銀行債務契約對財務報導之影響：
來自臺灣 IFRS 調節數的證據

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摘要

　　本研究主要檢驗當一國強制轉換財務會計準則時，對於具有私債融資之上市公司，其債務契約條款是否會影響會計方法之選擇。以我國導入 IFRS 時為測試樣本，並在控制總體經濟因素影響下，直接衡量個別公司「IFRS 差異調節數」之橫斷面變異幅度，以捕捉債務契約條款是否會影響公司選擇有利之會計方法進行報導。「IFRS 差異調節數」為轉換會計準則年度時，以 IFRS 與 R.O.C.會計準則之財務報導差異數衡量，如資產總額差異數、權益總額差異數、淨利差異數等。實證結果發現：第一、舉債總金額與 IFRS 差異調節數兩者為正相關；財務條款數量與 IFRS 差異調節數亦為正相關。第二、進一步將 IFRS 差異調節數分成正向調整、負向調整兩組，發現前述實證結果主要來自於負向調整樣本組之效果。本研究實證結果隱含：公司在轉換新的會計準則如 IFRS 時，具有私債融資的公司，會藉由會計方法之選擇，以符合債務契約條款之規範。

關鍵詞：IFRS 差異調節數、債務契約、財務條款、會計品質

The Effects of Bank Loan Contracting on Financial Reporting: Evidence from Taiwan IFRS Reconciliation

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Abstract

This study examines whether bank loan provisions affect the choice of accounting policies for firms during the transition to a new accounting standard, International Financial Reporting Standards (IFRS). Controlling the same underlying economic performance (i.e., Taiwan loan market) and directly measuring and capturing the cross-sectional variation of the effects of individual IFRS firms (i.e., "Reconciliations") on contractual loan terms. We hypothesize that the magnitude of loan deal amount and various loan provisions affect reconciliations, as calculated by the differences in financial statement numbers under previous local GAAP and IFRS in the transition year. We empirically find that both loan amounts and the number of financial covenants are positively associated with the reconciliation amount's magnitude. We further divide our sample into positive and negative reconciliation sub-samples. We find that the negative reconciliation firms give rise to our overall results. Our findings are consistent with firms choosing upward/downward adjustments to affect/me provisions during the IFRS transition period.

Keywords: *IFRS reconciliation, Bank loan, Financial covenant, Accounting quality.*

1. INTRODUCTION

This study examines whether bank loan contracts affect firms' financial reporting behaviors during the transition to a new set of accounting standards, the International Financial Reporting Standards (IFRS). IFRS 1 (First-time Adoption of International Financial Reporting Standards) requires first-time adopters to recompile their prior-year financial statements from local accounting standards (local GAAP) to IFRS.[1] The difference in financial results between prior local GAAP and the newly adopted IFRS is so-called reconciliation. This reconciliation summarizes the IFRS adoption-induced change in the accounting representation of the same underlying economic performance.

Our research question is motivated by two main arguments.[2] First, managers have incentives that make accounting choices to affect financial reporting (Healy 1985; Bartov, Givoly, and Hayn 2002; Sweeney 1994; DeFond and Jiambalvo 1994). Accounting flexibility gives managers ample opportunity to exercise their discretions in financial reporting through choosing among accounting methods to influence accounting income. Hence, we posit that the conversion to IFRS creates conditions that management may exploit to favorably report financial position and performance to meet debt covenants or avoid possible default costs in case of debt breaching.

Second, IFRS provides managers more flexibility and strengthens managers' incentive to choose favorably financial reporting to meet debt covenants or avoid possible default. IFRS, however, are principles-based standards characterized by stipulating fewer detailed rules and providing limited guidance and interpretations of accounting practices. Hence, managers have greater flexibility in choosing accounting policies (Schipper 2003; Ball, Li, and Shivakumar 2015). In addition, IFRS uses fair value measurements extensively. Measuring fair value involves managers' subjective judgment and frequently verifying fair values. Thus, this unique setting allows us to investigate managerial discretion in accounting choice during the transition from one set of accounting standards to another.[3]

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[1] Take Taiwan-listed companies required to adopt IFRS as an example. The end of one listed firm's first IFRS reporting period is 31 December 2013. The listed firm presented financial statements following its ROC GAAP annually to 31 December each year up to, and including, 31 December 2012. The listed firm decides to present comparative information in those financial statements for one year only. Therefore, its transition date to IFRSs is the beginning of business on 1 January 2012.

[2] Wang and Welker (2011) present equity market evidence suggesting that management possesses superior private information about the effects of mandatory IFRS adoption on reported financial performance. Still, the likely impact of IFRS adoption was not communicated well to market participants during the transition process, creating asymmetric information between frim management and market participants that persisted until the beginning of the first IFRS year. Wang and Welker (2011) also find empirical evidence showing that management exploits this information asymmetry to strategically time equity transactions before the impact of IFRS adoption is revealed. Consequently, it is intuitive to posit that managers might exploit such asymmetric information to engage in favorable financial reporting in the transition period, especially when accounting standards are switching to a set of principles-based standards with extensive use of fair values.

[3] The authors appreciate the anonymous reviewer for such a valuable suggestion.

Thus, our study examines whether managers take advantage of adopting new accounting standards to engage in favorable financial reporting opportunistically. More specifically, our first question is to investigate whether a greater loan deal amount gives borrowers' managers a stronger incentive to select favorable accounting methods when switching to IFRS, resulting in a larger reconciliation amount. The second question is whether managers choose accounting methods that lead to more favorable accounting performance to avoid potential covenant violations or meet performance provisions.

We use Taiwan's transition to IFRS to test our hypotheses. To ensure arrangements before IFRS were signed under prior GAAP, we use debt contracts signed before the 2012 mandatory IFRS adoption and have a maturity date at least one year after IFRS adoption. We follow methods proposed by Wang and Welker (2011) and Christensen, Lee, and Walker (2009) to calculate reconciliations for operating income, total assets, and total equity. The sample selection results in 161 firm-year observations with available bank loans and financial data.

Our empirical evidence indicates that firms with a greater loan amount have greater reconciliations in operating income and total equity, suggesting that the more considerable the deal amount, the stronger incentive for managers to choose income-increasing accounting methods when converting to IFRS. When a loan contract includes more financial covenants, the borrower has larger reconciliation amounts in operating income and total equity, suggesting that loan covenants incentivize management to choose accounting methods that lead to favorable financial reporting. Next, we divide the full sample into positive and negative reconciliations sub-samples and reexamine the H1, H2, and H3.[4] We find that an upward (a downward) adjustment occurs for negative (positive) reconciliation. These findings indicate our results are mainly driven by the negative reconciliation sub-sample and are consistent with our argument that firms choose upward/downward adjustment to affect debt contracting.

