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The Impact of IFRS Adoption on the Value Relevance of Net Worth in Taiwan's Financial Institutions

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Abstract

This study investigates the value relevance of accounting information, specifically net worth per share, for twenty financial institutions in Taiwan following the adoption of International Financial Reporting Standards (IFRS) in 2013. The transition from Generally Accepted Accounting Principles (GAAP) to IFRS represents a paradigm shift from historical cost to fair value accounting. We hypothesize that this shift has strengthened the relationship between reported net worth and market stock prices. Using a regression model of net worth on stock prices and employing the Chow Test to identify structural breaks, we analyze financial data from pre- and post-IFRS periods. The empirical results reveal that for 15 out of the 20 sampled companies, the Residual Sum of Squares (RSS) decreased in the post-IFRS period, indicating a tighter fit between book value and market value. These findings suggest that IFRS adoption has significantly enhanced the information content of the balance sheet for the Taiwanese financial sector.

Keywords: *IFRS, Fair Value Accounting, Chow Test*

1. Introduction

The global harmonization of accounting standards has been arguably the most transformative development in financial reporting over the last two decades. As capital markets have become increasingly integrated, the demand for a single, high-quality set of global accounting standards has intensified. The adoption of International Financial Reporting Standards (IFRS) is often advocated by regulators and standard-setters—such as the International Accounting Standards Board (IASB)—on the premise that it improves the comparability, transparency, and quality of financial information across borders.

For emerging markets and export-oriented economies like Taiwan, the stakes of this transition are particularly high. In 2013, Taiwan mandated the full adoption of IFRS for all listed companies, moving away from the locally adapted Republic of China Generally Accepted Accounting Principles (ROC GAAP). This shift was not merely administrative; it represented a fundamental philosophy change in how corporate value is measured and communicated to investors.

A central feature of IFRS is its heavy reliance on Fair Value Accounting, particularly for financial instruments and complex investment assets. This stands in sharp contrast to the Historical Cost Principle that previously dominated many local GAAPs, including Taiwan's former standards. Under historical cost, assets are recorded at their original purchase price and are rarely adjusted upward, even if their market values subsequently appreciate. This valuation remains rigid: the book value stays anchored to the historic cost, failing to reflect current realities even when the asset's actual market value declines significantly. While this approach offers high "reliability" (the number is verifiable and hard to manipulate), it often suffers from low relevance (Argiles et al., 2011), the figure on the balance sheet may no longer reflect current economic reality and thus not affect readers' decisions.

For financial institutions, whose balance sheets are heavily comprised of financial assets (loans, securities, derivatives) and liabilities (deposits, bonds), the method of valuation is critical. Financial institutions are unique because their "inventory" consists of money and monetary contracts, the values of which are driven by fluctuating interest rates, credit risks, and market sentiment. Under historical cost accounting, changes in the market value of these assets are often not reflected in the financial statements until the asset is sold or "realized." This delay can lead to a significant divergence between a bank's "Book Value" (accounting net worth) and its "Market Value" (stock price). Investors attempting to

value a bank under historical cost accounting often have to "look through" the financial statements to guess the real economic value of the assets. IFRS aims to close this gap by requiring that more assets be measured at fair value, theoretically making the reported net worth a more accurate proxy for the firm's economic value.

This regulatory change in Taiwan provides a "natural experiment" to test the efficacy of fair value accounting. The logic is straightforward: if IFRS is successful in capturing economic reality, the reported net worth of financial institutions should explain a larger portion of the variation in their stock prices *after* the adoption than *before*. If the accounting numbers are better, the stock market should rely on them more heavily.

This study investigates whether the adoption of IFRS in Taiwan precipitated a structural break in the relationship between net worth and stock prices for financial institutions. Specifically, it seeks to determine if the transition enhanced the value relevance of net worth. The underlying hypothesis is that if IFRS improves the relevance of accounting data, reported net worth should align more closely with market valuations in the post-implementation period.

