THE VALUE RELEVANCE OF FAIR VALUE ACCOUNTING: EVIDENCE FROM THE REAL ESTATE INDUSTRY

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Abstract

This study examines whether investors use the fair value of real estate investments in the balance sheet, and unrealized fair value gains and losses in the income statement, in their price setting process. Drawing on sample firms from the real estate development industry in New Zealand, the results of the current study suggest that: (1) unrealized fair value gains and losses on real estate investments have incremental value relevance compared to historical cost earnings, controlling for the method of recognition of the fair value gain or loss; and (2) current fair value of real estate investments has incremental value over historical book value of real estate investments. Such investigation is important given the current international debate concerning fair value accounting.

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1. Introduction

Fair value accounting is a topical and a controversial issue in accounting standard setting at both national and international levels.[1] For example, in November 2006 the International Accounting Standards Board (IASB) issued for public comment Discussion Paper: *Fair Value Measurements* (IASB, 2006a). At the release of the discussion paper, the Chairman of the IASB commented that fair value accounting is of great interest to preparers, auditors, regulators, and users including investors (Tweedie, 2006).

Given that the objective of financial reporting is "to provide information that is useful to present and potential investors and creditors and others in making investment, credit, and, similar resource allocation decisions" (IASB, 2006b), a pertinent question is to what extent investors rely on fair value of balance sheet and income statement items in their price setting process. This is consistent with prior research that suggests consideration must be given to whether fair value accounting is relevant and reliable (Landsman, 2007).

In an efficient market, stock prices are set using relevant and reliable information on underlying asset values, the predicted future cash flows, and the earning potential of the firm. The residual income and

growth valuation models developed by Ohlson (1995), Feltham and Ohlson (1995), and Ohlson and Juettner-Nauroth (2005) show how prices are set based on analyst earnings forecasts, growth and the cost of equity capital. More specifically, studies by Gebhardt, Lee and Swaminathan (2001), Claus and Thomas (2001) and Gode and Mohanram (2003), as adapted by Ogneva, Subramanyam and Raghunandan (2007), employ earnings based valuation models with differing assumptions, but all rely on earnings, growth and required rates of return.

Because security analysts employ fair value information as one input in their price setting process, stock valuation would be facilitated if firms employed fair value accounting in their financial reports. However, capital market research provides inconclusive evidence on whether fair values are incrementally informative to investors. For example, Easton, Eddey and Harris (1993) provide evidence that aggregate revaluation reserve increments have significant explanatory power for firms' market values, while Barth and Clinch (1996) do not find evidence supporting that assertion. Furthermore, Barth and Clinch (1998) examine the value relevance of various components of total asset revaluations across industries and find that, while the revaluation of investments and intangibles support the positive association between stock prices and revaluation increments, the results for property plant and equipment (PPE) are inconclusive. Aboody, Barth and Kasznik (1999), however, find that the revaluation

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[1] Ronen (2008) and Whittington (2008) provide a detailed discussion of the current controversies surrounding fair value measurement.

increment of PPE is positively related to firms' stock returns.

Studies that focus on certain types of assets of specific industries have consistently found fair values to be value relevant. For example, Barth (1994), Bernard et al. (1995), Barth et al. (1996), Eccher et al. (1996), Nelson (1996), and Venkatachalan (1996) have all consistently reported results suggesting that the market perceives fair value measurements of investments by the banking and thrift industry as value relevant. The single-industry research design allows the incorporation of industry-specific controls for other (non-hypothesized) value-drivers in order to isolate the valuation effect of historical cost earnings and fair value gains and losses. While the use of a single-industry model adds to the robustness of the results of these studies, it limits the generalizability of the results.

More recently, prior literature examines the value relevance of fair values in the real estate industry. Danbolt and Rees (2008) find that, for a sample of British real estate firms, earnings containing property gains or losses, both realized and unrealized, are more value relevant than earnings containing only realized gains or losses. For a sample of New Zealand firms, Owusu-Ansah and Yeoh (2006) find that the recognition of unrealized gains from investment properties as earnings in the income statement is not relatively more value relevant than recognition as equity in revaluation reserve. Our study, however, examines whether investors perceive real estate investments at fair value in the balance sheet as value relevant, an issue not addressed by the above studies. Controlling for the method of recognition, our study also examines whether investors perceive fair value gains and losses as value relevant, which is distinct from Owusu-Ansah and Yeoh (2006) who test whether the method of recognition itself affects investor perceptions of value relevance. These aspects of our study are important in gaining further insight into market perceptions about fair value accounting, both in relation to balance sheet and income statement items.