Our findings make contributions to the IFRS literature in serval ways. First, our study refines (improves) deficiencies of difference-in-difference research designs. Previous studies investigating the effects of the IFRS adoption on the loan market give mixed results (Ball et al. 2015; Chen, Chin, Wang, and Yao 2015; Florou and Kosi 2015; Florou, Kosi, and Pope 2017).[5] One possible reason is that these studies adopt a difference-in-difference research design. To examine our research question, we directly measure and capture the variation of the effects of individual IFRS firms (i.e., "Reconciliations") on contractual loan terms.

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[4] The authors appreciate the anonymous reviewer for such a valuable suggestion.

[5] Other research that uses the difference-in-difference method to investigate the effects of mandatory IFRS adoption on financial reporting include, e.g., Daske, Hail, Leuz, and Verdi 2008; Li 2010; DeFond, Hu, Hung, and Li 2011; Tan, Wang, and Welker 2011; Landsman, Maydew, and Thornock 2012; Horton, Serafeim, and Serafeim 2013; Chen, Ng, and Tsang 2015.

Moreover, we choose only one jurisdiction, the Taiwan loan market, to mitigate the effects of various economic, institutional, and policy changes in cross-national studies on the credibility of empirical results.

Contrasting the pre-IFRS and post-IFRS periods and identifying whether or not firms are in "mandatory adoption" countries is insufficient to determine the effect of mandatory adoption. A simple comparison of pre-IFRS and post-IFRS periods fails to control for various economic, institutional, and policy changes during this period. This type of research design (i.e., difference-in-difference) suffers from endogeneity due to omitted correlated variables. Our sample selects from one country, making it possible to control for various economic, institutional, and policy changes during this period. More importantly, we measure the testing variable "reconciliation" cross-sectional variation under which we expect to observe a more reliable change in loan contracting terms for some firms than others. Our results would be more convincing. Without any cross-sectional variation, a simple before and after comparison makes it difficult to believe that the results are attributable to the mandatory IFRS adoption and not endogenously produced by other concurrent economic or policy changes.

Second, academic studies have documented several managerial incentives that affect accounting choices, such as bonus plan incentives (Healy 1985), equity market incentives (Bartov et al. 2002; Kaznik and McNichols 2002), and debt contract incentives (Sweeney 1994; DeFond and Jiambalvo 1994; Dichev and Skinner 2002). This study addresses the debt contract incentive's effect on financial reporting during the transition to a new set of accounting standards, IFRS.

Third, our findings have policy implications for regulators and capital providers. IFRS 1, First-time Adoption of International Financial Reporting Standards, states that the objective of providing "Reconciliations" information is to ensure an entity's first IFRS financial statements containing high-quality information. When a reporting entity switches local GAAP to IFRS, transparent and comparable financial statements would be achieved via "Reconciliation information." In other words, "Reconciliations information" can be viewed as a mechanism (which can be) generated at a cost that does not exceed the benefits when switching GAAP to IFRS. Thus, our research findings corroborate that IFRS 1 requirements have policy effectiveness, at least, to loan capital providers.

Take the findings of hypothesis 2 as an example. Empirical results find that financial covenants are positively associated with total equity reconciliations or operating income reconciliations. When dividing financial covenants into two subgroups: capital covenants and performance covenants[6], we find that the increase in reconciliations on total equity (operating income) is mainly driven by capital covenants (performance covenants). We posit that borrowing firms take the chance, during the transition period, to choose accounting methods

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[6] Capital (performance) covenants are based on the statement of financial position (statement of income).

that can result in favorable financial reporting, demonstrating that "reconciliation information" can provide value-relevance to debt holders.

The rest of the paper runs as follows. Section 2 reviews the literature and presents the hypotheses' development. Section 3 offers the research design and discusses the data. Section 4 shows the empirical results, and section 5 concludes.

2. LITERATURE AND HYPOTHESES

2.1 Debt Contracts and Accounting Choice

Debt contracts typically contain covenants based on accounting numbers to restrict dividend payments or new debt issuance. The literature on how debt contracts affect accounting choices primarily relies on the argument of the debt covenant hypothesis. The hypothesis predicts that managers have incentives to change accounting methods to circumvent financial covenants in debt contracts (Watts and Zimmerman 1986, 1990). Two central premises underlie this argument are (1) violating the covenant and entering into technical default is costly, and (2) managers have sufficient accounting discretion to avoid violating the covenant (Sweeney 1994). The strength of the incentive provided by debt contracts depends on the costs of violating the firm's debt covenants (Holthausen and Leftwich 1983; Dichev and Skinner 2002).

Extant research generally finds that technical default is costly. Smith (1993) indicates that the lender's reaction to technical default might cause high default costs to the borrower in renegotiations. Default costs are exceptionally high if the renegotiation fails. Beneish and Press (1993) report that more than half of their sample firms violate their covenants incur expenses. The average cost of technical default ranges between 1.2% and 2.0% of the firm's market value of equity. Similarly, Sweeney (1994) finds that approximately two-thirds of the firms in her sample that disclosed a technical default experienced some form of default cost (e.g., increased collateral, limited borrowing, or increases in interest rates).

Technical defaults also lead to indirect costs due to the implicit contract between the firm and the lender (Armstrong, Guay, and Weber 2010). For example, Chava and Roberts (2008) find that lenders' threat of accelerating debt payments affects firms' investment decisions, resulting in a net reduction in investment following the technical violation. Nini, Smith, and Sufi (2009) discover an increase in CEO turnover following covenant violations. Roberts and Sufi (2009) and Sufi (2009) find that covenant violations restrict borrowers' access to the credit market.

Given that technical defaults are generally costly, studies then examine whether firms take actions to avoid covenant violations. For example, firms can renegotiate the contract or carry out actual activities such as cutting R&D or dividends (Healy and Palepu 2001; Armstrong, Barth, Jagolinzer, and Riedl 2010). Firms with bank debt are likely to engage in

actual activities management to meet thresholds or accelerate revenue recognition than firms without bank debt in their capital structure (Roychowdhury 2006; Altamuro, Beatty, and Weber 2005).

Another stream of research focuses on whether firms use accounting choices to avoid violating covenants. Daniel, Denis, and Naveen (2008) examine whether dividend-paying firms make accounting choices when approaching their dividend constraints. They find that firms whose earnings are below expected dividend levels tend to manage earnings upward, but this effect exists only for firms with debt in their capital structure. Beatty and Weber (2003) investigate whether the provision that allows accounting changes affect managers' decision of making voluntary accounting changes and how the changes affect contract calculations. They find that managers are more likely to make income-increasing accounting changes when accounting changes affect contract calculations. Beatty and Weber (2006) examine the interaction between covenant tightness and the flexibility to include accounting changes in contract calculations on the adoption decisions associated with Statement of Financial Accounting Standards 142, goodwill impairments (SFAS142). They find that firms with tight covenants and where accounting changes affected covenant compliance calculations were less likely to take write-offs when adopting SFAS142.