To answer this, we analyzed twenty major financial institutions in Taiwan surrounding the 2013 adoption event. We performed regression analyses of stock prices on net worth per share and utilized the Chow Test (Chow,1960) to check for structural breaks in the regression coefficients. Our primary focus is on the Residual Sum of Squares (RSS) as a measure of model fit. In regression analysis, the RSS represents the variance in the dependent variable (stock price) that the model *fails* to explain. Therefore, a significantly lower RSS in the post-adoption period would indicate that the "noise" has decreased and that reported net worth has become a more precise, reliable predictor of stock price.

2. Institutional Background: The Taiwan Context

To understand the significance of this study, it is necessary to contextualize the accounting environment in Taiwan prior to 2013.

2.1 From ROC GAAP to IFRS

Prior to 2013, Taiwanese listed companies reported under the Republic of China Guidelines for Securities Issuers (ROC GAAP). While ROC GAAP was largely modeled after US GAAP, it retained distinct local characteristics emphasizing conservatism and prudence. In the wake of the Asian Financial Crisis in 1997, Taiwanese regulators were wary of volatile accounting measures that could destabilize the financial sector. Consequently, ROC GAAP strictly adhered to historical cost principles and placed significant restrictions on asset revaluations.

However, as Taiwan's economy became inextricably linked with global supply chains and foreign capital markets, the isolation of ROC GAAP became a liability. Foreign institutional investors (FIIs), who comprise a significant portion of trading volume on the Taiwan Stock Exchange (TWSE), faced high information processing costs when translating Taiwanese financial statements into globally comparable figures.

The decision by the Financial Supervisory Commission (FSC) to adopt IFRS was driven by the desire to attract foreign capital and lower the cost of capital for Taiwanese firms. However, IFRS is a "principles-based" system, which requires significantly more management judgment than the "rules-based" approach of ROC GAAP/US GAAP. This shift transfers the burden of valuation from rigid rules to management's estimation of market conditions—a change that is most palpable in the valuation of financial instruments.

2.2 The Unique Nature of Financial Institutions in Taiwan

The financial sector in Taiwan is dominated by large Financial Holding Companies (FHCs) which often aggregate banking, insurance, and securities divisions under one roof. These entities hold massive portfolios of investment securities (Xu and Li, 2017). Under ROC GAAP, a bond held by a bank might remain on the books at its 1990 purchase price until it matures. Under IFRS (specifically IAS 39 at the time of adoption, and later IFRS 9), that same bond might need to be "marked to market" every quarter, with gains and losses flowing through the income statement or Other Comprehensive Income (OCI).

This transition subjects Taiwanese financial institutions to increased volatility. The central tension investigated in this paper is whether this increased volatility represents "noise" (confusing investors) or "information" (revealing true economic risk).

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3. Literature Review

The academic literature surrounding accounting quality is vast, but it centers on a specific property known as "Value Relevance."

3.1 The Theoretical Framework: Ohlson (1995)

In accounting research, "value relevance" is the primary metric for assessing accounting quality. It is defined as the statistical association between financial statement figures—primarily earnings and book value—and stock market prices. Essentially, it measures how well accounting data summarizes information that investors actually use to value a firm.

This concept relies heavily on the seminal theoretical framework established by Ohlson (1995). The Ohlson model provides the structural link between a firm's market value, its book value, and its residual earnings. This relationship is formally expressed as:

$$P_t = B_t + \sum_{\tau=1}^{\infty} R^{-\tau} E_t[\tilde{x}^a_{t+\tau}]$$

By grounding empirical research in this identity, Ohlson formalized the idea that accounting data acts as a reliable "anchor" for intrinsic value. In this model, Book Value B_t is the baseline measure of value. If Book Value is measured perfectly (i.e., at true Fair Value), then the stock price P_t should equal Book Value, assuming no future abnormal earnings. Therefore, the closer the accounting standards bring Book Value to the true economic value of assets, the stronger the correlation between P_t and B_t should be. This serves as the foundation for our empirical tests.

