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Causes and consequences of fair value accounting in the Canadian real estate industry

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Abstract

This thesis investigates IAS 40 – Investment property with respect to Canadian real estate firms, following the Canadian adoption of IFRS in 2011. By looking at both the factors that impact firms' accounting policy choice, as well as the consequences that the chosen accounting method has, a complete picture of the conversion to the new standard is given. The results provide evidence that the financial performance prior to IFRS has a strong positive relation to choosing the fair value method to account for investment property. Furthermore, strong evidence is provided that the book value of a firm, when calculated using fair values as opposed to historical costs, shows considerably higher value relevance. Lastly, results show evidence that firms adopting the fair value accounting method following IFRS adoption experience a decrease in information asymmetry, contrary to historical cost accounting firms, who do not experience this decrease.

Keywords: IFRS, IAS 40, Investment property, accounting policies, fair-value

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1. Introduction

Since its development many centuries ago, the primary goal of accounting has been to record transactions and accounts in a proper and verifiable manner. Luca Pacioli, nicknamed: 'the father of accounting', published a work on double-entry bookkeeping back in the fifteenth century. He laid the foundation for what would become modern-day accounting. Central was the recording of transactions and assets at their historical cost, and keeping track of those numbers for validation and confirmation in the future (Lauwers & Willekens, 1994). However, the business environment has not stood still since the origin of accounting. On the contrary: companies and markets have been, and still are, constantly evolving. For a vast number of commodities and goods markets have increasingly globalized. Consequently, market prices are under constant pressure of a dynamic global economy. The real estate industry is certainly no exception. Consider London: the price of an average house has risen by 459% between 1994 and 2014 (ONS, 2014). Such significant changes in value in just twenty years give rise to the question whether the measure 'historical cost' still provides the most optimal information on recorded accounts.

To answer that question, one must consider the purpose of financial reporting, jointly defined by the International Accounting Standards Board (IASB) and the Financial Accounting Standards Board (FASB): *'The objective of general purpose financial reporting is to provide financial information about the reporting entity that is useful to existing and potential investors, lenders and other creditors in making decisions about providing resources to the entity.' (IASB, FASB, 2005).* Useful being a key-word in this objective. Next to the defined purpose, the two boards mentioned the 'qualitative characteristics' of financial reporting, defined by the IASB as '*the attributes that make financial information useful*'. The two fundamental qualitative characteristics as defined by the IASB and the FASB in 2005 were (1) relevance and (2) reliability (IASB, FASB, 2005). This is thought-provoking, as there is a long standing debate about whether those two characteristics are in some ways contradicting (Duncan & Moores, 1988; Dye & Sridhar, 2004; Johnson, 2005; Measelle, 1994). In fact, the 'cross cutting issues' relating to relevance and reliability were officially addressed in November 2004, during board meetings of the FASB and IASB. The issue led them to create a joint Conceptual Framework on the qualitative characteristics of relevance and reliability (IASB, FASB, 2005). The boards define three characteristics of reliability: (1) faithfulness, (2)

verifiability, and (3) Neutrality. Relevance is split into two sub qualitative categories: (1) ability to impact decisions, and (2) timeliness.

To illustrate the debate surrounding relevance and reliability, suppose an account that records a property that was acquired in London in 1994. The asset is recorded at cost and the relevant purchase contracts and transaction records are filed. This account, recorded using historical cost accounting (HCA), fits all the reliability sub categories: it can be *verified* using the filed documents. Its value is agreed upon by two willing parties, implying *neutrality*. The combination of those factors, combined with filed evidence means it is *faithfully* presented to any and all users of the information. All three reliability boxes are ticked; hence this asset's recorded value can be considered reliable.

However, considering the same property in 2014: the fair value has deviated substantially from this recorded amount. To what extent can this account, the property recorded at its historical cost, be regarded as relevant? A potential investor or other party willing to buy the asset will certainly not consider the presented information *timely*. He must resort to other information sources to determine the current value of the asset. Hence the information provided from the HCA method is *unable to impact this party's decisions*, thereby making the information not *relevant* following the definition that the IASB and FASB provide. Recording this asset at its *fair value* (current market value) would solve the relevance issue, while at the same time giving rise to a new issue: reliability. If the value comes from an objective source such as a quoted price from an active market, this value is *neutral* and can be *verified*. However, if no active market is available, the number may be not be neutral and will be difficult to verify. This illustrates where the debate surrounding fair value accounting (FVA) and historical cost accounting (HCA) finds its origin. The two fundamental qualitative characteristics of financial reporting: relevance and reliability, are at the same time the main and distinctive features of two different accounting methods. FVA considers up-to-date values taken from the market and is therefore considered especially relevant. HCA on the other hand, builds on amounts paid in the past and applies constant depreciation rates and is therefore more easily verifiable and objective and as a consequence, still following the definition provided by the FASB and IASB, more reliable (FASB, 2005; IASB, 2005).

Interestingly, the IASB published a new Conceptual Model Exposure Draft in 2015 (IASB, 2015). This means the above mentioned jointly developed model by the IASB and

FASB, is no longer the most current. In this new publication, ‘reliability’ has been replaced with ‘faithful representation’ and the three characteristics of reliability (faithfulness, verifiability, neutrality), are now three characteristics of faithful representation: completeness, free from error, and neutrality). This does not mean the above mentioned discussion is no longer relevant, as there is still a tradeoff between FVA and HCA. And the difference between ‘reliable’ and ‘faithfully represented’ can argued to be quite subtle. On the other hand, could these subtle changes nonetheless signal what path the IASB has chosen? Reliability and verifiability, two obstacles for FVA, have been cleared away to make room for ‘faithful representation’, a characteristic that, unlike its predecessor, does not in itself contradict FVA.

1.1 Problem definition

As described in the previous paragraph, there are arguments in favor of FVA as a (partial) substitute for HCA. However, it is certainly not without its controversies. Prior studies (e.g. Cairns et al., 2011; Ramanna, 2013; Christensen & Nikolaev, 2013; Hodder et al., 2014; Müller et al., 2015) have given it much attention, yet still there is no conclusive consensus about which method is superior in different settings. FVA is not a new concept, on the contrary; Fabricant (1936) already discussed the concept of revaluing recognized assets based on market values eighty years ago (Fabricant, 1936). However, in the past years there have been developments surrounding the accounting method that are worth noticing. Some years ago, the IASB has published a single standard for fair value measurement (IFRS 13, 2011). The standard was a product of the joint effort of the IASB and its U.S. equivalent, the FASB, to come to a common international definition and subsequent common fair value measurement and disclosure standard (ASC Topic 820, 2011; IFRS 13, 2011). This joint effort signals that both boards consider such common international definition a current and relevant topic. As of 2016, 93% of jurisdictions have made a public commitment to IFRS standards (IASB, 2016). The combination of the IASB's dedication to FVA and the widespread international adoption of IFRS, indicates evermore firms are confronted with fair value accounting requirements. The question arises in what way firms and investors are reacting to the changes in policy. More specifically: 'do the changes in policy indeed have the desired effects: to make financial information more relevant?' One way to measure this is to compare the correlation of the book value of equity with the market value of equity under both opposing accounting standards.

An important distinction to be made when considering the FVA versus HCA debate, are the different asset classes to which these two accounting methods may apply. The IASB recognizes the following asset classes: Inventory, Property Plant & Equipment (PPE), Intangible assets, Investment Property, Financial assets, deferred tax assets, defined benefit (pension) assets, and 'other assets' (IFRS, 2012). The debate regarding HCA and FVA can be applied to PPE (IAS 16), Investment Property (IAS 40), and Financial assets/instruments (IAS 39, IFRS 9). Starting with financial Instruments: the accounting treatment of financial instruments is difficult to summarize because there is a large diversity of financial assets, all of which have distinctive accounting treatments set out by the IASB. Simplified, IAS 39 boils down to the following: financial assets must be accounted for using FVA, unless the assets are

held to maturity. When the assets are held to maturity, they must be accounted for using amortized cost. This isolates financial assets from the FVA vs. HCA debate as set out in this thesis, in the sense that FVA for financial assets has been made the rule, and HCA the exception.