Real estate investments are the major assets held by real estate development firms. Compared to investment securities in the banking and thrift industry, the market prices for real estate investments in the real estate industry are readily available for a charge through independent valuation firms. Also, valuations by government agencies for all real estate are released annually and are available freely. Because these firms are able to draw on several valuations, their own valuation of real estate items becomes more accurate and reliable. Therefore, compared to specialized assets held by banks (investment securities) the fair value system of valuation in the real estate industry is likely to be efficient in that the system, *ex ante*, provides an accurate estimate of the price at which an asset could be sold, using reliable information.

The likelihood of manipulation of fair value information by management, as discussed in prior research (see Bartov, 1993; Watts, 2003), is remote in the real estate industry because of the various external sources of information on the market price of these assets. Barth and Clinch (1998) argue that external appraisal estimates may be relatively more accurate than internal appraisals, as external appraisers have greater expertise and are independent of the firm. Muller and Riedl (2002) find that, for a sample of firms in the UK investment property industry, market makers differentiate between the reliability of external and internal appraisals of fair value by setting lower bid-ask spreads for firms using external appraisers, relative to those using internal appraisers. In a similar vein, we address whether the externally appraised market prices of real estate investment are more value relevant than historical book value.

In addition to reporting current fair value and historical book value of real estate investments, firms must also report any fair value gains and losses on such investments. In the real estate development industry, earnings components include: (1) realized income from the sale of real estate; (2) realized income from leased real estate; and (3) fair value (unrealized) gains or losses resulting from the difference between historical book value and current fair value of real estate investment holdings. Our study extends prior research by examining: (1) the value relevance of fair value (unrealized) gains or losses relative to historical cost (realized) income; (2) the value relevance of current fair value relative to historical book value of investments recognized in the balance sheet; and (3) the value relevance of fair value gains or losses relative to historical cost income, after controlling for whether the fair value gain or loss is recognized in the income statement or revaluation reserve.

Such analyses differentiate our study from prior research on several dimensions. First, our study examines the incremental value relevance of fair value accounting for both income statement and balance sheet items. Whilst Danbolt and Rees (2008) examine the value relevance of fair value income relative to historical cost income, it fails to establish whether investors attach value to the recognition of real estate investments at fair value. This study examines the value relevance of accounting for both income statement and balance sheet items at fair value.

Second, our study examines the incremental value relevance of fair value gains or losses, controlling for their method of recognition. Whilst Owusu-Ansah and Yeoh (2006) test for whether the method of recognition of fair value gains or losses alters their relevance to investors, it does not directly test whether the fair value gain or loss is itself value relevant. This study establishes, firstly, whether fair value gains or losses are value relevant and, secondly, whether such value relevance is altered by the gain or

loss being recognized in the income statement or revaluation reserve.

Results from Model (1) indicate that the fair value real estate gain or loss of a firm is significantly related to stock returns, whereas historical cost earnings are not significant. These results hold after controlling for the method of recognizing the fair value gain or loss (see Model 3). The results from Model (2) indicate that fair value of real estate investments is significant, supporting the notion that investors perceive fair value information to be more value relevant than historical cost in the real estate industry.

The remainder of this paper is organized as follows. Section 2 provides a background of the New Zealand Statement of Standard Accounting Practice (SSAP No. 17 *Accounting for Investment Properties by Property Investment Companies*). Section 3 describes the methodology and data used in the paper. Empirical results are discussed in Section 4 and section 5 concludes the paper.

2. Background

Prior to 1983, financial accounting and reporting practices for investment properties varied across companies in New Zealand. Some firms revalued properties periodically, while others carried properties at historical cost. Of those that revalued, some firms recognized fair value gains and losses (the difference between current fair value and historical book value of real estate investments) in the income statement, while others recognized the difference in the balance sheet as an adjustment to reserves.