2.2 IFRS Reconciliations

Reconciliation is the difference in financial results between prior local GAAP and the newly adopted IFRS that provides a summary measure of the IFRS adoption-induced change in the accounting representation of the same underlying economic performance. Wang and Welker (2011) use IFRS reconciliation of net income to investigate whether management takes information advantage around accounting standard changes to time equity financings. They argue that the switch from local reporting standards to IFRS causes a shift in accounting representation of the firm's financial position and performance that may cause investors to revalue the firm's equity. Nonetheless, it is difficult for investors to distinguish between the changes resulting from underlying business performance and those due to accounting changes. Since management is likely to understand the accounting effects of switching to IFRS before investors, IFRS adoption creates an exogenously imposed information asymmetry between management and investors.

Wang and Welker (2011) find an association between IFRS reconciliation amounts and returns for equity-issuing firms. They also find evidence that firms are less likely to engage in equity issuance before converting to IFRS if they enjoy an unexpected change in net income resulting from the conversion to IFRS. Wang and Welker (2011) indicate that management exploits its information advantage and strategically arranges the timing of equity transactions before revealing the impact of IFRS adoption on reported financial performance. Inspired by Wang and Welker (2011), we investigate whether loan contracts

incentivize management to exploit information advantage to manage accounting numbers surrounding the transition to IFRS. We expect the difference in financial numbers between prior GAAP and the new IFRS, the reconciliation amounts, includes the changes resulting from underlying business performance and those due to accounting changes. If loan contract terms incentivize management to engage in intentional financial reporting, we expect the reconciliation amounts also reflect managerial discretion in choosing new accounting methods when converting to IFRS.

2.3 The Effects of Debt Contract Incentive on IFRS Reconciliations

Accounting information plays a vital role in reducing agency costs when entering a debt contract and during the life of a debt contract (Holthausen and Watts 2001; Watts and Zimmerman 1986, 1990). Before signing a debt contract, creditors rely on accounting information to evaluate debtors' credit risks and assess the time and chances to generate the expected future cash flows for creditworthiness. After signing the debt contract, creditors use accounting-based debt covenants (e.g., financial covenants, provision of performance pricing, dividend restrictions, and collaterals) as a mechanism to signal any damages on debt rights. Any changes in borrowers' accounting policy choices will significantly affect the supervision of debt contracts after signing debt contracts.

The wide use of fair value measures by IFRS and the principles-based nature of IFRS aims at reporting equity's economic substance. Unlike rules-based standards, IFRS substantially reduces managers' chance to be involved in limitation tests or structural transactions. IFRS provides fewer scope exceptions or treatment for irregularities and offers limited detailed implementation guidance (Schipper 2003). As such, IFRS might provide more managerial discretions for financial reporting. The mandatory adoption of IFRS is likely to increase the cost of existing debt contracts because covenants in these contracts were developed under former local GAAP. Creditors formulate optimal terms based on prior local GAAP by evaluating borrowers' financial performance. However, the optimal conditions of these debt contracts may change after adopting IFRS. Therefore, the probabilities of covenant violation may increase (decrease) due to changes in a firm's actual performance or the effects of IFRS adoption. It is reasonable to expect managers to take advantage of IFRS adoption to increase earnings (or total assets) to comply with debt covenants. Altamuro et al. (2005) find that firms with bank loans tend to choose accounting policies that accelerate revenue recognitions relative to firms without outstanding bank loans. As a result, firms with a more significant loan deal amount would have a stronger incentive to choose more favorable accounting policies when switching to IFRS to avoid possible breaching of loan covenants.

Wang and Welker (2011) examine the association between reconciliations resulting from mandatory IFRS adoption and equity issuance during the transition period. They find anecdotal evidence suggesting that management possesses superior private information about the effects of mandatory IFRS adoption on reported financial performance. Yet, the likely

impact of IFRS adoption was not communicated well to market participants during the transition process. Asymmetric information between management and market participants persisted until the beginning of the first IFRS year. Wang and Welker also find empirical evidence showing that management strategically times equity transactions before the impact of IFRS adoption is revealed, suggesting that management exploits information advantage during the transition process. It is intuitive to posit that managers might use such information advantage and the higher flexibility embedded in IFRS to select favorable accounting methods that would lead to higher assets, equity, or net income. Managers' incentive to engage in such beneficial financial reporting when switching to IFRS is potent if the firm's loan is more significant in scale. Therefore, these firms will likely have more substantial reconciliation amounts of earnings, total assets, or total equity when switching to IFRS. Given the above, this study establishes hypothesis 1 as follows:

H1: Firms with a greater loan deal amount have larger reconciliation amounts.

The following hypothesis examines the effects of debt provisions on the magnitude of reconciliation amounts. Lenders usually incorporate financial or non-financial covenants in debt contracts. Through monitoring these covenants, lenders detect the possibilities of borrowers' actions in damaging creditors' debt rights (Leftwich 1983). When borrowers are of higher accounting quality, such as firms adopting more conservative accounting (Zhang 2008) or have better internal control (Costello and Wittenberg-Moerman 2011), lenders usually include accounting-based financial covenants in debt contracts.

Creditors usually grant the debtor a chance for renegotiation if debtors violate terms in the financial covenants. However, default costs are unavoidable in the case of debtor default.[7] Previous research reveals that debtors use changes in accounting policies to avoid default and the related default costs. Sweeney (1994) discovers that borrowers are more likely to employ an income-increasing accounting method at the year of (not the year before) default occurrence. Beatty, Ramesh, and Weber (2002) then indicate that debtor is willing to pay a higher interest rate in exchange for the flexibility of voluntary (or mandatory) accounting changes to circumvent violation of the debt contract. Their finding implies that debtors are willing to pay higher interest rates in exchange for potential voluntary or mandatory accounting policy changes to avoid costly debt covenant violations. When debt contracts allow borrowers to change accounting policy voluntarily, managers will utilize income-increasing accounting methods to prevent possible covenant violations (Beatty and Weber 2003).

The accounting flexibility under IFRS is higher, and the transition process creates incremental information asymmetry between the borrower and lender. We expect the

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[7] Roberts and Sufi (2009) indicate after renegotiation debtor will face a higher interest rate, restrict the chance of raising another new debt, decline debtor's credit agreement and so forth unfavorable economic result.

borrowers' management to choose income-increasing accounting methods that lead to more favorable accounting performance to avoid potential covenant violations. As a result, the borrowers are likely to have higher reconciliations of earnings, total assets, or total equity when switching to IFRS. Based on the above discussion, this study establishes hypothesis 2 below:

H2: Firms whose debt contracts include financial covenants are more likely to have larger reconciliation amounts.

In a traditional bank loan, the interest rate is priced using a fixed spread over a floating benchmark such as London Interbank Offered Rate (LIBOR) or prime. The performance pricing provision is an alternative way to determine the interest rates of debt contracts. Performance pricing explicitly makes the interest charged on a bank loan a function of the borrower's current credit rating or of their financial ratios. For example, some arrangements apply earnings before interest, taxes, depreciation, and amortization (EBITDA) to measure performance. Accrued interest on each loan term on the reported EBITDA in each income statement. Interest expense is negatively related to EBITDA (Asquith, Beatty, and Weber 2005).