3.2 The Paradigm Shift: Historical Cost vs. Fair Value

Investigating "Fair Value" measurement has become critical due to the global adoption of IFRS. Commentators and rating agencies have long posited that IFRS represents a distinct departure from national GAAP, largely due to its heavier reliance on fair value metrics (Ball, 2006; Ernst & Young, 2003). Fitch Ratings (2005) famously characterized IFRS as a "fair value-based accounting framework with some exceptions for historical cost."

This perception suggests a fundamental paradigm shift: moving away from the verifiable certainty of historical cost toward the market-responsive—yet volatile—nature of fair value.

The Debate: Relevance vs. Reliability

The academic debate often boils down to a trade-off between two qualitative characteristics of accounting information:

1. Historical Cost (Reliability): Proponents argue it provides reliability and verifiability. A historical cost is a factual transaction price that can be audited. However, critics note that for financial institutions, historical cost figures can become obsolete quickly. As Barth (1994) noted, failing to reflect current economic reality (such as interest rate shifts and credit risk changes) renders the balance sheet useless for predicting future cash flows.
2. Fair Value (Relevance): Proponents argue that fair value is more "relevant." By marking assets to market, the balance sheet reflects the current cash-equivalent value of the firm's resources. Barth et al. (2001) found that fair value estimates for bank investment securities were significantly correlated with share prices, suggesting that investors look through historical costs to the underlying market values anyway. If the accounting doesn't provide fair values, investors must estimate them, leading to information asymmetry.

However, Fair Value has detractors. The "Measurement Error" hypothesis suggests that because Fair Value often relies on managerial estimates (especially for illiquid assets), it introduces bias and noise. If investors suspect that management is manipulating fair value estimates to smooth earnings, they may discount the information, actually *reducing* its value relevance.

3.3 Empirical Evidence on IFRS Adoption

Empirical results on IFRS adoption have been mixed across different jurisdictions, suggesting that the success of IFRS depends heavily on the enforcement environment and local market structure.

- Positive Impact: Studies such as Barth et al. (2008) found that firms applying International Accounting Standards (IAS) generally evidenced higher accounting quality and value relevance. Similarly, research in the UK and Australia has often shown that IFRS adoption increases the

explanatory power of book value, particularly for firms with significant intangible assets or financial instruments.

- Mixed/No Impact: Conversely, studies in code-law countries (like France or Germany), which share similarities with Taiwan's legal history, found limited improvement. Hung and Subramanyam (2007), examining early adopters in Germany, found that while total assets increased under IFRS, the value relevance of book value did not significantly change compared to German GAAP. This suggests that simply changing the accounting rules without changing the underlying business practices or legal enforcement may not yield immediate benefits.

3.4 The Specific Case of Financial Institutions

For financial institutions, the impact of IFRS is expected to be more pronounced than in manufacturing or retail. This is largely due to IAS 39 (and subsequently IFRS 9), which mandates the classification and measurement of financial instruments.

Cairns et al. (2011) provided crucial empirical evidence regarding this sector. They found that the adoption of IFRS is pervasive within financial institutions and has significantly increased the compatibility (comparability) among them. This finding is significant because it suggests that despite the "policy choices" available in IFRS (e.g., classifying an asset as 'Available for Sale' vs 'Held to Maturity'), banks exhibited herding behavior, converging on similar accounting treatments.

This increased comparability theoretically reduces the cost of information for investors. When investors can easily compare the "Fair Value" net worth of a Taiwanese bank with that of a global peer, the risk premium should drop, and the stock price should track the reported net worth more closely.

3.5 Hypothesis Development

Based on the theoretical framework of Ohlson (1995) and the empirical evidence suggesting that Fair Value accounting captures economic reality better than Historical Cost (Barth et al., 2001), we propose that the mandatory adoption of IFRS in Taiwan represents a significant improvement in the informational content of financial statements.

Specifically, under the previous ROC GAAP, the Net Worth of a bank was a static figure, largely insensitive to market movements. The stock price, however, is dynamic and reflects the market's real-time assessment of value. This disconnect creates a high "error term" or "residual" in a regression of Price on Book Value.