In July 1983, the New Zealand Institute of Chartered Accountants (NZICA), formerly the New Zealand Society of Accountants (NZSA), issued Exposure Draft 29 *Accounting for Investment Properties* (*ED 29*) proposing that investments in real estate be recognized at their current fair values as determined annually by professionally qualified valuation firms. *ED 29* also suggested that real estate investments should not be subject to depreciation charges and that any unrealized gains or losses on revaluation of these assets should be reported in the annual financial reports of real estate developers.

Under *ED 29*, two possible reporting treatments for unrealized real estate gains or losses were discussed. First was the "flow-through" method, which reports any unrealized fair value gains or losses in the income statement. The second was the "reserve" method, which recognizes unrealized fair value gains or losses in revaluation reserve. *ED 29* proposed that real estate developers be required to use the "flow-through" method.

Keenan (1992) reports that, while real estate developers lobbied in favor of the "flow-through" method, the major accounting firms lobbied against it. *SSAP No. 17 Accounting for Investment Properties by Property Investment Companies* (hereafter referred to

as *SSAP 17(a)*) was eventually issued by NZICA in 1985, and mandated the use of the "flow-through" method for accounting periods ending on or after March 31, 1986.

After a period of controversy surrounding the mandated use of the "flow-through" method and non-compliance by some real estate development firms, *SSAP 17(a)* was withdrawn in 1988 and a revised version *SSAP No. 17 Accounting for Investment Properties and Properties Intended for Sale* (hereafter referred to as *SSAP 17(b)*) was issued in 1989. The withdrawal of *SSAP 17(a)* was primarily due to the October 1987 share market crash, when property prices fell and unrealized gains were replaced by unrealized losses. Many companies failed to follow *SSAP 17(a)* after the crash to avoid reporting unrealized losses in the income statement (Myers, 1988). Therefore, *SSAP 17(b)* was a direct consequence of the non-acceptance by firms of *SSAP 17(a)* (Rahman, Ng and Tower, 1994). The revised version allowed real estate development firms to choose either the "flow-through" or the "reserve" method. Thus, both methods have been observed in practice for some time.

New Zealand equivalent to International Accounting Standard 40 *Investment Property* (hereafter referred to as *NZ IAS 40*) was issued in November 2004 and, upon adoption, supersedes *SSAP 17(b)*. The adoption of New Zealand equivalent to International Accounting Standards (including *NZ IAS 40*) is mandatory for periods commencing on or after 1 January 2007, with early adoption permitted for periods commencing on or after 1 January 2005. Such mandatory adoption, however, has been delayed for small entities that continue to use *SSAP 17(b)*.

3. Methodology and Data Collection

3.1 Data Collection

The sample consists of 40 New Zealand real estate development firms identified during the 1980 to 1999 sample period. Due to the unavailability of data because of delisting, the final sample ranges from 158 firm-years in 1980 to 185 firm-years in 1999. Data for accounting variables are hand-collected from the financial statements of the sample firms. Stock prices are obtained from New Zealand DATEX Financial Services.

3.2 Methodology

We employ three cross-sectional regression models to examine investor perceptions of the value relevance of the historical cost and fair value measurement systems. Model (1) is employed to test the relationship between stock returns and income statement items (Our calculation of stock return is a change specification in that we measure the change in stock prices from beginning to end of year, scaled by

beginning of year stock price. Such a price change, which corresponds to the entire year, is linked to reported earnings (For more information about such equations see Lipe (1986), Barth et al. (1990), Barth et al. (1992), Barth (1994), and Jennings et al. (1996).), which also relates to the entire year, thereby creating a relevant match between the dependent variable (change in stock price for the year) and the independent variable (earnings for the year). We also modified the measurement of the dependent variable to the change in stock return, which required us to use the change in earnings as an independent variable, and the results from that regression were qualitatively similar to the results reported in the paper.). This is an earnings-based equation (also called earnings capitalization model), which assesses the incremental information content of the components of earnings. Annual stock returns (*RET*) are regressed on earnings from the core real estate development activities (income from sales and leasing of real estate

investments (*EBIT*)) and on unrealized gains and losses (*FVREGL*) (We, however, agree that the use of EBIT could be subject to managerial discretion.). To obtain *EBIT* when firms use the "flow through" method, the reported earnings are adjusted for unrealized gains or losses. No adjustments, however, are required when firms use the "reserve" method because the reported earnings are not affected by the market valuation of the real estate investments.