Performance pricing provisions link a loan's interest rate spread to performance measures. Including performance pricing would increase the manager's incentive to engage in income-increasing activities in each loan term because interest payment directly links to accounting performance for that particular term (Beatty and Weber 2003; Asquith et al. 2005). Consequently, the provision of performance pricing induces borrower's management to choose income-increasing accounting methods when transferring to IFRS, thereby resulting in higher reconciliations of earnings, total assets, or total equity. According to this argument, this study establishes H3 below:

H3: Firms whose debt contracts include income statement-based performance pricing provisions are more likely to have larger reconciliation amounts.

3. RESEARCH DESIGN

3.1 Data and Sample Selection

This study uses the debt contract data of Taiwanese firms from 2007 to 2010.[8] Taiwan adopted IFRS in 2013. Thus reconciliations were calculated in 2012, using IFRS numbers subtracted by former GAAP numbers deflated by total assets. We select loans contracted before the IFRS adoption with a maturity date at least one year after adopting IFRS to ensure these contracts were signed according to the prior GAAP. Therefore, loans contracted before

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[8] The sample year is the prior five years to the mandatory adoption of IFRS. The reason why choosing five years as a sample year is that the maturity of bank debt contracts is an average of five years. 2011 is excluded to avoid transition year's effects on loan contracts.

IFRS adoption are formulated under original GAAP, enabling us to test whether borrowers use the transition period to make favorable accounting choices.[9]

We acquired the debt contract data and related provisions from Reuters Loan Pricing Corporation's (LPC) DealScan database. DealScan database provides the information pertinent to the loan contract and the related debtor-creditor information, including the contracting date, total loan number, interest rate, loan period, collateral, loan type, and debt covenants. Financial data is mainly from the Taiwan Economic Journal database, such as reconciliation amounts and variables to control firm characteristics. Table 1 shows the sample selection and distribution. Excluding firms without private loans and thereby missing loan and financial data, the sample selection results in 161 firm-year observations from 81 unique companies with available bank loan data and financial variable data for the 2007-2010 period. The firm-year observations were distributed evenly over the four years regarding sample distribution. And 46 out of the 81 companies are electronic-industry firms, indicating that our sample comprises about 57% electronic-industry firms, consistent with the general industry distribution of Taiwanese listed companies. In addition, our research sample's distribution is uniform with Yao, Chin, and Wang (2018), who also investigate bank loan contracting using Taiwan data.

Table 1　Sample

Panel A: Sample selection	# of observations
All listed firms from 2007 to 2010	5,347
Less：firm without bank loans	(5,161)
Firm-year with bank loans	**186**
Less：Missing loan and financial variables	(25)
Total testing firm-year observations	**161**

Panel B: Sample distribution Panel B: Sample distribution by year	
Year	# of observations
2007	41
2008	41
2009	39
2010	40
Total	**161**

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[9] Compared with bonds, bank loan contracts usually contain financial covenants. The covenants are more diversified (Ball et al. 2015), and the threshold of these financial covenants are generally much tighter than that of bond contracts (El-Gazzar and Pastena 1991). These properties provide management incentives to exercise financial reporting discretion when converting to IFRS.

3.2 Model Design

3.2.1 Testing H1

Using the model proposed by Wang and Welker (2011) and Christensen et al. (2009), we regress reconciliation amount on the deal amount of bank loans and other control variables to test H1.

$$Reconciliation_{i,2012} = \beta_0 + \boldsymbol{\beta_1 DealAmount} + \beta_2 SIZE_{i,2011} + \beta_3 BM_{i,2011}$$
$$+ \beta_4 LEV_{i,2011} + \beta_5 LOSS_{i,2011} + \beta_6 Big4_{i,2011}$$
$$+ \beta_7 Electronic\_industry_i + \Sigma\beta_j Year\_Dummies + \varepsilon_i. \qquad (1)$$

$Reconciliation_{i,2012}$ is the difference in reported earnings (or total assets, or total equity) between former local GAAP and IFRS in 2012 deflated by total assets. $DealAmount$ is the ratio of the loan amount to total assets for loans before adopting IFRS. We screen this variable, $DealAmount$, for debt contracts existing four years (from 2007 to 2010) before the IFRS adoption.

Control variables include the following variables. $SIZE_{i,2011}$ is the natural logarithm of total assets. $BM_{i,2011}$ is the ratio of book value to market value. $LEV_{i,2011}$ is the ratio of total liabilities to total assets. Cormier, Aerts, Ledoux, and Magnan (2009) state that managers tend to choose optional exemptions with a negative impact on equity at the transition date, potentially to avoid further increases in leverage from the first-time adoption of IFRS. $LOSS_{i,2011}$ is a dummy variable that equals one if the firm has a net loss and zero otherwise. Previous studies suggest that managers of firms with a net loss are more likely to strategically select one or more optional exemption choices at the transition date, which in turn cause the increase of the assets, liabilities, or equity in financial reports. $Big4_{i,2011}$ is a dummy variable that takes one if the firm is audited by Big 4 auditors and zero otherwise. We expect that high-quality auditors are more able to constrain firms to report higher earnings. Appendix 1 shows definitions of all variables.

3.2.2 Testing H2 and H3

The testing models for H2 and H3 are as follows:

$$Reconciliation_{i,2012} = \alpha_0 + \boldsymbol{\alpha_1 FinancialCovenant} + \boldsymbol{\alpha_2 PerformancePricing}$$
$$+ \alpha_3 SIZE_{i,2011} + \alpha_4 BM_{i,2011} + \alpha_5 LEV_{i,2011} + \alpha_6 LOSS_{i,2011}$$
$$+ \alpha_7 Big4_{i,2011} + \alpha_8 Electronic\_industry_i$$
$$+ \Sigma\alpha_j Year\_Dummies + \varepsilon_i. \qquad (2)$$

The measurement of $Reconciliation_{i,2012}$, and control variables are the same as the equation (1). We screen these two variables, $FinancialCovenant$ and $PerformancePricing$, for debt contracts existing four years (from 2007 to 2010) prior to the IFRS adoption.

FinancialCovenant is the number of the accounting-based financial covenant. *PerformancePricing* is whether on debt contract contains provision of performance pricing based on the financial statement variable.

4. EMPIRICAL RESULTS

4.1 Descriptive Statistics and Correlation Analyses

Table 2 presents descriptive statistics of all variables. We apply four reconciliation measures. The three measures in our main tests, *R_TA*, *R_TE*, *R_OI*, their mean (median) are -0.140, -0.698, -0.115 (0.001, -0.167, 0.001), respectively. The mean and median of the reconciliation measure in our further test, *R_EBT*, are -0.103 and 0.001, respectively. Raw reconciliations without scaling by total assets, *RR_TE*, *RR_OI*, *RR_EBT*, are also listed in Table 2. *Total_Assets* is the deflator of all reconciliations.