That leaves PPE and Investment Property. Starting with PPE, IAS 16 reads: "*Property, plant and equipment are tangible items that: (a) are held for use in the production or supply of goods or services, for rental to others, or for administrative purposes; and (b) are expected to be used during more than one period."* PPE must be accounted for in the following way: "*measurement at recognition at its cost. After recognition, an entity shall choose either the cost model (HCA) or the revaluation model (FVA) as its accounting policy and shall apply that policy to an entire class of property, plant and equipment."* This implies that firms are given a choice to either apply FVA or HCA when accounting for PPE. This choice makes the asset category susceptible to the debate.

A similar choice must be made when accounting for investment property (IAS 40). *Investment property is property (land or a building—or part of a building—or both) held (by the owner or by the lessee under a finance lease) to earn rentals or for capital appreciation or both, rather than for: (a) use in the production or supply of goods or services or for administrative purposes; or (b) sale in the ordinary course of business.* Investment property must be accounted for in the following way: measurement at recognition at its cost. After recognition: either: (a) fair value model, under which an investment property is measured, after initial measurement, at fair value with changes in fair value recognised in profit or loss; or (b) a cost model. The cost model is specified in IAS 16 and requires an investment property to be measured after initial measurement at depreciated cost (less any accumulated impairment losses). An entity that chooses the cost model must disclose the fair value of its investment property (IAS 40).

An important difference between PPE and Investment Property is the nature of both asset categories. PPE as described above is primarily held for use in the production or supply of goods and/or services. They are means to an end, facilitating value creation by the organization's operations. Because of this, it is quite easily defendable to account for these assets using HCA. The value fluctuation of assets typically used till the end of their useful lives is not particularly interesting to users of financial statements. They are most likely more

interested in the value that the firm is able to create using these assets. Contrasting, Investment Property as described above is held to earn rentals, for capital appreciation, or for both. This implies that these kinds of assets are not means to an end, but ends themselves. As a result, HCA for Investment Property appears less intuitive than for PPE. This is because the value fluctuations of these assets are of interest to users of the financial statements.

This line of reasoning is supported by literature. Christensen and Nikolaev (2013) have studied accounting firms' accounting policy choice for both PPE and Investment Property and find that firms, given the choice, do not voluntarily choose to account for PPE using FVA. For PPE, only 3% of the firms in their sample use fair value accounting. For investment property, about 50 percent choose FVA over HCA. This leads them to conclude that 'fair value is unlikely to become the primary valuation method for illiquid non-financial assets on a voluntary basis.' Following the reasoning in this paragraph, this thesis will focus on Investment Property and the associated implications of the choice offered between FVA and HCA.

The opportunity for research relating to the above mentioned, is IAS 40 – Investment property (IFRS, 2003). IAS 40 mandates firms to choose between FVA and HCA when accounting for Investment Property. The choice between FVA and HCA firms faced, following the issuance of IAS 40 has been researched in different jurisdictions and settings (Cairns, Massoudi, Taplin, & Tarca, 2011; Linsmeier, 2013; Müller, Riedl, & Sellhorn, 2015; Quagli & Avallone, 2010) Contrasting to the priority given to FVA by the IASB and FASB, the market appears less enthusiastic. Christensen and Nikolaev (2013) interpret these results as an indication of a misalignment between what the IASB prescribes, and what the market wishes.

1.2 Research Motivation

This potential misalignment between what the standard setters are prescribing and what the market chooses forms the foundation for this research. Prior research has provided evidence that although firms are allowed to opt for FVA when accounting for PPE, very few firms opt for this account standard in practice. However, investment property from this research perspective is a more interesting asset class.

The Canadian Accounting Standards Board (AcSB) converted from Canadian GAAP to IFRS in 2011 (IASB, 2016). There are several reasons that make the Canadian setting an interesting one. First of all, unlike several European countries and Australia, Canadian GAAP did not allow for fixed asset revaluations, a practice that can be seen as a form of FVA, because assets may be revaluated based on their current market value. Under IFRS, fixed assets such as Investment Property and Property, Plant & Equipment (PPE) may be recognized either following a HCA or FVA, but in any case the fair value has to be disclosed. Because Canadian GAAP did not allow asset revaluations prior to IFRS adoption, Canadian companies are less familiar with asset revaluations on the balance sheet. That implies that Canadian companies may be even more reluctant to adopt FVA compared to companies in that are experienced with fixed asset revaluations. As a consequence, the stated misalignment between standard setters and the market as found by Christensen and Nikolaev (2013), may be even more severe in Canada. Secondly, although the European transition to IFRS and the subsequent possibility to apply FVA has received ample researchers' attention (e.g. Dietrich et al. 2000, Muller et al. 2008, Müller et al. 2015), the Canadian conversion to IFRS and its subsequent exposure to FVA has received far less notice. The final aspect that makes the Canadian case interesting is the interconnectedness to the United States economy. In 2015, Canada and the U.S. had a goods trade between them of 575,5 billion US dollars. This amount makes Canada the second largest trade partner of the U.S., responsible for 15,4% of total U.S. trade (census.gov, 2016). Additionally, U.S. Foreign Direct Investment in Canada totaled 387,7 billion Canadian dollars, making it the largest foreign direct investor by a distance (statcan, 2016). The U.S. is one of the very few countries left in the world that have not converged to IFRS (IFRS, 2016). Therefore, the U.S. are likely to closely watch the developments of IFRS adoption by their important economic partner and geographical neighbor, including the developments regarding FVA for various asset classes.

This paper intends to investigate the choice Canadian real estate firms faced when IFRS was adopted in 2011; to either continue to account for investment property using HCA or to adopt the FVA method. This leads to the following research question:

"Fair value accounting for Investment Property: What are causes and consequences of the chosen accounting policy?"

By looking at a country that has relatively recently adopted IFRS as a substitute for the previous national accounting standards, the choice drivers and effects of the new accounting standard can be reviewed. This paper will research two aspects of choosing between FVA and HC. First of all, it intends to find out what the drivers are for firms to opt for one or the other accounting method. This leads the following sub-question:

What are choice drivers for Canadian real-estate firms when opting between HCA and FVA for Investment Property?

Secondly, this paper intends to find out what the consequences are of the chosen accounting method. Specifically, whether investment property accounted for using FVA has a stronger correlation to the market value of the firm compared to using historical cost accounting. This leads to the following sub-question:

Is fair value accounting more value relevant than historical cost accounting when accounting for investment property?

Finally, this paper will research whether as a consequence of choosing fair value accounting over historical cost accounting for investment property the information asymmetry decreases. This leads to the following and final sub-question:

Does fair value accounting as a substitute of historical cost accounting for investment property decrease information asymmetry?

1.3 Contribution

This research contributes to the literature in several ways. First of all, it adds to existing literature surrounding the mandatory choice between FVA and HCA, by taking the research to a new and unexplored setting: the adoption of IFRS in 2011. Secondly, it provides a more complete picture of the problem at hand. Where previous research often limited itself to merely firms' choice drivers (e.g. Cairns et al., 2011b; Christensen & Nikolaev, 2013; Demaria &

Dufour, 2007; Quagli & Avallone, 2010), this study takes the implications of the choice into consideration as well. Firstly, the effects of FVA on the value relevance of the financial statements (correlation with the market value) is researched. Secondly, the effect of FVA on information asymmetry (proxied by the bid-ask spread) is researched. As such, this thesis considers the introduction of FVA to the Canadian real estate industry in its broadest sense.

1.4 Structure

The remainder of this thesis is structured as follows. Chapter 2 provides a theoretical framework on the basis of which the empirical results will be interpreted. Chapter 3 contains the hypotheses development based on prior empirical literature. Chapter 4 provides an explanation of the models used to test the developed hypotheses. Chapter 5 discusses the sample, presents descriptive statistics, and the empirical results. Chapter 6 discusses the findings of the research and makes a connection to findings in prior academic literature. Chapter 7 completes this thesis by providing a summary and conclusion.

2. Theory and Literature review

In this section, the theoretical framework will be discussed in order to explain, predict, and understand the empirical results found in this research. The following concepts will be discussed: Positive Accounting Theory (PAT), agency theory, and the related concept information asymmetry. Next to the theoretical framework, prior literature on the trade-off between FVA and HCA, including potential implications for value relevance will be discussed. Finally, the specific implications, including prior academic literature, for the real estate industry will be elaborated on.