To ensure that the results are not biased due to variations in size and growth across sample firms, the natural logarithm of total assets (*SIZE*) and the ratio of book value to market value of equity (*GROWTH*) are included in the model as control variables. Fama and French (1993) identify firm size as a stock market risk factor, and Fama and French (1995) suggest that firm size proxies for sensitivity to risk factors. Therefore, *SIZE* has been included to also proxy for risk:

$$RET_{it} = \alpha + \beta_1 EBIT_{it} + \beta_2 FVREGL_{it} + \beta_3 SIZE_{it} + \beta_4 GROWTH_{it} + \varepsilon_{it} \qquad (1)$$

Where RET_{it} is annual stock return per share for firm i in time t; $EBIT_{it}$ is historical cost-based earnings before interest and tax for firm i in time t, scaled by the number of outstanding shares at beginning of year; $FVREGL_{it}$ is fair value real estate gain (loss) for firm i in time t, scaled by the number of outstanding shares at beginning of year; $SIZE_{it}$ is the natural logarithm of total assets for firm i in time t; and $GROWTH_{it}$ is measured as book to market value of equity for firm i in time t. If equity valuation in the real estate development industry is influenced more by fair value of real estate gains and losses than historical cost earnings, then β_2 will be more significant than β_1.

Barth and Kallapur (1996) suggest deflating regression variables by a scale proxy as a remedy to scale-related econometric problems. Consistent with Barth (1994), and utilizing the superior performance of share-deflated models (Barth and Clinch, 2009), all variables have been deflated by number of shares outstanding, after adjusting for stock splits and dividends, to mitigate the effects of heteroscedasticity.

Model (2) investigates whether users of financial statements rely more on historical book value compared to current fair value of real estate

investments. Model (2) is an asset-based equation which assesses the incremental information content of balance sheet items (For more information about such equations see studies such as Barth (1994), Jennings et al. (1996), Schneider et al. (1999), and Owusu-Ansah and Yeoh (2006).). The historical book value of real estate investments can be reconstructed by adjusting them for the fair value real estate gains and losses recognized, in the current year, in either the income statement or revaluation reserve. Doing so derives the previous year's closing fair values, which proxy the historical cost (net of depreciation) of real estate investments. Model (2) regresses market value of equity on historical book value (*BINV*) and current fair value of real estate investments (*FINV*). To control for firm size, the natural logarithm of total assets (*SIZE*) is also used in this model (Given our unique research setting the difference between the two independent variables in Model 2 (that is, BVINV and FVINV) for almost all sample firms mirrored their reported performance. The inclusion of earnings in Model 2, therefore, created very high (beyond 10) variance inflation factor (VIF), which caused concerns about the validity of the results due to multi-collinearity among the independent variables (Kennedy, 2003).):

$$MVE_{it} = \alpha + \beta_1 BINV_{it} + \beta_2 FINV_{it} + \beta_3 SIZE_{it} + \varepsilon_{it} \qquad (2)$$

Where MVE_{it} is market value of equity for firm i in time t, scaled by the number of shares outstanding at beginning of year; $BINV_{it}$ is real estate investments at historical book value for firm i in time t, scaled by the number of shares outstanding at beginning of year; $FINV_{it}$ is current fair value of real estate investments for firm i in time t, scaled by the number of shares outstanding at beginning of year; and $SIZE_{it}$

is the natural logarithm of total assets for firm i in time t. If the market value of equity in real estate firms is influenced more by the current fair value of real estate investments than historical book value, β_2 will be more significant than β_1.

In the price model (Model 2), the use of current earnings is assumed to provide a sound basis for predicting future earnings and balance sheet variables

such as book value of assets. Price models provide better estimators of the coefficient for profit variables than return models (Kothari and Zimmerman, 1995), but have issues related to heteroscedasticity, model misspecification, and correlation between error terms. As such, we use a returns model (Models 1 and 3) because, econometrically, it is less problematic than the price model (Christie, 1987). Since both models have its own limitations and strengths, we decided to use both the models in our study.