We employ five debt contract features as our test variables. The mean and median of the variable *DealAmount* are 6.415 and 4.517, respectively. The distributions of Q1 and Q3 of *DealAmount* show some of our observations have relatively larger loans. The mean and median of *FinancialCovenant* are 2.347 and 3.000, respectively, suggesting that our observations have on average 2 or 3 financial covenants in their loan contracts. The mean (median) of *Num_BS_FinancialCovenant* and *Num_IS_FinancialCovenant* is 1.708 (2.000) and 0.639 (1.000). These statistics suggest that our sample firms generally have more balance sheet-based financial covenants compared to income statement-based financial covenants. *PerformancePricing* indicates the occurrence of performance pricing provision in our sample. The mean and median of *PerformancePricing* are 0.018 and 0.000, respectively, suggesting that performance pricing provision is rare in our sample firms' loan contracts.

Table 3 presents the Pearson and Spearman correlation coefficient of all variables used in this paper. At first glance, we find that all of our reconciliation measures are highly correlated, indicating they are likely to capture the same phenomena. We next find that loan contract features, *DealAmount, FinancialCovenant, Num_BS_FinancialCovenant*, and *Num_IS_FinancialCovenant* are positively correlated with *R_TE*, *R_OI*, *R_EBT*. *PerformancePricing* is the only test variable that does not significantly correlate with reconciliation measures. *R_TA* is the only reconciliation measure that does not significantly correlate with all the contract features. None of the variables in a specific test model exhibits excessive correlation, and therefore our estimated coefficients are less likely to be vulnerable to multicollinearity issues.

Table 2 Descriptive Statistics of Variables

	Mean	Med	Q1	Q3	Std	N
Dependent variable						
R_TA	-0.140	0.001	-0.010	0.386	3.102	161
R_TE	-0.698	-0.167	-0.878	0.001	1.826	161
R_OI	-0.115	0.001	-0.049	0.005	0.408	161
R_EBT	-0.103	0.001	-0.006	0.031	0.503	161
RR_TA	596,356,770	0	-3887	97,515,500	3,819,039,781	161
RR_TE	-434,344,614	-19,785	-348,417	0	141,195,795	161
RR_OI	-69,690,739	0	-15,255	1,447	50,165,617	161
RR_EBT	-65,351,391	0	-4,515	8,334	25,379,650	161
$Total\_Assets$	69,599,431,650	25,653,572	11,586,077	52,850,025	11,232,791,920	161
Independent variable						
$DealAmount$	6.415	4.517	2.319	7.703	6.479	161
$FinancialCovenant$	2.347	3.000	0.000	4.000	1.659	161
$Num\_BS\_FinancialCovenant$	1.708	2.000	0.000	3.000	1.263	161
$Num\_IS\_FinancialCovenant$	0.639	1.000	0.000	1.000	0.481	161
$PerformancePricing$	0.018	0.000	0.000	0.000	0.135	161
Control variable						
$Size_{t-1}$	7.486	7.511	7.128	7.850	0.582	161
BM_{t-1}	1.406	1.265	0.800	1.923	0.788	161
LEV_{t-1}	0.521	0.521	0.428	0.666	0.170	161
$Loss_{t-1}$	0.335	0.000	0.000	1.000	0.473	161
$Big4_{t-1}$	0.913	1.000	1.000	1.000	0.282	161

Note: R_TA is defined as the reconciliation of total assets. R_TE is defined as the reconciliation of total equity. R_OI is defined as the reconciliation of operating income. R_EBT is defined as the reconciliation of earnings before tax. All dependent variables are deflated by total assets ($Total\_Assets$). RR_TE, RR_OI, RR_EBT represent raw reconciliations without scaling by total assets. $DealAmount$ is defined as the ratio of deal amount borrowed from bank debt to total assets. $FinancialCovenant$ is an indicator equaling 1 if the debt contract contains financial covenants. $Num\_BS\_FinancialCovenant$ is defined as the number of balance sheet-based financial covenants in the debt contract. $Num\_IS\_FinancialCovenant$ is defined as the number of income statement-based financial covenants in the debt contract. $PerformancePricing$ is defined as an indicator variable that is equal to 1 if a bank debt contract includes the provision of performance pricing, and 0 otherwise. $SIZE_{t-1}$, firm size, is defined as the natural logarithm of total assets. BM_{t-1} is defined as the ratio of book value to market value. LEV_{t-1}, leverage, is defined as the ratio of total liabilities to total assets. $LOSS_{t-1}$ is defined as an indicator variable that is equal to 1 if net income is less than zero, and 0 otherwise. $Big4_{t-1}$ is defined as an indicator variable that is equal to 1 if the audit firm is big4, and 0 otherwise.

Table 3　Pearson and Spearman Correlation Coefficients

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1) R_TA	1.00	0.25***	0.02	0.13*	-0.06	0.12	0.11	0.18**	0.04	0.16**	-0.03	-0.09	0.18**	0.04
(2) R_TE	0.54***	1.00	0.07	0.02	0.38***	0.41***	0.40***	0.37***	0.15*	-0.31***	0.16**	-0.07	0.26***	-0.20**
(3) R_OI	0.44***	0.76***	1.00	0.54***	0.16**	0.12	0.11	0.21***	0.06	-0.31***	-0.09	-0.26***	-0.20**	-0.11
(4) R_EBT	0.39***	0.62***	0.71**	1.00	0.09	0.02	-0.03	0.08	0.02	-0.18**	0.05	-0.21***	-0.17***	-0.03
(5) DealAmount	-0.05	0.21***	0.17**	0.04	1.00	0.09	0.10	0.16**	0.09	-0.57***	0.01	-0.01	0.07	-0.13
(6) FinancialCovenant	0.06	0.44***	0.32***	0.19*	0.03	1.00	0.97***	0.81***	0.06	-0.16**	0.23***	-0.14*	0.01	-0.11
(7) Num_BS_FinancialCovenant	0.04	0.43***	0.30***	0.17**	0.01	0.98***	1.00	0.71***	0.05	-0.16**	0.19**	-0.14*	-0.01	-0.08
(8) Num_IS_FinancialCovenant	0.10	0.39***	0.33***	0.19**	0.06	0.86***	0.76***	1.00	0.10	-0.21***	0.27***	-0.18***	-0.01	-0.14*
(9) PerformancePricing	0.02	0.06	0.04	0.03	0.03	0.08	0.06	0.10	1.00	-0.09	-0.01	-0.10	0.09	0.04
(10) SIZE	0.15**	-0.14*	-0.19**	-0.01	-0.50***	-0.15*	-0.13	-0.18**	-0.06	1.00	0.01	0.32***	0.07	0.13*
(11) BM	0.03	0.24***	0.16**	0.30***	0.02	-0.22***	0.19**	0.26***	-0.02	0.05	1.00	-0.19**	0.27***	-0.19**
(12) LEV	-0.05	-0.16**	-0.29***	-0.21***	-0.14*	-0.11	-0.10	-0.13*	-0.09	0.40***	-0.08	1.00	-0.14**	-0.17**
(13) LOSS	0.21***	0.21***	0.08	0.20**	0.17**	-0.01	-0.01	-0.01	0.09	-0.01	0.29***	-0.12	1.00	0.17**
(14) Big4	-0.01	-0.08	-0.13*	-0.09	-0.20***	-0.09	-0.07	0.13*	0.04	0.11	-0.17**	-0.18**	0.17**	1.00

Notes: 1. All variables are defined in appendix 1. The lower-left corner shows Pearson correlation coefficients. The upper-right corner presents spearman correlation coefficients.
2. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively (two-tailed).