2.1 Positive Accounting Theory and Accounting Policy Choices

The majority of accounting policy choice research builds upon Positive Accounting Theory (PAT) as a theoretical foundation for the interpretation of empirical results. PAT is a theory that seeks to explain actual accounting choices and behavior. This is in contrast to Normative Accounting, which prescribes optimal accounting practices. Jensen & Meckling (1976) state that PAT is able to '*explain why accounting is what it is, why accountants do what they do, and what effects these phenomena have on people and resources utilization'.* PAT considers a firm in coherence with the theory of the firm as set out by Jensen & Meckling: as a central hub in a network of contracts. Management is seen as one of the different parties that engage in contracts with one another, with the firm as a central point in the web (Jensen & Meckling, 1976). Management' actions are predicted to be guided by the drive to minimize contracting costs. Positive accounting theory predicts and explains accounting practices, including accounting policy choices made by management. The choice firms faced after the IFRS implementation in Canada in 2011; to either adopt FVA or continue using HCA, is an example of such an accounting policy choice. The results and hypotheses in this paper relating to the choice will build on PAT to predict and explain managerial behavior resulting in accounting policy choices. This will be further elaborated upon in chapter 3.

2.2 Agency theory

Agency theory describes the relation – and subsequent conflict of interests – between principals and agents. The principals are parties that delegate work to agents. An example of such

principal agency relation is the one between shareholders (*principles*) versus management (*agents*) of an organization. The theory includes certain assumptions about people that affect the relation between agents and principals. Firstly, the theory assumes that all people are acting out of self-interest. Because the interests of principals differ from those of the agents and the agents supposedly act out of self-interest, a conflict of interest arises. The principals will have to control the behavior of the agents in such a way, that the agents act in accordance with their interests. This can be done by employing punishment- and reward systems. A related concept within this relation is information asymmetry. Information asymmetry is the misalignment between what agents know and what principals know. In terms of the relation between shareholders and management, this information asymmetry means management will generally be better informed than shareholders. This is a direct consequence of the separation of ownership and control. A way of mitigating this information asymmetry is the publication of financial statements. By publishing financial statements, management effectively shares the information it possesses with shareholders and other users of the financial statements. Investors will base decisions on the information that they extract from the published financial statements (Fama & Jensen, 1983).

2.3 Fair Value Accounting

Regulators have not ignored the discussion surrounding FVA and HCA as opposing measures for certain accounts and asset classes. IFRS 13 – fair value measurement is the standard that defines fair Value Measurements. This statement defines fair value as: *'the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date' (*IFRS 13). Next to providing a definition, the standard also specifies how fair value should be measured. It distinguishes three levels of input for fair value measurement. The highest level inputs (level 1 inputs) are quoted prices that the entity can access at the measurement date. Reconciling with the above mentioned definition, it becomes apparent that this is the most valuable input in terms of fair value determination, as it is the price that is actually paid between market participants at the measurement date. Level 2 inputs are inputs other than the quoted market prices from level 1 yet are observable either directly or indirectly (e.g. quoted prices for similar assets or quoted prices for identical assets in inactive markets). Finally, level 3 inputs are unobservable inputs for the asset or liability (IASB, 2011). Level 3 inputs are based upon the best possible information the entity has access to, which often includes the entity's own data. IFRS 13 is

used as a single IFRS framework for measuring fair value for other IFRSs that require or permit fair value measurements to refer to.

IAS 39 – Financial Instruments: Recognition and Measurement describes how financial assets should be accounted for. With only a small number of exceptions, the standard prescribes that financial assets and liabilities should be measured at fair value. Although several researchers have argued (e.g. Wallison 2008, Whalen 2008, and Forbes 2009) that FVA may have aggravated the financial crisis of 2008, FVA has become the accounting standard of choice for financial assets and liabilities.

IAS 40 – Investment Property prescribes how property (land and/or buildings) held to earn rentals or capital appreciation should be accounted for. Unlike IAS 39, which for most assets *mandates* the use of FVA, IAS 40 allows a firm to choose between either a cost model or a fair value model to measure investment property after initial recognition at cost. IAS 16 – Property, Plant and Equipment prescribes how Property, Plant and Equipment (PPE) must be accounted for. Much like Investment Property, PPE is initially measured at cost and may subsequently be measured either using a cost or revaluation (fair value) model.

2.4 The value relevance of fair value accounting

Value relevance in accounting literature is the correlation between accounting figures and the stock market. In the case at hand, the accounting measure is either investment property measured at fair value or at historical cost. These two measures can then both be compared to the market value of the respective firms. The majority of research on the topic of value relevance of FVA as an accounting measure focusses on financial assets (e.g. Barth, 2000; Blankespoor et al., 2013; Koonce et al., 2011; Wallison, 2008). Barth et al. (1996) find evidence that fair value of financial assets is associated with banks' share prices for a US sample with data from 1992-1993. Nelson (1996) carries out research in a comparable setting and he too finds evidence for correlation between banks' share prices and fair values of assets and liabilities. These papers however, are both focused on financial institutions and their corresponding financial assets and liabilities. This thesis however, is more closely related to research concerning non-financial assets. Canadian GAAP, like US GAAP still, did not allow for upwards revaluations of fixed assets. However, in the UK and Australia, such revaluations

were permitted even before the implementation of IFRS. Therefore, much of the early research towards fair value of non-financial assets is based in these countries. Easton et al. (1993), Barth & Clinch (1998), Aboody et al. (1999) and Muller & Riedl (2002) all focus on fixed asset revaluations. Easton et al. (1993) use a large ten-year sample of Australian firms starting in 1981, examining the association between revaluations of fixed assets and stock prices and returns. They find that book values in combination with asset revaluations are more aligned with the market value of a firm than book values alone. Barth and Clinch (1998) also look at Australian firms and consider a whole range of asset classes. They find that revalued financial and investment assets are consistently significantly associated with share prices. For Property Plant & Equipment the findings are inconclusive, the relation with stock prices of this asset class differs per industry (Barth & Clinch, 1998). Aboody et al. (1999) use a UK sample and test whether upward of revaluations of fixed assets by UK firms are positively associated with future positive change in operating performance. Rather than only looking at the relation between asset revaluations and stock prices, they test the relation between asset revaluation and firm performance measured by operating income and cash from operations. They find a significant positive relation between UK firms' asset revaluations and future changes in operating performance one, two, and three years after revaluation.

Dietrich et al. (2000) consider specifically the asset class investment property. They investigate the reliability of mandatory annual fair value estimates for UK investment property. Their research provides evidence that appraisal estimates are superior to respective historical cost amounts. The estimates are considerably less biased and more accurate measures of selling price. Additionally, the authors research the drivers for management to choose between permissible accounting methods with different levels discretion of fair value reporting. The research suggests that managers choose between methods to report higher earnings, time asset sales to smooth earnings and boost fair values prior to raising new debt. Jaggi & Tsui (2001) use a Hong Kong sample to investigate managers' motivation for upward valuation of fixed assets. In line with Aboody et al. (1999) the authors find revaluations are positively associated with a firm's future operating performance. This result suggests that the managers' primary motivation for upward revaluation of fixed assets is to signal fair value of assets to users of financial statements. Muller & Riedl (2002) compare asset revaluations made by external appraisers to revaluations made by internal appraisers and find that using internal appraisers leads to more information asymmetry compared to external appraisers. The findings are not conclusive on the value relevance of asset revaluations.

Muller et al. (2008) investigate investment property firms' choice to either opt for historical cost or fair value accounting for their primary asset, real estate. Timing their research around the adoption of IFRS in the European Union, the study exploits IAS 40 – Investment Property that requires firms to make a choice between the two accounting methods. They find that firms that are operating in countries that previously allowed fair values to be incorporated in the balance sheet through asset revaluations are more likely to opt for fair value after IFRS implementation, suggesting that prior accounting method affects the reporting decision managers make. Additionally, Muller et al. (2008) find that firms opting fair value accounting are more likely to have dispersed ownership. This could be explained by these types of firms having a greater need to counter information asymmetry that is inherent to having a dispersed ownership as opposed to concentrated ownership. Finally, Muller et al. (2008) find some evidence that managers use fair value accounting as a tool to maximize reported earnings.