Model (3) examines the value relevance of fair value income relative to historical cost income, after controlling for whether firms recognized the fair value

gain or loss in the income statement or balance sheet. Owusu-Ansah and Yeoh (2006) find no difference in the relative value relevance of either method. Similar to Model (1), Model (3) is also an earnings-based equation used to assess the incremental information of the components of earnings, controlling for the method of recognition of the unrealized gain or loss. This is achieved by including a dummy variable (*CHOICE*) in the model, where *CHOICE* is a dummy variable that equals 1 if a firm adopts the "flow-through" accounting method and zero if a firm adopts the "reserve" method. All other variables are defined as before:

$$RET_{it} = \alpha + \beta_1 EBIT_{it} + \beta_2 FVREGL_{it} + \beta_3 SIZE_{it} + \beta_4 GROWTH_{it} + \beta_5 CHOICE_{it} + \varepsilon_{it} \qquad (3)$$

4. Results

4.1. Descriptive Statistics

Table 1 reports descriptive statistics on historical-cost-based earnings before interest and tax (*EBIT*),

fair value real estate gain or loss (*FVREGL*), fair value earnings, including both realized and unrealized earnings (*FVE*), market value of equity (*MVE*) and total assets (*SIZE*).

Table 1. Descriptive Statistics

	EBIT (per share)	FVREGL (per share)	FVE (per share)	MVE ($m)	SIZE ($m)
Mean	0.3258	0.1573	0.5039	83.0661	208.9918
Median	0.1768	0.0271	0.2264	39.7000	92.2500
Std. dev.	0.7286	0.8537	1.3041	120.8692	282.7844
Minimum	0.0014	-1.2871	-0.6793	2.4600	1.1900
Maximum	6.0444	8.9020	11.3333	813.5100	1455.9630

The sample is 185 firm-year observations over the period 1980-1999.

EBIT is historical-cost-based earnings before interest and tax; *FVREGL is* fair value real estate gain or loss; *FVE is* fair value earnings, including both realized and unrealized earnings and is equal to *EBIT* + (-) *FVREGL* where there is a fair value real estate gain (loss); *MVE is* market value of equity; *TA is* natural logarithm of total assets.

The pooled mean (median) realized income from the core business activities of real estate development firms (*EBIT*) is 0.3258 (0.1768) compared to the pooled mean (median) of fair value gain or loss (*FVREGL)* of 0.1573 (0.0271). The positive mean (median) sign indicates real estate development firms made gains on their investments during the sample period. Further, as the mean *FVREGL* is almost half the mean *EBIT*, real estate development firms derive a large portion of their earnings from fair value real estate gains. The pooled mean (median) fair value earnings (*FVE*) which includes both realized and unrealized earnings is 0.5039 (0.2264). Lastly, the

pooled mean *MVE* is $83.06m and ranges from $2.46m to $813.51m, while the pooled mean (median) of total assets (*SIZE*) is $208.99m ($92.25m).

4.2. Empirical Results

Table 2 reports the results of Model (1), which tests the value relevance of historical cost earnings (*EBIT*) against the value relevance of fair value real estate gains and losses (*FVREGL*). *FVREGL* is the figure that is reported either in revaluation reserve ("reserve" method) or the income statement ("flow-through" method).

Table 2. Value Relevance of Fair Value Gains and Losses and Historical-Based Earnings

		Parameter Estimates	Std. error	*t*-statistic	*p*-value
α		-7.1705	5.7922	-1.2400	0.2176
EBIT		0.6996	3.5869	0.2000	0.8456
FVREGL		16.1741	4.0544	3.9900	0.0001
SIZE		1.3174	1.2680	1.0400	0.3004
GROWTH		2.0880	2.0226	1.0300	0.3035
F- statistic (*p*-value)	7.1100 (0.0001)				
Adjusted R^2	0.1290				

The sample is 166 firm-year observations over the period 1980-1999.