4. Research Method

The sample consists of 20 financial institutions listed on the Taiwan Stock Exchange. These companies were selected based on the availability of complete financial data for the period spanning 10 years before and 10 years after the IFRS adoption year of 2013. The sample includes financial holding companies and banks, as these entities are most significantly affected by fair value accounting rules regarding financial assets.

To test the relationship between market value and net worth, we utilize a standard price-level regression model derived from the Ohlson (1995) framework. The reduced form model is specified as follows:

$$S_t = \beta_0 + \beta_1 EQ_t + \varepsilon_t \quad (1)$$

Where:

- S_t: The stock market price at time t (fiscal year-end).
- EQ_t: The Net Worth (Book Value) per share of company at time t.
- ε_t: The error term (residual).

We perform a Chow Test for each of 20 financial institutions to determine if the adoption of IFRS caused a "structural break" in the regression parameters. A structural break implies that the fundamental relationship between Net Worth and Stock Price changed significantly at the cutoff point (2013).

The Chow Test statistic (F) is calculated as:

$$F = \frac{(RSS_C - ((RSS_1 + (RSS_2))/k}{((RSS_1 + (RSS_2)/(N_1 + N_2 - 2k)} \quad (2)$$

Where:

- RSS_C : The Residual Sum of Squares of the combined data (pooled pre- and post-IFRS).
- RSS_C: The RSS of the Pre-IFRS period regression.

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- RSS_C : The RSS of the Post-IFRS period regression.
- N_1, N_2: Number of observations in each period.
- k: Number of parameters (2: intercept and slope).

While the Chow Test tells us if a change occurred, it does not inherently tell us if the model got *better*. To assess improvement, we compare the magnitude of the residuals.

- RSS (Residual Sum of Squares): Represents the discrepancy between the data and the estimation model.
- Interpretation: A lower RSS in the post-IFRS period (compared to the pre-IFRS period, adjusted for sample size if necessary, or simply comparing the raw RSS if periods are equal length) indicates that the regression line fits the data points more closely. In other words, deviations between the reported Net Worth and the Stock Price have become smaller.

5. Results

Table 1 summarizes the descriptive statistics. Generally, the variance in Net Worth increased for the majority of the 20 financial institutions post-2013. This is consistent with fair value accounting, which incorporates market volatility into the balance sheet.

Table 1 Descriptive Statistics prior and post to IFRS

Statistics	**Stock Prices prior to IFRS**	**Net Worth prior to IFRS**	**Stock Prices post to IFRS**	**Net Worth post to IFRS**
Count	180	180	220	220
Mean	17.52	14.12	18.69	18.57
Std	11.33	**4.11**	12.26	**11.27**
Min	4.00	4.23	6.23	10.64
Median	15.13	13.72	15.17	15.09
Max	74.00	32.17	76.30	79.08

This model run Chow test on each of 20 institutions, so obtains 20 lists of results. The column of p_value confirmed the existence of a structural break for only 7 financial institutions of the sample firms at the 10% significance level, although 15 financial institutions showed the less RSS during segment 2. This confirms that the year 2013 marked a statistically significant shift in how the market prices and the net worth of these financial institutions. The relationship between stock price and accounting value was not stable over time; it changed when the accounting standard changed.

Table 2 Summary of Chow Test prior and post to IFRS

Bank	**rss_full**	**rss_segment1**	**rss_segment2**	**chow_f_statistic**	**p_value**
1	157.21	112.12	27.47	0.95	0.41
2	57.03	29.92	6.64	4.20	0.04
3	50.41	23.12	11.02	3.57	0.05
4	99.57	53.89	16.31	3.14	0.07
5	63.61	7.38	47.72	1.16	0.34
6	99.55	54.96	3.60	5.25	0.02
7	63.69	29.58	24.67	1.31	0.30
8	144.18	76.99	60.91	0.34	0.72