2.5 Fair value and information asymmetry

As mentioned earlier, there are qualitative characteristics linked to FVA that make it timelier and increases its impact to affect investors' decisions. Evidence of this, measured by its relatively higher correlation to stock prices and returns, compared to HCA, has been found (Easton et al., 1999; Barth & Clinch, 1998; Dietrich et al., 2000; Müller et al., 2015). However, researchers claim that fair value measures are subject to management manipulation (Wallison, 2008), or have an aggravating effect on economic crises (Whalen, 2008). In the case of Financial Assets, the theory that fair values are more strongly correlated to stock prices and returns is straightforward, because these assets are liquid and, unless held to maturity, will directly affect income in the form of a gain or loss on sale. That means that regardless if accounted for using HCA or FVA, the fair value of the asset or liability will impact income, unless held to maturity. In the case of investment property, if accounted for at fair value, it will directly affect income through profit/loss, but will not directly affect income if accounted for at HC. IAS 40 provides a definition of Investment Property: *'property (land and/or buildings) held to earn rentals or for capital appreciation (or both)'* (IAS 40, 2003). Investment property purely held for the capital appreciation will, much like the majority of financial assets held for trading, directly affect income through profit or loss in the form of a loss or gain on sale. However, a change in fair value of investment property held primarily to

earn rentals, will not directly affect income through a loss or gain on sale, simply because the property is not sold, but retained to earn rentals in future periods. The adoption of IFRS in Canada in 2011 meant that, even for properties held to earn rental income, firms had to disclose or recognize fair values. This means Canadian firms were obliged to provide more timely information to investors through their financial statements, compared to before IFRS adoption. The effect that this has on the information asymmetry between insiders and investors provides an opportunity for research, as Muller et al. (2011) have exploited in their study on the European real estate industry (Muller et al., 2011).

Information asymmetry is the gap that exists between the information that investors on the one hand, and insiders of a firm on the other, have at their disposal. Every firm suffers from this information gap (Flannery et al., 2004). This gap that exists between the information that each party has, results in adverse selection (Akerlof, 1970). Akerlof (1970) introduced the topic of adverse selection in his paper 'Market for Lemons'. The essence is that one party holds some amount of relevant information that the other does not. As a result, the negotiated price between the two parties will not be fair. 'Signaling' is the concept of one party disclosing information to the other, thereby mitigating or completely closing the information gap (Spence, 1973).

In the case of accounting for investment property this piece of relevant information may be the fair value of the properties accounted for. Under Canadian GAAP, investment property was recognized at historical cost and no disclosure of property fair values was required (KPMG, 2010). This means there was a potential for insiders to have an informative edge over less informed investors, if they noticed significant changes in investment property fair values. After Canada enforced IFRS in 2011, firms were forced to either recognize or disclose fair values of investment property (IFRS 13, 2011). If the fair value of investment properties is indeed a relevant piece of information, a decrease of the information gap is realized. The purchase of stock in a company is also a purchase of an asset by one party from another. Sellers and buyers are brought together via brokers or on the stock market, where ask prices are quoted (the price a selling party is willing to accept), and bid prices are quoted (the price a buying party is willing to offer). The difference between these amounts can be seen as an operationalization of information asymmetry.

Muller and Riedl (2002) investigate the effect of fair value estimates on information asymmetry and find evidence that market participants price fair value estimates made by

internal appraisers differently from estimates by external appraisers, resulting in lower information asymmetry for firms employing the latter (Muller & Riedl, 2002). Muller et al. (2011) investigate the mandatory disclosure of fair values by European real estate companies, and find evidence for a decrease in information asymmetry, measured by bid-ask spread, as a result of fair value disclosures (Muller et al. 2011).

3. Hypotheses development

3.1 Accounting policy choice hypotheses

3.1.1 Financial leverage

Accounting choices and firms' financial leverage has been investigated extensively. Although the findings are not completely one-sided, previous research has shown that a higher level of debt-to-equity (financial leverage), leads to a higher probability of management choosing accounting methods to increase income and/or equity (Watts & Zimmerman, 1990). Additionally, Fields et al. (2001) find that managers select accounting methods to increase their compensation and reduce the likelihood of bond covenants violations.

Standards on HCA dictate that assets must be recorded at the historical purchasing price and must be depreciated over their useful life. Increases in market values of these assets may not be recorded. Contrasting, FVA allows for increases in market value of assets to be recorded through the profit and loss statement, on the balance sheet. The fair value model can therefore be regarded as an accounting method that, compared to the historical cost method, most allows for increases in income and equity. FVA as opposed to HCA can therefore be used as a tool by management to improve the leverage ratio of the firm. I expect firms that have high leverage to be more inclined to opt for FVA, because these firms have the need. As a result, the following hypothesis is developed:

H1: The probability that the firm chooses the fair value model increases as the firm is increasingly financed with debt.

3.1.2 Big 4 auditor

The relation between information disclosure and the type of auditor has been researched quite extensively. Being audited by a Big 4 auditor has been found to lead to increased voluntary adoption of IFRS (Street and Bryant, 2000, Glaum and Street, 2003). Singhvi & Desai (1971) find that firms audited by a Big 4 auditor tend to disclose more information than firms that are audited by non-Big 4 auditors. The logic behind this stems from the Big 4 auditor, having an equally valuable and fragile reputation to uphold, may push the client to disclose more information to improve the perceived quality of audited financial statements. The fair

value model reveals more information about the actual state of assets compared to historical costs. Additionally, Canadian – GAAP never allowed for assets to be recorded at fair value, unlike many European countries in which domestic accounting regulations did allow for recognition of assets in a way similar to IAS 40. The reformulation of the main asset class from one accounting method to another involves risk and requires a large amount of resources. A relatively smaller Canada-domiciled auditor may not be as well-equipped in terms of prior experience and international expertise to guide clients to such a demanding converging process. As a result, firms audited by Big 4 auditors may be more willing to change the accounting method compared to their non-Big 4 audited peers. Following this discussion, the second hypothesis is added:

H2: The probability that the firm chooses the fair value model is higher if the firm is audited by a Big 4 auditor, compared to a non-Big 4 auditor.

3.1.4 Financial performance

The impact of the financial performance of a firm as a choice driver for accounting policy choice is difficult to predict. However, following the reasoning of the previous hypotheses, a line of reasoning can be established. Darenidou et al. (2006), Jermakowicz and Gornik-Tomaszewski (2006) and EY (2006) find that the costs of the additional resources needed by companies for IFRS implementation are significant. The Institute of Chartered Accountants in England and Wales (ICAEW, 2007) has broken down the costs of implementing such a new accounting system into several different cost drivers, (e.g. hiring dedicated staff, retraining existing employees, changing software and systems). Given that the transition to a new accounting method for investment property will require a large amount of resources and time, firms that lack financial health may be reluctant to undertake such a costly operation as changing the entire accounting model. That leads to the formulation of the third hypothesis:

H3: The probability that the firm chooses the fair value model is affected by the financial performance of the firm.

3.1.4 Information Asymmetry

Adopting the fair value model as opposed to maintaining the historical cost model provides an opportunity for management to increase the informativeness of published financial statements. This relates to the concept of signaling (Spence, 1973). Management may see the adoption of IFRS and subsequent FVA for investment opportunity as a tool to decrease information asymmetry. Firms experiencing high information-asymmetry are expected to feel a relatively higher need to reduce the information gap that exists between the firm and investors. I therefore expect firms that experience high information asymmetry prior to IFRS adoption, to be more inclined to opt for FVA. That theory leads to the fourth hypothesis::

H4: The probability that the firm chooses the fair value model to account for investment property increases as the information asymmetry of the firm is higher.

3.2 Effects of fair value accounting for investment property

3.2.1 Value Relevance

As mentioned in earlier chapters, the main argument in favor of fair value recognition of assets as opposed to the historical cost method is a higher value relevance of the accounting measure. The definition of value relevance as provided by Easton et al., (1993) is a higher correlation with the stock market. The reasoning is that the book value of equity, calculated as the book value of assets minus the value of total liabilities, provides an outdated picture of the actual current value of equity. If assets are revaluated at fair value, or 'marked-to-market', the calculated book value of assets becomes more relevant. As a result, the measure 'book value of equity' as a whole should benefit and become more in line with market value of equity. This leads to the following hypothesis:

H5: A firm's book value of equity calculated using FVA, has a higher association with the market value of equity, compared to the book value of equity calculated using HCA.