Model

$$RET_{it} = \alpha + \beta_1 EBIT_{it} + \beta_2 FVREGL_{it} + \beta_3 SIZE_{it} + \beta_4 GROWTH_{it} + \varepsilon_{it}$$

RET_{it} is annual stock return per share for firm *i* in time *t*; $EBIT_{it}$ is historical cost-based earnings before interest and tax for firm *i* in time *t*, scaled by the number of outstanding shares at beginning of year; $FVREGL_{it}$ is fair value real estate gain and loss for firm *i* in time *t*, scaled by the number of outstanding shares at beginning of year; $SIZE_{it}$ is the natural logarithm of total assets for firm *i* in time *t*; $GROWTH_{it}$ is the book to market value of equity for firm *i* in time *t*; α, β_1, β_2, β_3 and β_4 are regression coefficients; and ε_{it} is error term for firm *i* in time *t*.

The results indicate that *FVREGL* is significantly related to stock returns (*p*-value = 0.0001) whereas *EBIT* is not (*p*-value = 0.8456). *SIZE* (*p*-value = 0.3004) and *GROWTH* (*p*-value = 0.3035) are likewise not significant. The adjusted R^2 for the model is 0.1290. These results support the notion that investors in the real estate industry perceive fair value information to be more value relevant than historical cost in their valuation process. It appears that where *FVREGL* is available to investors they would prefer using such information in their pricing rather than historical earnings. For robustness, we measure annual stock returns ending three months after financial year-end (RET_{it+3}), and the results (not reported here) were qualitatively the same as those reported in Table 2. We also examined the potential effect of time on results, by assigning a dummy variable to each year and replicating the tests. The results (not reported here) indicate a similar significance level for *FVREGL*, while *EBIT* and the control variables remain insignificant.

Tests of the relation between market value of equity and various balance sheet items are reported in Table 3. Model (2) regresses the market value of equity (*MVE*) on historical book value of real estate investments (*BINV*) and current fair value of real estate investments (*FINV*), and finds that, while *BINV* is not significant (*p*-value = 0.802), *FINV* is significant (*p*-value = 0.0002). The adjusted R^2 for the model is 0.4501. These results are consistent with the results of regressing annual stock returns on income statement items (Table 2) and confirm that investors in the real estate industry rely more heavily on current fair value information than they do on historical numbers.

Table 3. Value relevance of current fair value and historical book value of investments in real estate

		Parameter Estimates	Std. error	*t*-statistic	*p*-value
α		-106.4062	27.3549	-3.8900	0.0001
BINV		1.4464	5.7754	0.2500	0.8025
FINV		0.1443	0.0373	3.8600	0.0002
SIZE		36.8826	6.8168	5.4100	0.0001
F- statistic (*p*-value) Adjusted R^2	51.2100 (0.0001) 0.4501				

The sample is 185 firm-year observations over the period 1980-1999.

Model

$$MVE_{it} = \alpha + \beta_1 BINV_{it} + \beta_2 FINV_{it} + \beta_3 SIZE_{it} + \varepsilon_{it}$$

MVE_{it} is market value of equity for firm i in time t scaled by the number of shares outstanding at beginning of year; $BINV_{it}$ is historical book value of real estate investments for firm i in time t, scaled by the number of shares outstanding at beginning of year; $FINV_{it}$ is current fair value of real estate investments for firm i in time t, scaled by the number of shares outstanding at beginning of year; $SIZE_{it}$ is the natural logarithm of total assets for firm i in time t; α, β_1, β_2, and β_3 are regression coefficients; and ε_{it} is error term for firm i in time t.

To test whether adopting the "reserve" method compared to the "flow-through" method would influence results, Model (3) regresses annual stock returns on, amongst other things, a dummy variable (*CHOICE*) coded as 1 (0) if the "flow-through" ("reserve") method is adopted. The results are reported in Table 4.

Table 4. Value relevance of the flow through and reserve method for recognizing fair value gains and losses

	Parameter estimates	Std. error	t-statistic	p-value
α	-4.3012	6.5060	-0.6600	0.5095
EBIT	0.8315	3.5902	0.2300	0.8171
FVREGL	16.5429	4.0729	4.0600	0.0001
SIZE	1.2673	1.2693	1.0000	0.3196
GROWTH	1.7868	2.0467	0.8700	0.3840
CHOICE	3.4391	3.5489	0.9700	0.3344
F- statistic (p-value)	5.8700 (0.0001)			
Adjusted R^2	0.1287			

The sample is 158 firm-year observations over the period 1980-1999.