4.2 Main Results

For our main results, we tabulate the regression results using three loan contract feature variables (*DealAmount, FinancialCovenant, PerformancePricing*) and three reconciliation measures (*R_TA*, *R_TE*, *R_OI*).

4.2.1 The effect of deal amount on reconciliations (H1)

H1 investigates whether the reconciliation of earnings (total assets/total equity) is greater when a firm with a larger deal amount on the bank loan. Table 4 reports the regression results. The variable of interest is the *DealAmount*, which captures whether the magnitude of the deal amount gives borrowers a greater incentive to choose more favorable accounting policies to avoid a possible violation of contract terms or avoid default costs. In model 1, the estimated coefficient of *DealAmount* is insignificant (-0.01, *t*-value=-0.23). However, the estimated coefficient of *DealAmount* is positive and significant at 10% level in model 2 (0.04, *t*-value=1.76) and at 5% level in model 3 (0.01, *t*-value=2.20). Thus, *DealAmount* shows positive correlations with reconciliations of operating income and total equity but does not significantly correlate with the reconciliation of total assets. When borrowers owe a larger amount, they have a stronger incentive to take advantage of the transition to IFRS to choose more favorable accounting policies to increase total equity and operating income to prevent a violation of loan contract terms. This is probably a consequence of the flexibility inherent in principles-based accounting standards. Firms with a larger loan deal amount have greater IFRS reconciliations. As a result, our empirical findings support H1.

Regarding the results of control variables, they are generally as expected. *SIZE* is positively correlated with *R_TA*, while insignificantly correlated with *R_TE* and *T_OI*. *BM* is positively significantly associated with *R_TE*. *LEV* is negative but only significantly correlated with *R_OI*. *LOSS* is all positive and is significantly correlated with *R_TA* and *R_TE* at 1% and 5% levels, respectively, indicating that firms that suffered losses are more likely to use the IFRS transition to increase their total assets and total equity. *Big4* is negative but only significantly correlated with *R_OI*, suggesting that Big 4 auditors mainly constrain clients' earnings relative to assets and equity. *Electronic_industry* is a dummy variable indicating whether the borrower belongs to the electronic industry. This variable is significantly positively correlated with *R_OI*, suggesting that electronic borrowers have higher reconciliation of operating income.

Table 4　The Effect of Deal Amount on Reconciliation (H1)

Model	(1)	(2)	(3)
Variables	*R_TA*	*R_TE*	*R_OI*
Intercept	-6.52*	-0.11	0.53
	(-1.69)	(-0.05)	(1.09)
DealAmount	**-0.01**	**0.04***	**0.01****
	(-0.23)	**(1.76)**	**(2.20)**
SIZE	1.20**	-0.09	-0.02
	(2.33)	(-0.32)	(-0.43)
BM	-0.22	0.41**	0.04
	(-0.66)	(2.18)	(1.04)
LEV	-2.53	-1.35	-0.70***
	(-1.60)	(-1.50)	(-3.45)
LOSS	1.76***	0.69**	0.05
	(3.16)	(2.18)	(0.84)
Big4	-1.38	-0.60	-0.25**
	(-1.47)	(-1.12)	(-2.10)
Electronic_industry	0.25	0.20	0.14*
	(0.45)	(0.62)	(1.94)
year_d1	-1.34**	-0.07	-0.03
	(-1.99)	(-0.18)	(-0.37)
year_d2	0.65	1.07***	0.13
	(0.96)	(2.73)	(1.56)
year_d3	-0.69	-0.01	-0.06
	(-1.03)	(-0.02)	(-0.78)
Adj. R^2	0.095	0.145	0.150
#Observations	161	161	161

Notes: 1. This table presents whether the magnitude of deal amount on the bank debt will affect the reconciliation using ordinary least squares (OLS). In model 1, the reconciliation of total assets (*R_TA*) is regressed on the interested term *DealAmount*, and control variables. In model 2, the reconciliation of total equity (*R_TE*) is regressed on the interested term *DealAmount*, and control variables. In model 3, the reconciliation of total operating income (*R_OI*) is regressed on the interested term *DealAmount*, and control variables. *DealAmount* is a ratio of deal amount borrowed from bank debt to total assets. All variables are defined in appendix 1.

2. All regressions control for industry and year fixed effects.

3. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively (two-tailed).

4.2.2 The effect of financial covenants and performance pricing provision on reconciliations (H2 and H3)

Table 5 presents the regression results of H2 and H3. H2 examines whether debt contracts with financial covenants are more likely to have larger reconciliation of earnings (or total assets/total equity). The estimated coefficients of *FinancialCovenant* are 0.22 (*t*-value=1.37), 0.45 (*t*-value=5.29), and 0.07 (*t*-value=3.49) in three dependent variables, *R_TA* (model 1), *R_TE* (model 2), and *R_OI* (model 3) models, respectively. *FinancialCovenant* is positively correlated with reconciliations of total equity and operating income but not statistically correlated with the reconciliation of total assets. Next, the estimated coefficients

of *PerformancePricing* are 0.47 (*t*-value=0.27), 0.34 (*t*-value=0.36), and 0.02 (*t*-value=0.13) in *R_TA* (model 1), *R_TE* (model 2), and *R_OI* (model 3) models, respectively. The finding indicates that performance pricing provision does not affect accounting reconciliations with all insignificant results. Overall, our empirical results suggest that debt contracts with financial covenants are more likely to have higher reconciliation. Still, the provision of performance pricing does not impact IFRS reconciliations. As a result, our findings support H2, while H3 is not.