3.2.2 Information Asymmetry

By recognizing investment property at fair value and reporting changes in value in the primary financial statements, real estate firms increase the informativeness of these statements. Leuz and Verrecchia (2000) look at bid-ask spreads for firms listed on the Neuer Market, a German stock market that has higher disclosure requirements compared to the main national stock listing. They find that these firms have lower bid-ask spreads than firms listed on the Frankfurt Exchange. Muller et al. (2011) investigate the mandatory disclosure of fair values by European real estate companies, and find evidence for a decrease in information asymmetry, measured by bid-ask spread, as a result of fair value disclosures (Muller et al. 2011). If investors indeed perceive the published financial statements to be more relevant and are able to derive more timely changes in property values, information asymmetry should decrease, compared to the information asymmetry that was experienced before adoption of the fair value model. Not only does the information gap have the potential to decrease within the subsample of fair value adopting firms, relative to the subsample of firms that did not converge to the fair value model, the information asymmetry on average should be lower if the suggested effect is true. However, as outlined earlier in this paper there is a debate whether the increased relevance of the fair value model over the historical cost model comes at the price of decreased reliability. The risk for decreased reliability being that there may be measurement error and an incentive for management to inflate reported asset values for personal benefit in the form of higher earnings and therewith receivable bonuses (Dechow et al., 2009). Nonetheless, in line with standard setters' policy and prior research, the following hypotheses are formed:

H6a: Firms adopting the fair value model for Investment Property, will experience a decrease in information asymmetry following IFRS implementation.

H6b: Firms keeping the historical cost model for Investment Property, will *not* experience a decrease in information asymmetry following IFRS implementation.

4. Research Methodology

4.1 Model 1 – Choice drivers for fair value adopting firms

Because the dependent variable in the first model is binary (either recognizing investment property using FVA, or not), a binary model is used as opposed to a linear model. A logistic model is most suiting in situations where the dependent variable is binary. This in line with prior literature on accounting policy choice e.g. Cushing & LeClere (1992), and Steven (1998). Based on the aforementioned discussion, the following logistical model is developed, examining a firm's choice to either maintain a cost model or adopt the fair value model:

$$FV_{ADOPT} = \alpha + \beta_1 LEV_i + \beta_2 ROA_i + \beta_3 BIG4_i + \beta_4 \text{AVG\_BAS}_i + \beta_5 Size_i + \varepsilon_i$$

FV_ADOPT is the dependent variable in the form of a dummy variable. The first independent variable, *LEV*, pertains to H1 and is the firm's Leverage in the year prior to IFRS adoption. The expected sign for ß$_1$ is positive, as higher leverage is expected to be positively related to FVA adoption. To test H2, *BIG4* is included in the model. The expected sign of ß$_3$ is positive, as working with a Big 4 auditor is expected to be positively related to FVA adoption. To test H3, *ROA* is added to the model. The expected sign of ß$_2$ is positive, as better financial performance is expected to be positively related to FVA. To test H4, the last hypothesis pertaining to model 1, *AVG_BAS* is added to the model. The expected sign of ß$_4$ is positive, as higher information asymmetry is expected to be positively related to FVA adoption. Additionally, the control variable *SIZE* is added to the model to control for the effect the size of a firm has on accounting policy choice. To clarify the conceptual relations of the above model, please refer appendix 1 for the Libby boxes.

4.2 Model 2 – Consequences of fair value adoption: value relevance

Inspired by the model used by Francis and Schipper (1999), the following two models are introduced:

Model 2A

$$MVEQ_i = \alpha + \beta_1 HC\_BVEQ_i + \varepsilon_i$$

Model 2B

$$MVEQ_i = \alpha + \beta_1 FV\_BVEQ_i + \varepsilon_i$$

The models are ordinary least squares (OLS) regression models, measuring the association of investment property measured by the chosen accounting policy, with firm market value. *MV* is the firm's market capitalization. Model 2A includes *HC_BVEQ*, measured as the book value of investment properties at historical costs minus total liabilities, as a sole explanatory variable. Model 2B is equal to Model 2A, however the explanatory variable in this case being *FV_BVEQ*, measured as the fair value of investment properties minus total liabilities. Both models will return a value for R-Squared measuring the strength of the model. As there is only one independent variable per model, the R-Squared by definition is a measure of how well the variation in the dependent variable (market value of the firm) is explained by variation in the independent variable (historical cost of fair value of assets, minus liabilities). Normally, total assets would be used to compute the book value of equity. However, the firms in the sample have an average 85% share of investment property of total assets, which means investment property can safely substitute total assets. The R-squared of the models will be compared to identify the accounting measure with the highest association to the stock market (value relevance). To clarify the conceptual relations of the above model, please refer appendix 1 for the Libby boxes.

4.3 Model 3 – Consequences of fair value adoption – information asymmetry

The third and final model, following from the discussion in the earlier chapter is proposed as follows:

$$LNBAS_{it} = \alpha + \beta_1 Period_{it} + \varepsilon_{it}$$

The dependent variable, *LNBAS,* is measured as the difference between the bid- and ask price divided by the midpoint average for firm *i* at time *t*. The only explanatory variable is *Period*. The sample will be divided into two sub samples, Fair Value adopters, and Historical Cost adopters. For each of the two sub samples the model will be ran. By designing the model in this way, a trend can be revealed for both groups of firms. An alternative model to measure the hypothesized decrease in information asymmetry would be a simple comparison of two cross sectional measures of bid ask spread at two points in time, one before IFRS adoption and one after adoption. However, by choosing the proposed model the results will provide more powerful evidence. First of all, the difference that may have been showed by comparing the means of bid-ask-spreads at two points in time would have been much more prone to bias a result of time specific effects in the choses points in time. These effects are difficult to measure or control for. Additionally, a point in time would have to be chosen for the change in accounting policy to have taken effect, while this too is difficult to predict. Lastly, it may be more interesting to find evidence for a trend, a relatively long term effect, rather than a simple decrease on average, shortly after adoption. To clarify the conceptual relations of the above model, please refer appendix 1 for the Libby boxes.

4.4 Sample and data

4.4.1 Cross sectional Samples

Both the model that will test Hypotheses 1 to 4, as well as the model that will test hypothesis 6, uses cross sectional data. Beginning with model 1; the starting point are all Canadian firms classified as real estate firms in DataStream (N=59). Second, the firms are subtracted that were not active in the fiscal year 2011, that leaves 45 firms in the sample (N=45) for model 1.

Model 2 and 3 use the same cross sectional sample of firms to test the relative value relevance of FVA calculated book value of equity, compared to the HCA calculated book value of equity. This paper uses the unique opportunity that the transition of Canadian GAAP to IFRS offers for FVA and HCA comparison. 2011 was the IFRs adopting year, and required firms to prepare their financial statements in line with IFRS. It also required firms that opted to account for investment property using FVA, to disclose in the 2011 financial statements the 2010 fair values op investment property. In combination with the financial statements that were published in 2010, that means for every FVA adopting firm, for 2010 both the HCA value, as well the FVA value of investment property are available. That means the two measures in terms of correlation to market value of equity, can accurately be compared. Thus, the sample for model consists of all Canadian real estate firms that were active in the year 2010 (N=45) and opted for FVA (N=31).

4.4.2 Longitudinal Sample

Table 1 describes the sample selection process. The starting point is all Canadian firms that are classified as real estate firms in DataStream (N=59). From this initial number the firms are subtracted that became inactive before December 2012 (due to bankruptcy, merger or going private). Secondly, firms that were founded later than fiscal year 2009 are deducted from the sample. For the remaining number of firms (N=45), data will be gathered for the 24 months following IRFS adoption at January 1, 2011. Table 1 summarizes the sample selection process for all models.

Table 1
Sample Selection

Procedure	*Observations Lost*	*Observations remaining*
Canadian firms classified as real estate in DataStream		59
Firms that became inactive before December 2012	(10)	49
Firms that were founded later than 2009	(4)	45

This table shows the procedures used in constructing the sample. The final sample pertains to 45 unique Canadian real estate firms.

4.4.3 Data collection

For the remaining number of firms (N=45) the chosen accounting model for investment property is hand collected for each individual firm from their respective financial statements. Following the accounting model choice, either the historical cost or fair value of investment property is hand collected from the financial statements as well, as this number is not available from any automatic database. The data is gathered for the years 2010, 2011 and 2012. Financial information about the companies such as total assets, total liabilities, and net income are retrieved from Wharton Research Data Services (WRDS). Gaps left by missing data in WRDS are filled by hand collection from the respective firms' financial statements. The auditor for each individual firm is retrieved from the financial statements of 2011, the IFRS adopting year. The financial statements are accessed via SEDAR, the filing system developed for the Canadian Securities Administrators to facilitate electronic filing of securities information.