Model

$$RET_{it} = \alpha + \beta_1 EBIT_{it} + \beta_2 FVREGL_{it} + \beta_3 SIZE_{it} + \beta_4 GROWTH_{it} + \beta_5 CHOICE_{it} + \varepsilon_{it}$$

RET_{it} is stock returns for firm i in time t; $EBIT_{it}$ is historical cost-based earnings before interest and tax for firm i in time t, scaled by the number of outstanding shares at beginning of year; $FVREGL_{it}$ is fair value real estate gain (loss) for firm i in time t, scaled by the number of outstanding shares at beginning of year; $SIZE_{it}$ is the natural logarithm of total assets for firm i in time t; $GROWTH_{it}$ is the book to market value of equity for firm i in time t; $CHOICE$ is a dummy variable that equals 1 if the firm adopts the "flow-through" method, and equals zero if the firm adopts the "reserve" method; α, β_1, β_2, β_3, β_4 and β_5 are regression coefficients; and ε_{it} is error term for firm i in time t.

Table 4 indicates that the choice of reporting fair value gains and losses does not influence the previously reported results. *FVREGL* remains significant at the 0.0001 level, while *EBIT* remains insignificant. Both of these results are consistent with the results of Model (1). Importantly, *CHOICE* is not significant indicating that investors are not influenced by accounting choice when valuing firms. These results are to some extent expected. If the market is efficient, relevant information for valuation purposes is used regardless of where it is reported in the financial statements. We find that recognition of unrealized gains (losses) in the income statement is not superior to (or significantly different from) recognition of unrealized gains (losses) in revaluation reserve in terms of their value relevance. Extending the findings of Owusu-Ansah and Yeoh (2006), these results indicate that fair value (unrealized) gains and losses are value relevant, irrespective of whether

recognized in the income statement or revaluation reserve.

Overall, the results throughout our study support the notion that current fair value accounting has more influence than historical cost on the stock price-setting process. It is interesting to observe that in the real estate industry historical values are insignificant across all tests. These results are after controlling for size and growth differences among sample firms. The results, which are consistent with those previously reported from the banking and thrift industry, suggest that in an environment driven by market price that can be reliably determined current fair value accounting is perceived as value relevant by investors, while historical values not. This evidence contributes to the current global debate on the measurement of fair value by supporting the recognition of fair value, rather than historical cost, in firms' financial statements when an observable market price is reliably measurable.

As a limitation, the results of the study cannot be generalized to other industries where fair value gains (losses) are not a major component of firm earnings. The generalizability of our results is also limited due to the size of the New Zealand real estate development industry, given our sample is only 40 firms. Finally, whilst value relevance of fair value accounting exists, these results could be due to the incremental informativeness of current fair values, investor perceptions of the reliability of independent valuations, or a combination of the two.

5. Conclusion

Fair value accounting is currently a topical issue in the international accounting standard setting environment. As the objective of financial reporting is, amongst other things, to provide information that is value relevant to users of financial statements in making investment decisions, an important question is whether fair value accounting is value relevant to investors. This study examined the incremental value relevance of fair value, relative to historical-based, accounting in the real estate development industry in New Zealand. Market price is relevant in the real estate industry, as real estate developers hold assets both for sale as well as for use to derive rental income. Moreover, as market price is obtainable from independent valuation firms and government agencies, fair value measurement is reliable within this industry.

Results of our study show that firms' stock return is significantly related to fair value measurement. In particular, firms' stock returns are significantly associated with their fair value real estate gains (losses) and the current fair value of their real estate investments. These results hold irrespective of whether firms recognize the gain (loss) in the income statement or revaluation reserve. Our results also indicate that firms' stock returns are not significantly

associated with their historical earnings or the historical book value of their real estate investments. These results extend prior literature by finding that fair value measures of investments beyond the banking and thrift industry are value relevant. This is important in the current global debate on fair value measurement, including the deliberations on fair value accounting for investment properties currently taking place in the US, as it indicates that investors perceive the recognition of current fair value, rather than historical values, in firms' financial statements as value relevant when fair value is reliably measured.

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