Table 5   The Effect of Covenants on Reconciliation (H2&H3)

Model	(1)	(2)	(3)
Variables	*R_TA*	*R_TE*	*R_OI*
Intercept	-8.25**	-0.23	0.45
	(-2.57)	(-0.14)	(1.14)
FinancialCovenant	**0.22**	**0.45*****	**0.07*****
	(1.37)	**(5.29)**	**(3.49)**
PerformancePricing	**0.47**	**0.34**	**0.02**
	(0.27)	**(0.36)**	**(0.13)**
SIZE	1.36***	-0.14	-0.02
	(2.97)	(-0.60)	(-0.52)
BM	-0.30	0.21	0.01
	(-0.90)	(1.19)	(0.32)
LEV	-2.24	-0.64	-0.59***
	(-1.40)	(-0.76)	(-3.01)
LOSS	1.74***	0.86***	0.08
	(3.20)	(2.99)	(1.23)
Big4	-1.20	-0.48	-0.22**
	(-1.30)	(-0.97)	(-1.99)
Electronic_industry	0.23	0.13	0.13*
	(0.42)	(0.44)	(1.85)
year_d1	-1.69**	-0.77**	-0.13
	(-2.35)	(-2.02)	(-1.55)
year_d2	0.24	0.15	-0.01
	(0.32)	(0.38)	(-0.03)
year_d3	-0.90	-0.54	-0.14*
	(-1.32)	(-1.50)	(-1.74)
Adj. R^2	0.100	0.262	0.204
#Observations	161	161	161

Notes: 1. This table shows the effect of different covenants on reconciliation using ordinary least squares (OLS). In model 1, the reconciliation of total assets (*R_TA*) is regressed on the interested terms, *FinancialCovenant*, *PerformancePricing,* and control variables. In model 2, the reconciliation of total equity (*R_TE*) is regressed on the interested terms, *FinancialCovenant*, *PerformancePricing,* and control variables. In model 3, the reconciliation of total operating income (*R_OI*) is regressed on the interested terms, *FinancialCovenant*, *PerformancePricing,* and control variables. *FinancialCovenant* is the number of financial covenants in bank debt contracts. *PerformancePricing* is an indicator variable that is equal to 1 if bank debt contract include provision of performance pricing, and 0 otherwise. All variables are defined in appendix 1.

2. All regressions control for industry and year fixed effects.

3. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively (two-tailed).

4.3 Further Tests

4.3.1 Further analyses of positive and negative reconciliations

Empirical results of H1 indicate the magnitude of loan amount leads to an upward adjustment for the earnings- and equity-based reconciliations. Also, the number of financial covenants results in an upward adjustment for the earnings- and equity-based reconciliations. This section further reexamines whether an upward adjustment for the earnings- and equity-based reconciliations remain the same direction (or show the same pattern) when we divide the total sample into two groups: the positive and negative sub-samples.

We present sub-samples for positive and negative reconciliations in Table 6 and Table 7. Table 6 (7) reports the effect of deal amount (the number of financial covenants) on positive and negative reconciliations. For the convenience of comparisons, Panel A of Table 6 (7) shows the full sample result, the same as Table 4 (5). In Table 6, Panel B and Panel C reports "*DealAmount*" tests for positive and negative reconciliations sub-samples. The estimated coefficient of *DealAmount* is not significant in positive reconciliations of earnings, total assets, and total equity. However, *DealAmount* is significantly positive in negative reconciliations sub-samples, as shown in Panel C. An upward adjustment incentivized by loan deal amount appears in negative reconciliations sub-samples.

Table 7 reports "*FinancialCovenant*" tests for positive and negative reconciliations sub-samples. We can find an asymmetric results in "*FinancialCovenant*" tests. In positive reconciliations sub-samples (Panel B of Table 7), the estimated coefficient of *FinancialCovenant* is negatively significant associated with total assets reconciliations (coefficient=-0.36, *t*-value=-3.28) and with operating earnings reconciliations (coefficient= -0.002, *t*-value=-2.47). In negative reconciliations sub-samples (Panel C of Table 7), the estimated coefficient of *FinancialCovenant* is positively significant associated with total equity reconciliations (coefficient=0.51, *t*-value=4.30) and with operating earnings reconciliations (coefficient= 0.07, *t*-value =1.77).

When separating the tests for the positive and negative sub-samples, an upward adjustment occurs for negative reconciliation, and a downward adjustment occurs for positive reconciliation. However, the negative reconciliation effect dominates, which gives rise to the overall result. In other words, reconciliation shrinks in the financial covenants for both negative and positive reconciliation firms. This outcome is also consistent with a negative sign on the absolute value.

The asymmetric effect in accounting choices and the reduction in the magnitude of reconciliation are interesting and maybe worthwhile exploring in future studies. One explanation is that firms choose upward/downward adjustment to affect debt contracting. Another way to interpret this is that firms with financial covenants are willing to minimize reconciliation.

Table 6   The Effect of Deal Amount on Positive and Negative Reconciliation Reconciliation-Further Test (H1)

Variables	(1) R_TA	(2) R_TE	(3) R_OI
Panel A: Raw Reconciliation			
DealAmount	-0.01	**0.04***	**0.01****
	(-0.23)	**(1.76)**	**(2.20)**
Control Variable	Omitted	Omitted	Omitted
Adj. R^2	0.095	0.145	0.150
#Observations	161	161	161
Panel B: Positive Reconciliation			
DealAmount	-0.02	0.01	0.01
	(-0.90)	(0.93)	(0.37)
Control Variable	Omitted	Omitted	Omitted
Adj. R^2	0.301	0.173	0.120
#Observations	113	64	101
Panel C: Negative Reconciliation			
DealAmount	0.02	**0.07***	**0.07*****
	(0.11)	**(1.93)**	**(3.60)**
Control Variable	Omitted	Omitted	Omitted
Adj. R^2	0.269	0.163	0.559
#Observations	48	97	60
Panel D: The Absolute Value of Reconciliation			
DealAmount	-0.02	-0.02	-0.001
	(-0.60)	(-1.19)	(-0.93)
Control Variable	Omitted	Omitted	Omitted
Adj. R^2	0.238	0.196	0.291
#Observations	161	161	161

Notes: 1. This table reports the effects of the deal amount on the raw reconciliations, the positive and negative reconciliations, and the absolute value of reconciliations. In model 1, the reconciliation of total assets (R_TA) is regressed on the interested term *DealAmount*, and control variables. In model 2, the reconciliation of total equity (R_TE) is regressed on the interested term *DealAmount*, and control variables. In model 3, the reconciliation of total operating income (R_OI) is regressed on the interested term *DealAm*ount, and control variables. *DealAmount* is a ratio of deal amount borrowed from bank debt to total assets. All variables are defined in appendix 1.

2. All regressions control for industry and year fixed effects.

3. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively (two-tailed).