The bid-ask spread calculation requires stock market data for the firms in the sample. Stock market data is retrieved using DataStream. The monthly bid-, ask, and midpoint average prices are gathered for the period January 2010 to December 2012.

4.5 Variable measures

4.5.1 Measure of FVA adoption

The first variable of interest is whether or not a firm opted for FVA following the adoption of IFRS in Canada. The variable will be a binary variable that takes the value of 1 if

the firm opts to account for investment property using FVA, and takes the value of 0 if the firm opts to continue to account for investment property using HCA. The variable, *FVAA*, will be the dependent variable in model 1, relating to the first four hypotheses. The variable will be the grouping variable in model 3.

4.5.2 Measure of leverage

To measure leverage, the degree to which assets are financed with debt is calculated. To do this, a firm's total assets is divided by its total liabilities. This calculation returns a number between 0 and 1, and results in the variable *LEV*.

4.5.3 Measure of Big 4 Auditor

The variable pertaining to a firm employing a Big 4 auditor is a binary variable. *BIG4* is equal to one if the firm employs a Big 4 auditor and 0 otherwise.

4.5.4 Measure of Information Asymmetry

Previous research often uses bid–ask spread as a measure of information asymmetry (e.g. Boone, 1998; Leuz and Verrecchia, 2000; Mohd, 2005). The rationale behind this is that if the bid-ask spread is high, it implies that buyer and seller hold different information about the stock. If buyer and seller would hold the exact same information about a firm's stock, they would both price the stock at the same price and the bid-ask spread would be zero. In order not to bias the bid-ask spread as a result of differences in share price, the proportional bid-ask spread is used. The proportional bid-ask spread is the bid-ask spread divided by the midpoint average price. For model 1, this measure is used as an independent variable and an ordinal variable is constructed equal to 1 if the proportional spread is above average, and 0 if below average. This calculation results in the variable *BASDUM*. For Model 3, the variable is the dependent variable and is the natural logarithm of the proportional spread at time *t, LNBAS*.

4.5.5 Measure of Financial performance

The financial performance of a firm can be calculated in various ways. For example, Net income, earnings per share, return on equity or return on assets are all ratio's that display the financial performance of a firm. As the holding of assets in order to generate capital gains

or rental income is the primary business of real estate companies, the best way to measure how well the firm is doing is to measure the return it was able to generate on the assets it holds. *ROA* is the variable represents financial performance, measured as net income divided by total assets.

4.5.6 Measure of Size

To measure the size of a company, several measures can be used. For example, a firm's size can be measured based on revenue, total assets or market capitalization. This paper deals with real estate firms that own investment property as their primary asset. Because some firms may be more focused on holding properties for development and capital gains, revenue would not be a suitable measure, as those firms would appear smaller than firms that are focused on earning rental revenues. That leaves total assets or the market capitalization; number of shares times share price, as a measure of size. This paper will use the natural logarithm of market capitalization, *Size*, as a variable to measure the size of the firm. *SIZE* is added to control for the effect that the size of a firm has on the selected accounting model.

Table 2
Definition of variables

Variables	*Measures*
Dependent Variables	
(1) Adoption of fair value accounting policy	Dummy variable that is "1" when the specific firm has adopted fair value accounting model and "0" if the firm hasn't adopted it. (*FV_ADOPT)*
(2) Market value	The market capitalization (market value of equity) of the firm at a given date *(MVEQ)*
(3) Bid-ask spread	The logarithm of the bid-ask spread of the firm at a given period in 2011 *(LNBAS)*
Independent Variables	
Model (1)	
Leverage	The ratio of debt divided by the total assets *(LEV)*
Big 4 Auditor	Dummy variable that is "1" when the specific firm is audited by a Big 4 Auditor, and "0" if otherwise. *(BIG4)*
Return on Assets	The ratio of net profit divided by the total assets *(ROA)*
Information Asymmetry	Dummy variable that is "1" if the bid-ask spread of the specific firm at a specific moment is above average, and "0" if it is below average. *(BAS)*
Firm size	Natural logarithm of market capitalization (*SIZE)*
Model (2)	
Book value of equity	Total assets relating to investment property on historical cost or fair value basis minus the total liabilities *(HCBEQ & FVBEQ)*
Model (3)	
Period of time	Monthly periods starting on January in the year of the adoption (choice) of the FV accounting policy in 2011. *(Period)*

This table shows the variables used in the empirical models as described in section 4.2. The left column shows the different dependent and independent variables for the different models. The right side shows how the variables will be measured.

5. Empirical Results

5.1 Descriptive statistics and correlation matrix

5.1.1 Complete sample

Key descriptive statistics for the sample used in can be found in table 3. There is a large variety within the sample in terms of firm characteristics. Over the period of 2009 to 2011, the smallest recorded firm market capitalization was 2,6 million Canadian dollars (CAD), while the highest recorded market cap was 24,9 billion CAD. In terms of financial performance, there is also a high variety of firms in the dataset. The highest recorded return on assets (ROA) in the period was 24%, while the lowest value was a negative return of -28%.

Table 3
Descriptive statistics – grouped by accounting model choice

Fair Value Adopters	Mean	Median	Standard Error	Min	Max
Market Value	1.961	657	116	1,95	24.912
Proportional Spread	3,3%	0,5%	0,3%	0,02%	81,3%
FVA Investment Property	3.465	1.488	205	1,8	33.161
Return on Assets	5,5%	5,1%	0,002%	-27,5%	24,07%
Leverage	54%	52,6%	0,006%	11,1%	102,3%
Cost Model Adopters					
Market Value	322	59	25	2,6	1.951
Proportional Spread	25,8%	3,8%	2,6%	0,03%	383
HCA Investment Property	496	139	42	0,441	2.735
Return on Assets	-0,6%	-0,02%	0,003%	-12,32%	0,32%
Leverage	54,1%	61,8%	0,02%	0,03%	115,9%

This table presents descriptive statistics for the sample used. Amounts are in millions of Canadian dollars, except for the percentages. Note that these are not the variables as used in the models. These numbers are purely intended for descriptive statistics. See table 2 for variable definitions.

5.1.2 Fair value or historical cost model

The total number of Canadian real estate firms in the sample is 45. 32 (71%) of those firms opted for the fair value method to account for investment property under IAS investment property following the IFRS conversion in Canada in 2011. 13 firms (29%) chose to account for investment property using the historical cost and depreciation method. Descriptive statistics for the two subsamples can be seen in table 2.. This comparison shows some interesting descriptive characteristics for each of the two groups. First of all, the average market capitalization of firms in the fair value subsample is 1,96 billion CAD, whereas the average

market capitalization of the historical cost subsample is 322 million CAD. This may indicate support for hypothesis 1, stating that corporate size is related to the choice between fair value and historical cost. However, the smallest firm in terms of market capitalization is in the fair value group, rather than the historical cost group. Second, the largest firm of the historical cost subsample (1,95 billion CAD), is nearly equal to the average of the fair value subsample (1,96 billion CAD), suggesting that there is substantial overlap.

A striking difference between the two groups is financial performance measured by return on assets. The mean ROA of the FVA group is 5,5% with a median of 5,1%, while the mean ROA of the HC group is -0,5% and a median of 0%. Both the highest (24%) and the lowest (-27,5%) values of ROA were recorded in the fair value group. This may indicate support for the third hypothesis. This hypothesis deals with ROA as a possible determinant for the choice between fair value and historical cost accounting, and will be elaborated on in the results of the regression later is this chapter.

The proportional bid-ask spread, used in this paper as a proxy for information asymmetry, also indicated a distinctive difference between the two groups. The mean proportional spread for the fair value group is 3,36% with a median of 0,48%. The mean proportional spread for the historical cost group is 25,75% and a median of 3,84%. This may indicate support for hypotheses 6a and 6b. The proportional spread is the dependent variable of model 3 and will be elaborated on during the discussion of the model.

Hypothesis 2 projects a larger share of companies audited by big 4 auditors, to opt for fair value accounting. Out of the total sample of 45 firms, 33 (73,3%) were audited by a Big 4 auditor and the remaining 12 (26,7%) were audited by non-big 4 auditors. Of the 32 firms applying the fair value model, 25 (78,1%) were audited by big 4 auditors, while 7 (21,9%) were not. Of the 13 companies applying the historical cost method, 8 (61,5%) were audited by big 4 auditors, while 5 (38,5) were not. Although these proportions are not perfectly equal, simple interpretation of these numbers cannot rule out normal sampling variance. The results of the logistic regression will assess the statistical relation between hiring a big 4 audit firm and the choice between FVA and HC.

