size could cause different levels of price to book value, where larger companies are more popular and established among investors but also harder to liquidate, for example.

Similar to our findings of a negative relationship between realized earnings and dividends, the correlation between EBVAT and price to book is negative and significant in both correlation and regression analysis, which contradicts previous research (Brounen & Laak, 2005; Ghosh, Liang & Petrova, 2020; Morri & Baccarin, 2016) that found that such performance affects stocks positively. The negative relationship between these variables is not necessarily causal and should not be seen as such, similar to what we found for dividends and EBVAT. Rather, it could be so that more expansionary oriented companies, as in faster growing and more liquid, tend to trade at premiums and possibly also tend to have lower EBVAT in relation to assets.

# 6 Conclusion

## 6.1 Concluding discussion

The purpose of this study is to enhance knowledge about whether fair value accounting in Nordic listed investment property companies causes procyclical effects on dividend payout and stock market behaviour. The purpose has been fulfilled by providing answers to the two research questions by utilizing a quantitative study of financial reporting from such companies in a Nordic context between the period of 2013-2020.

- What effect does unrealized gains or losses have on dividend payouts?
- What long term effect does unrealized gains have on price to book values?

Based on our quantitative analysis we have accepted our alternative hypothesis stating that there is a positive causal relationship between unrealized earnings and dividends. We can therefore answer the first research question and draw our first conclusion that unrealized earnings have significant effect on dividends. Although there are naturally other influencing factors, both investors and managers perceive unrealized earnings as persistent over time and good indicators future cash flows and thus view it as a base for dividend payout. Consequently, higher unrealized earnings tend to result in higher dividend payout, whereas unrealized losses tend to result in decreased or no dividend payout.

Our second conclusion is based on the fact that we have accepted our second alternative hypothesis stating that there is a positive causal relationship between unrealized earnings and stock market development. The answer to the second research question is that unrealized earnings also influence stock price development significantly. However, stock price development seems to be influenced by a broader set of factors in comparison to dividends. Both liquidity and dividend level were also shown to have significant impact on price to book values. Consequently, higher unrealized earnings tend to increase price to book ratios. This is due to the fact that investors seem to view unrealized earnings as a good indicator of future cash flows and growth and reliable part of equity, which thus generates and motivates higher share prices.

The main contributions of this thesis to the finance and fair value accounting literature include that we have shown that fair value accounting earnings reporting from Nordic investment property companies generates higher dividends, similar to other studies conducted within other markets, both in Europe and beyond (Chen & Gavius, 2016; Chen, Hellmann & Mithani, 2020; Sikalidis & Leventis, 2017). We have also shown that unrealized earnings affect price to book values of such listed companies on the Nordic stock markets, which is in line with what has previously been found in Chinese and Hongkong stock markets (Hsu & Wu, 2019; So and Smith, 2009), but as far as we know this has not been studied thoroughly on any other markets. Our most significant contribution in terms of originality is that we have also found that dividends, which is largely based on unrealized earnings, in turn also significantly affects price

to book values of Nordic investment property companies. This interconnection means that unrealized earnings have a double amplifying effect on price to book values, i.e., company market values, something that has not been explored nor found in previous research.

When considering current real estate and stock market development, these findings of causal procyclical effects are associated with certain company specific risks if the markets were to abruptly correct downward in the near future, which may cause many companies to experience significant decreases in equity and thus display liquidity problems involving difficulties raising funds and high exposure to increased interest rates. While fair value accounting inherently has procyclical and amplifying effects on dividends and stock market development, this development would likely be mitigated under the use of the historic cost model as unrealized earnings are not reported. Historic cost has some inherent issues as well since it involves greater information asymmetry, rather than amplification and procyclicality of reported figures. Concludingly, similar to fair value accounting for financial instruments, ditto for investment property will not necessarily cause future abrupt stock price crashes and bankruptcy for such companies but might very well serve as an exacerbating factor in such an event.

## **6.2 Limitations**

There are several limitations to this study. As the purpose of this research was to investigate unrealized earnings among Nordic listed investment property companies, this study is not generalizable or applicable to companies outside of the Nordics nor unlisted companies in the Nordic countries or beyond. However, the findings are similar to those of previous research in other settings, and we have employed similar operationalization in this study.

Additionally, there could be, as suggested in previous studies like Chen and Gavious (2016), some limitations with our measurements so that it does not capture the full effects of unrealized earnings on dividends in particular. The argument for this is that if earnings increase, dividends increase as well, but the dividend payout ratio in relation to earnings or assets might not increase at all as dividends tend to be kept stable over time. Similarly, if unrealized earnings decrease or are reported as loss, there will not necessarily be cuts in dividends as they should tend to be kept stable over time. Consequently, there is a chance that the magnitude and strength of results are understated due to the tendency to keep dividends stable over time regardless of reported figures. Furthermore, the differences in dividends strategy and shareholder orientation also have a possibility of understating the actual influence of unrealized earnings on dividends, as companies with different dividend levels might have equal or similar influence on dividends from unrealized earnings.

There might also be some similar issues with measuring the full effects of unrealized earnings on price to book value. The reason is that when unrealized earnings are reported, the equal increases of equity cause the current price to book ratio to decrease. Consequently, all other things equal, the share price needs to increase accordingly to restore prior price to book ratio.