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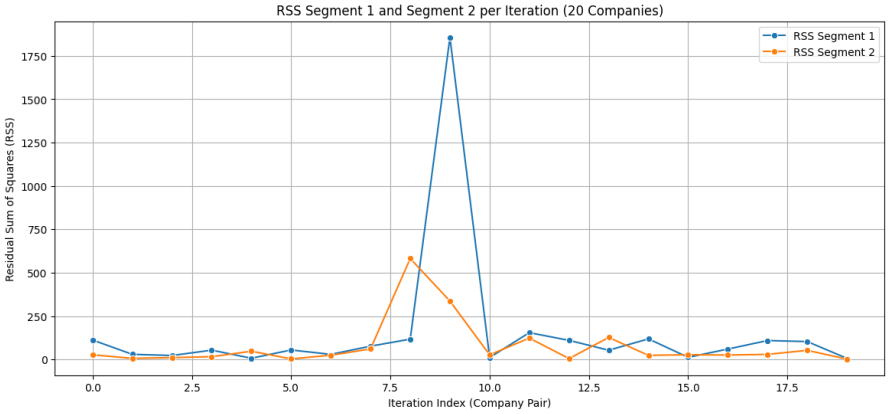
9	882.04	117.28	581.96	1.96	0.18
10	2325.93	1856.22	337.02	0.45	0.64
11	44.87	11.24	26.83	1.34	0.29
12	443.97	154.75	123.48	4.47	0.03
13	291.93	110.28	5.30	11.44	0.00
14	225.93	53.61	127.21	1.87	0.19
15	150.18	118.83	23.81	0.40	0.68
16	46.69	12.64	27.72	1.18	0.34
17	119.59	60.29	25.79	2.92	0.08
18	162.13	109.24	29.76	1.25	0.32
19	164.64	103.43	52.82	0.40	0.68
20	9.12	6.70	2.35	0.05	0.95

For the 15 companies where RSS declined, the data points (stock prices) clustered more tightly around the regression line predicted by Net Worth. The decline in RSS suggests that the "noise" in the accounting numbers has been reduced. Under the historical cost principle (Pre-IFRS), a bank might hold an asset purchased years ago at a low cost, while its market value is high. The stock price would reflect the high market value, but the book value would reflect the low cost, creating a large residual (error) in the regression. Under IFRS, that same asset is revalued to market price on the balance sheet. Consequently, the Book Value rises to meet the Stock Price. The gap (residual) shrinks, leading to a lower RSS.



6. Conclusions

This study examined the effect of IFRS adoption on the value relevance of net worth for 20 financial institutions in Taiwan. By utilizing the 2014 adoption date as a cut-off and performing a Chow Test, we confirmed that a structural change occurred in the valuation mechanism of these firms. The most significant finding is that 75% of the sampled institutions (15 out of 20) exhibited a lower Residual Sum of Squares (RSS) in the post-IFRS period.

These results strongly support the hypothesis that fair value accounting enhances the value relevance of the balance sheet.

- For Investors: The reported Net Worth in Taiwan's financial sector is now a more reliable anchor for valuation. The "cost principle" previously obscured the true economic position of financial firms; IFRS has removed this veil, bringing accounting numbers into closer alignment with market reality.

- For Regulators: The decision by Taiwanese regulators to adopt IFRS appears validated by the market data. The increased explanatory power of accounting information suggests that information asymmetry between management and shareholders has potentially been reduced.

While a lower RSS indicates a better fit, this study only utilized a simple regression of Price on Net Worth. Future research should include Earnings Per Share (EPS) as a control variable (the full Ohlson model) to see if the value relevance has shifted *from* earnings *to* book value. Additionally, extending the time period beyond the immediate post-adoption years would determine if this structural break was a permanent improvement in reporting quality or a temporary reaction to the new regime. In conclusion, the introduction of IFRS in Taiwan has successfully increased the informational utility of net worth for financial institutions, making the "Book Value" a metric that is significantly closer to the "Stock Price" than it was under the historical cost regime.

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