5.2 Model 1- Logistic model

Table 4 shows descriptive statistics for the variables used in model 1, the logistic regression with accounting model choice as dependent variable. The number of firms in the logistic regression model is 43, because two firms showed missing data for two variables. Table 5 shows the Spearman correlations for model 1. As can be observed by the marking in bold, there are a number of variables that show significant correlations. Therefore, the Variance Inflation Factor (VIF) is analyzed. The mean VIF is equal to 1.63. Therefore no bias as a result of multicollinearity has to be considered.

Table 4
Descriptive statistics - sample

Ratio variables	**N**	Mean	Median	Standard Deviation
LNMV	45	5,430	5,575	2,215
LEV	45	0,558	0,571	0,248
ROA	45	0,041	0,390	0,040
Categorical variables				
FVA	45	0,620	1	0,458
Big4	45	0,733	1	0,447
BAS	45	0,462	0	0,163

This table presents the distribution of variables showing the mean, median and standard deviation. See table 2 for variable definitions.

Table 5
Spearman correlations for variables of model 1

		1 FVA	2 LEV	3 ROA	4 BIG4	5 BASDUM	6 LNMV
1	FVA	1					
2	LEV	**0,049**	1				
3	ROA	0,461	**-0,501**	1			
4	BIG4	0,155	0,276	0,153	1		
5	BASDUM	**-0,396**	**-0,492**	-0,165	**-0,428**	1	
6	LNMV	**0,416**	-0,024	**0,385**	**0,543**	**-0,543**	1

This table shows the spearman correlations pertaining to model 1. The correlation values that are bold indicate statistical significance at the 5% level. See table 2 for variable definitions.

Table 6 shows the output of the logistic regression, model 1. The variable pertaining to Hypothesis 1, *LEV,* is significant at the 10% level but not at the 5% level. The coefficient is positive. This is limited evidence for a positive relation between the leverage of a company and the choice to implement FVA. The next coefficient, ROA, shows a positive coefficient, significant at the 5% level. This indicates that, in line with hypothesis 2, firms that have a higher level of debt-to-equity are more likely to opt for FVA. The third coefficient, *BIG4*, does

not have a significant coefficient. This indicates no statistical effect of the audit firm on the accounting model choice. Lastly, *SIZE* does not have a significant coefficient. This indicates no significant effect of audit firm on the accounting model choice. That is surprising as previous research showed a positive effect of firm size on FVA choice.

Table 6
Logistic regression model 1

Variable	Expected Sign	Coefficient
LEV	+	2,209*
		(1,72)
ROA	+	47,701**
		(2,4)
BIG4	+	-1,424
		(-1,11)
BASDUM	+	0,520
		(0,34)
SIZE	+	0,345
		(1,29)
Pseudo R2		0,374

This table shows the estimated coefficients for a logistic regression relating to the choice drivers of accounting policy choice by Canadian real estate firms. The markings ***, **, and * indicate a coefficient significant at the 1%, 5%, and 10% respectively. The independent variable in this regression is binary variable FVA, equal to 1 if a firm adopted FVA, and 0 if otherwise. For the definition of the variables we refer to table 2.

5.3 Models 2A and 2B - R-squared comparisons

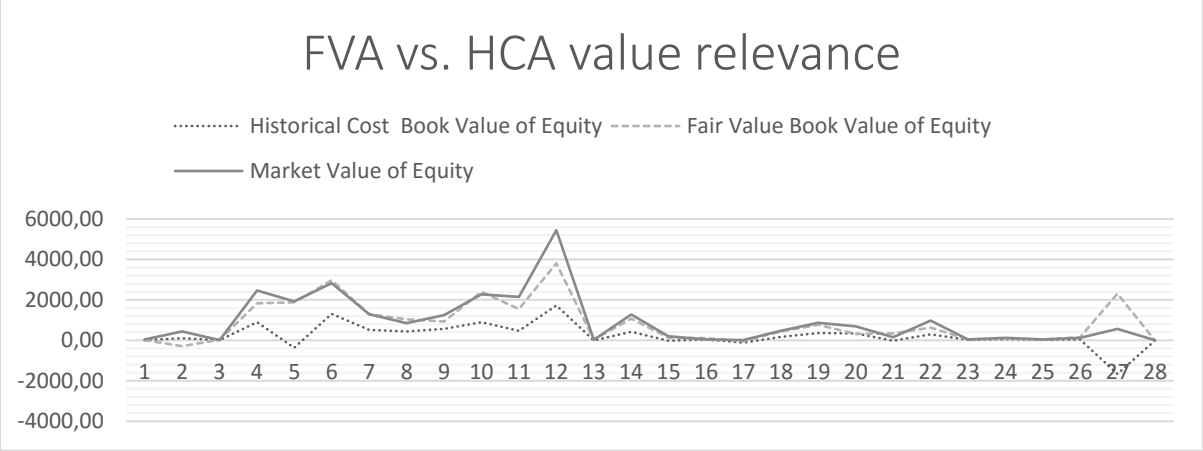
To test simple value relevance (the relation of accounting measures to stock market prices) two related OLS regressions were carried out. The dependent variable of both models is the same: market value of equity, which is the market capitalization of a firm. The sample used in both models is the same as well: 27 of the 32 FVA adopting firms remain, after removing observations with missing values and two outliers. Graph 1 and 2 can be found in the appendix. The graphs show a scatterplot with regression line for model 2A and 2B respectively. Table 7 shows the output of the two regression models, model 2A and 2B. Model 2A has market value of equity as dependent variable and the book value of equity, calculated using the historical cost method, as independent variable. The model has a good fit with *HCBEQ* returning a positive coefficient significant at the 1% level of, as may reasonably expected following the intuitive relation between market- and book value of equity. The r-squared of the model is 0,757, indicating that 75,7% of the variation in market value of equity is explained by variation in the book value of equity.

Table 7
Logistic regression model 2

Variable	(A)	(B)
HCBEQ	2,278***	
	(8,52)	
FVBEQ		1,154***
		(16,97)
Pseudo R2	0,744	0,920

This table shows the estimated coefficients for a linear regression of the historical and fair value of equity against the market value of equity. The markings ***, **, and * indicate a coefficient significant at the 1%, 5%, and 10% level respectively. The dependent variable in this regression is the market value of equity. (*MVEQ*). The independent variables are the historical book value and fair value of equity (*HCBEQ & FVBEQ).* For the definition of the variables we refer to table 2.

Model 2B uses the book value of equity, calculated using the fair value method, as independent variable. The variable *FVBEQ* has a positive coefficient significant at the 1% level. The R-squared of the model is 0,926, indicating that 92,6% of the variation in market value of equity is explained by variation in the net fair value of investment property. This indicates evidence that fair value has a higher relation to stock market prices compared to book values of assets. To aid the comparison of the two models based on r-squared values, graph 1 is added. It shows the market value, net fair value, and net book value at cost of the 27 firms in the sample. As can be visually confirmed in graph 1, net fair asset value follows the market value of equity extraordinary well. This indicates that the market is efficient at pricing equities. At the same time, it indicates evidence that the fair values assigned to investment property are in line with market values of assets.



5.4 Models 3A and 3B - proportional bid-ask spread trend

Table 8 shows the results of model 3. Both models are OLS models. Model 3A uses the subsample of firms applying the historical cost method to account for investment property. Model 3B uses the subsample of firms that apply the fair value method. The dependent variable in both models is proportional bid-ask spread, *LNSPREAD,* the proxy used for information asymmetry. The sole independent variable for both models is time. This regression allows for a trend to be discovered in the dependent variable. The sample used for model 3A consists of the 13 HC firms, and totals 448 firm-month observations. The independent variable, *Period,* has an insignificant coefficient. This means there is no evidence for a trend over time in the proportional bid-ask spread for the firms in the HC subsample. Model 3B consists of the 32 FVA firms, and totals 1068 firm-month observations. The independent variable, *Period*, has a negative coefficient, which is significant at the 1% level. This provides evidence that a trend exists in the dependent variable, proportional bid-ask spread, within the FVA subsample. These findings are in support of hypothesis 6A, which states that firms that adopt the fair value accounting method would see a decline in information asymmetry between insiders and investors. Graph 2 shows a graph of the average proportional bid-ask spread for the two samples in the same graph, as a visual aid to the models.