Thus, there are some parts of the movements of price to book ratios caused by reported unrealized earnings that are not captured by measurement.

### **6.3 Further research**

For further research within this area, further development of operationalizing and measuring actual effects of unrealized earnings on dividends would be suitable, as we have outlined some shortcomings of current methods. As previously mentioned, investment property has also stood in the shadow of fair value accounting research related to financial instruments ever since the 2008 financial crisis. For further research within this area, it would therefore be interesting and of need to further investigate the effects of unrealized earnings on dividends and stock market development among investment property companies in other settings and legal regimes.

It could also be suitable for future research to employ qualitative interviews focused on understanding the reasoning around dividends and its influence from unrealized earnings within investment property companies related to the faithfulness of fair value estimates. Considering this study highlighted vast increases of estimated property value under fair value accounting and the associated procyclical effects, faithfulness and reliability is of high importance. Previous research by Dietrich, Harris, and Muller (2001) of fair values for investment property reported under U.K. GAAP in the 1990s showed that fair values were reported with conservative bias, and unrealized earnings showed lower variance, contrary to this study. However, recent studies about client pressures on auditors (Achu, 2013; Nordlund, Lorentzon and Lind, 2021; Selling & Nordlund, 2015) further motivate the need for research about the reliability of fair values in Nordic countries under IFRS to provide more clarity about current development that was observed in this study.

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# Appendix 1: Nordic countries comparison

Variable	Mean	Median	Std. dev	Trim. mean	Min	P 25	P 75	Max	N
<b>FVA</b>									
Denmark	0,40*	1,79	11,50	1,68	-55,26	-0,53	4,66	19,72	72
Finland	4,16	0,67	11,73	2,58	-8,37	-1,58	5,98	52,17	26
Norway	4,20	4,13	3,50	4,13	-2,16	1,52	6,83	12,18	30
Sweden	7,6*	4,95	11,99	5,62	-6,15	2,58	8,27	118,37	247
<b>DIV</b>									
Denmark	0,11*	0,00	0,21	0,08	0,00	0,00	0,17	0,78	72
Finland	2,52*	2,26	2,02	2,34	0,00	1,45	3,08	8,30	26
Norway	2,29*	1,07	5,17	1,07	0,00	0,51	1,99	28,87	30
Sweden	2,05*	1,62	2,89	1,72	0,00	1,11	2,23	36,29	247
<b>EBVAT</b>									
Denmark	2,40	2,79	25,67	3,41	-126,0	1,39	3,65	83,93	72
Finland	2,41	2,65	2,25	2,30	-0,76	0,28	3,34	7,79	26
Norway	4,24	3,66	4,38	3,62	-0,29	3,08	4,15	26,57	30
Sweden	2,87	3,18	6,02	3,13	-59,92	2,07	4,04	36,46	247
<b>DIVE</b>									
Denmark	6,80	0,00	12,82	4,92	0,00	0,00	12,56	63,64	72
Finland	90,69	75,48	71,09	89,12	0,00	41,45	140,11	212,50	26
Norway	59,85	30,22	80,77	49,33	0,00	12,42	65,35	337,50	30
Sweden	77,53	51,49	116,11	58,26	0,00	37,68	75,85	860,52	247
<b>P/B</b>									
Denmark	0,88*	0,79	0,46	0,85	0,20	0,60	1,00	2,50	72
Finland	0,87*	0,89	0,34	0,83	0,50	0,68	0,97	2,20	26
Norway	0,94	0,97	0,19	0,95	0,41	0,81	1,06	1,30	30
Sweden	1,21*	1,07	0,64	1,13	0,34	0,94	1,24	5,81	247
<b>DEBT</b>									
Denmark	63,77	64,09	17,45	64,22	11,30	57,20	72,50	100,23	72
Finland	50,21	52,73	7,31	50,89	25,46	47,42	54,99	60,39	26
Norway	54,66	56,15	14,90	56,55	2,30	53,82	62,01	67,07	30
Sweden	60,54	62,70	11,21	61,71	2,32	56,51	67,50	81,50	247
<b>CASH</b>									
Denmark	3,29	1,75	4,50	2,67	0,06	0,63	3,61	25,67	72
Finland	2,96	1,69	3,12	2,63	0,09	0,69	4,57	12,15	26
Norway	3,16	0,58	8,88	1,52	0,12	0,41	1,08	35,69	30
Sweden	3,75	1,63	8,30	1,63	0,03	0,6	4,00	64,39	247
<b>GROWTH</b>									
Denmark	28,15	2,03	163,7	5,59	-99,75	-8,97	12,57	1253	72
Finland	19,44	4,20	63,39	10,82	-52,72	-6,49	22,00	294,85	26
Norway	1,68	4,97	16,94	3,24	-49,00	-1,52	11,33	26,43	30
Sweden	28,57	12,52	56,62	20,14	-52,19	3,42	28,11	516,50	247
<b>SIZE</b>									
Denmark	4262	1179	9098	2865	19	154	2727	37063	72
Finland	18854	2004	22590	17341	66	816	42393	66922	26
Norway	26222	24760	17548	26078	143	14596	43177	54256	30
Sweden	20841	11103	24962	17614	25	1934	32510	129074	247

Sig. marked with \*



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