Table 8
Logistic regression model 3

Variable	3 – HCA	3 – FVA
Period	-0,008	-0,019***
	(-1,5)	(-4,87)

This table shows the estimated coefficients for a linear regression relating to the effect of time on the proportional bid-ask spread for the period January 2011 to December 2012. The markings ***, **, and * indicate a coefficient significant at the 1%, 5%, and 10% level respectively. The dependent variable in this regression is the natural logarithm of the proportional bid-ask spread. (*LNBAS*). The independent variable is the variable Period, which are the 24 consecutive months following Canadian IFRS adoption on January 2011. For the definition of the variables we refer to table 2.

6. Conclusion

6.1 Conclusion

This thesis has placed an attempt at investigating the factors influencing the choice real estate firms had to make when Canada adopted IFRS in 2011. Additionally, this paper has examined the potential consequences of the two alternative accounting methods, both the value relevance of the accounting measures has been assessed, as well as the effect on information asymmetry. To investigate which corporate factors influence the choice made, a logistic regression has been carried out with the choice to either: (1) converge to fair value or (0) maintain historical cost, as the dependent variable. Results show evidence that a firm's level of debt-to-equity has a statistically significant relation to the decision to implement the fair value accounting model. A firm's financial performance prior to adaption in the form of Return on Assets (ROA) is found to have a strong statistically significant relation to this choice as well. Moderate evidence has been found for a statistical relation between corporate size, measured by market capitalization, and accounting model choice. There is no evidence that the use of a Big 4 auditor has a negative relation to applying the fair value model. There is no statistical evidence for a relation between firm specific information asymmetry, measured as the bid-ask-spread divided by the midpoint average stock price in the year prior to IFRS adoption, and accounting model choice.

Considering the value relevance of the fair value accounting method, conclusive evidence has been presented about the relation between book-value of equity and market value of equity, calculated with fair value of assets on the one hand, and depreciated historical cost value on the other. Graph x shows compelling evidence of the accuracy of the Net Asset Value (NAV) calculation, as the fair value minus historical costs line almost perfectly follows the market value of firms. Additionally, the difference in R-squared value of the two related OLS regressions show a clear and statistically, significant difference.

To measure the effect of the two opposing accounting models on firm level information asymmetry, this paper has split the sample into two subsamples: 'fair value adopters' and 'historical cost maintainers'. The subsample 'fair value adopters' contains 32 firms and 1068 firm-period observations. The subsample 'historical cost maintainers' consists of the remaining 13 firms and totals 448 firm-period observations. Data for the bid ask spread divided by mid-point average stock price that was used to measure information asymmetry is collected for a

period of 3 the years, starting in the IFRS adopting year until three years after date. The subsample 'fair value adopters' shows a convincing decreasing trend in information asymmetry. In the exact same period, the subsample 'historical cost maintainers' shows no such trend.

6.2 Discussion of conclusion

The research shows some interesting results. The strong relation of financial performance to FVA adoption is thought provoking. If the theory leading to the hypothesis is true, that firms that are not doing well financially may not dare to take the risk to change the accounting model that offers interesting opportunities for future research. Specifically, a cost benefit analysis could be attempted in order to help firms decide if the choice for FVA is worth the costs.

The findings relating to the value relevance of the book value of equity, calculated in two different ways, may appear to lack tension. However, given the ample research that has questioned the reliability of fair value estimates as a result of management bias or measurement error, it still adds value to previous research. It shows convincing evidence that indeed FVA is a better, more relevant measure for (investment) assets.

Concerning the results for a decreasing trend in information asymmetry, it is difficult to proof causality, especially in this case. There may be omitted variables that influence the information asymmetry in a way that the model does not show. Still, the subsamples were grouped based on nothing but the accounting model choice and one group showed a decreasing trend for information asymmetry, whereas the other did not. That may indicate a negative relation between FVA and information asymmetry.

6.3 Limitations

This paper has some limitations. First of all, the research is quite specific. It is limited to the Canadian setting. That means the results have to be interpret with caution, because there could be unobserved country specific effects. Additionally, the research was focused on real estate firms. That further limits the generalizability of the results.

Furthermore, although the samples consisted of the majority of the population in terms of Canadian real estate firms, the numbers were quite low. That is not something that can be

countered by different or better models; there simply are a certain number of Canadian listed real estate companies. However, it does have an effect on the strength of models.

Finally, when conducting research often proxies have to be chosen to be able to measure the true effect of interest. In this case of this paper, for example, information asymmetry was measured by bid-ask spread. Some claim that this is not an appropriate measure. That means the results have be to interpret with caution.

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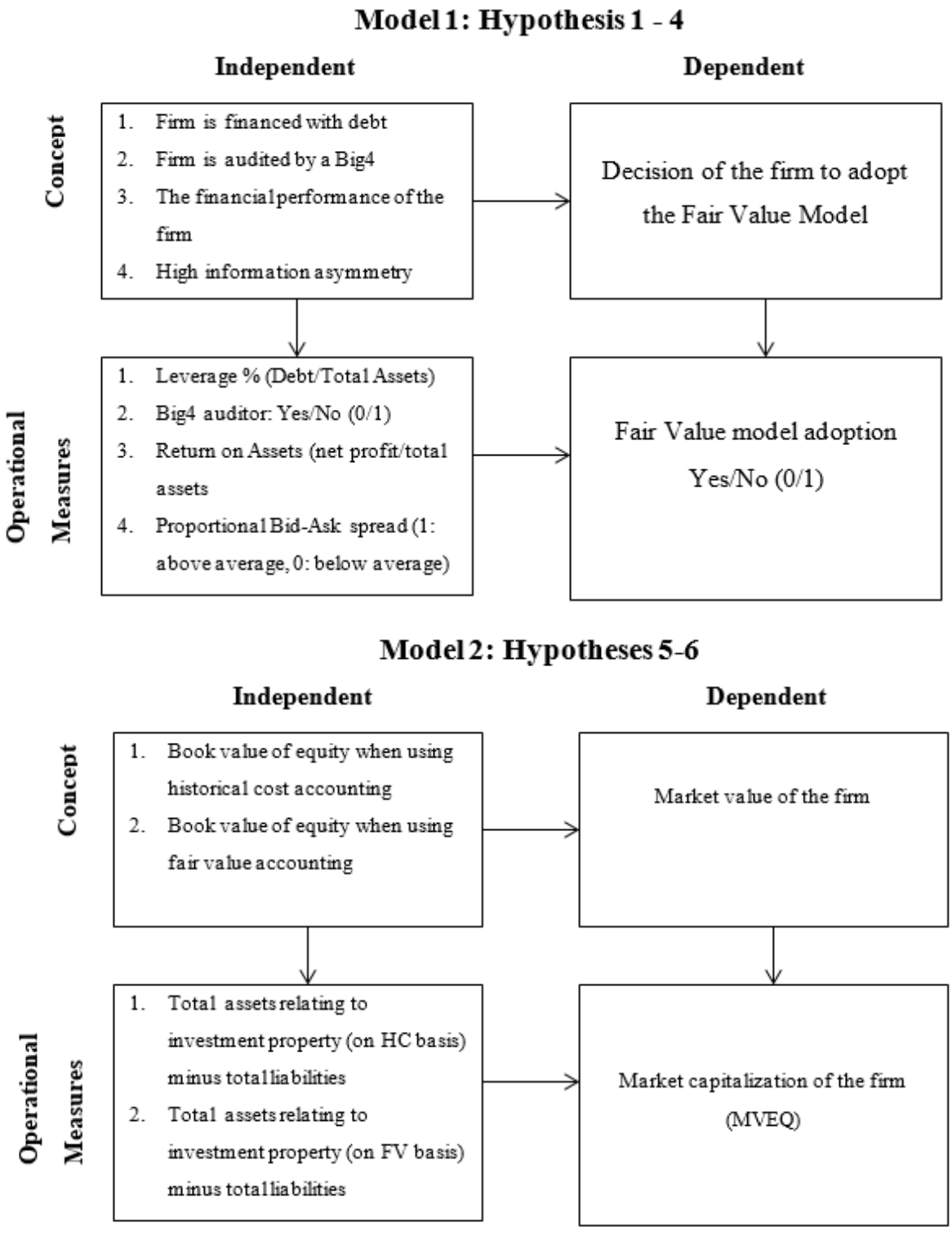
Appendices

APPENDIX I – Libby Boxes



Model 3: Hypothesis 7