Table 7　The Effect of the Number of Financial Covenants on Positive and Negative Reconciliation Reconciliation-Further Test (H2)

Variables	(1) *R_TA*	(2) *R_TE*	(3) *R_OI*
Panel A: Raw Reconciliation			
FinancialCovenant	0.22	**0.45*****	**0.07*****
	(1.37)	**(5.29)**	**(3.49)**
PerformancePricing	0.47	0.34	0.02
	(0.27)	(0.36)	(0.13)
Control Variable	Omitted	Omitted	Omitted
Adj. R^2	0.100	0.262	0.204
#Observations	161	161	161
Panel B: Positive Reconciliation			
FinancialCovenant	**-0.36*****	-0.06	**-0.002****
	(-3.28)	(-0.88)	**(-2.47)**
PerformancePricing	0.31	0.01	0.03
	(0.34)	(0.01)	(0.49)
Control Variable	Omitted	Omitted	Omitted
Adj. R^2	0.357	0.157	0.168
#Observations	113	64	101
Panel C: Negative Reconciliation			
FinancialCovenant	0.50	**0.51*****	**0.07***
	(1.51)	**(4.30)**	**(1.77)**
PerformancePricing	Excluded	Excluded	Excluded
Control Variable	Omitted	Omitted	Omitted
Adj. R^2	0.31	0.282	0.475
#Observations	48	97	60
Panel D: The Absolute Value of Reconciliation			
FinancialCovenant	**-0.44*****	**-0.39*****	**-0.07*****
	(-3.37)	**(-4.99)**	**(-4.44)**
PerformancePricing	0.01	-0.06	0.01
	(0.01)	(-0.07)	(0.01)
Control Variable	Omitted	Omitted	Omitted
Adj. R^2	0.285	0.301	0.366
#Observations	161	161	161

Notes: 1. Due to our sample firms' lack of performance pricing provisions, the regression reported in Panel C excludes the dummy variable of performance pricing provisions.

2. This table reports the effects different covenants on the raw reconciliations, the positive and negative reconciliations, and the absolute value of reconciliations. In model 1, the reconciliation of total assets (*R_TA*) is regressed on the interested terms, *FinancialCovenant*, *PerformancePricing*, and control variables. In model 2, the reconciliation of total equity (*R_TE*) is regressed on the interested terms, *FinancialCovenant*, *PerformancePricing*, and control variables. In model 3, the reconciliation of total operating income (*R_OI*) is regressed on the interested terms, *FinancialCovenant*, *PerformancePricing*, and control variables. *FinancialCovenant* is the number of financial covenants in bank debt contracts. *PerformancePricing* is an indicator variable that is equal to 1 if bank debt contract include provision of performance pricing, and 0 otherwise. All variables are defined in appendix 1.

3. All regressions control for industry and year fixed effects.

4. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively (two-tailed).

4.3.2 Separate financial covenants into balance sheet and income statement based covenants

Our empirical findings indicate that financial covenants in the loan contract are positively associated with reconciliations of total equity and operating income. There are two categories of financial covenants, capital covenants (balance sheet-based financial covenants) and performance covenants (income statement-based financial covenants) (Christensen and Nikolaev 2012). To provide more specific evidence on the economic role of financial covenants, we further test the effects of the balance sheet (*Num_BS_FinancialCovenant*) and income statement (*Num_IS_FinancialCovenant*) based on financial covenants on reconciliations. Table 8 reports the regression results. The estimated coefficients on *Num_BS_FinancialCovenant* are -0.24 (*t*-value=-0.84), 0.44 (*t*-value=2.78) and 0.03 (*t*-value=0.92) in three dependent variables, *R_TA* (model 1), *R_TE* (model 2), and *R_OI* (model 3) models, respectively. *Num_BS_FinancialCovenant*'s positive impact is exhibited merely in the reconciliation of total equity. *Num_IS_FinancialCovenant* are 1.67 (*t*-value=2.14), 0.50 (*t*-value=1.19) and 0.18 (*t*-value=1.87) in three dependent variables, *R_TA* (model 1), *R_TE* (model 2), and *R_OI* (model 3) models, respectively. *Num_IS_FinancialCovenant*'s positive impacts appear in reconciliations of total assets and operating income. The result shows that capital covenants mainly drive the increase in reconciliations of total equity, probably due to IFRS's extensive use of fair value measurements. Performance covenants mainly drive the increase in reconciliations of operating income, consistent with principles-based standards provide ample opportunities for managers to engage in favorable financial reporting in the transition period.

4.3.2 Alternative measure of reconciliation: earnings before tax

For robustness, this study uses earnings before taxes as a fourth reconciliation measure to test our hypotheses (H1-H3). Table 9 presents the results of estimating equations (1) and (2), which regress the reconciliation of earnings before tax (measured by *R_EBT*) on *DealAmount*, and a set of control variables for equation (1), and *FinancialCovenant*, *PerformancePricing*, and a bunch of control variables for equation (2). The regression results indicate no association between independent variables and reconciliation variables. Because *R_OI* mainly captures the effect of core earnings, and *R_EBT* captures two effects of core earnings and transitory earnings, we posit that transitory earnings are relatively less useful in measuring firm performance for debt contracting, which leads to these insignificant results between *DealAmount (FinancialCovenant, Num_BS_FinancialCovenant, Num_IS_FinancialCovenant) and R_EBT*. Our arguments are consistent with Li (2010), who shows that debt contracting parties choose contracting variables for efficient contracting.

Table 8　The Effect of the Number of Financial Covenants on the Reconciliation-Further Test (H2)

Model	(1)	(2)	(3)
Variables	*R_TA*	*R_TE*	*R_OI*
Intercept	-9.05***	-0.25	0.39
	(-2.82)	(-0.15)	(0.98)
Num_BS_FinancialCovenant	**-0.24**	**0.44*****	**0.03**
	(-0.84)	**(2.78)**	**(0.92)**
	(-0.84)	**(2.78)**	**(2.92)**
Num_IS_FinancialCovenant	**1.67****	**0.50**	**0.18***
	(2.14)	**(1.19)**	**(1.87)**
	(2.14)	**(1.19)**	**(1.87)**
PerformancePricing	**0.31**	**0.33**	**0.01**
	(0.18)	**(0.36)**	**(0.08)**
SIZE	1.45***	-0.14	-0.02
	(3.17)	(-0.58)	(-0.41)
BM	-0.40	0.21	0.01
	(-1.17)	(1.15)	(0.14)
LEV	-2.16	-0.64	-0.59***
	(-1.36)	(-0.75)	(-2.98)
LOSS	1.80***	0.86***	0.08
	(3.34)	(2.98)	(1.30)
Big4	-1.11	-0.48	-0.22**
	(-1.21)	(-0.96)	(-1.99)
Electronic_industry	0.38	0.13	0.14**
	(0.68)	(0.45)	(1.99)
year_d1	-1.77**	-0.77**	-0.14
	(-2.49)	(-2.02)	(-1.62)
year_d2	0.29	0.15	0.01
	(0.40)	(0.38)	(0.02)
year_d3	-0.80	-0.54	-0.14*
	(-1.19)	(-1.48)	(-1.66)
Adj. R^2	0.116	0.257	0.206
#Observations	161	161	161

Notes: 1. This table examines whether the number of financial covenant on the bank debt will affect the reconciliation using ordinary least squares (OLS). In model 1, the reconciliation of total assets (*R_TA*) is regressed on the interested term *Num_BS_FinancialCovenant*, *Num_IS_FinancialCovenant* and control variables. In model 2, the reconciliation of total equity (*R_TE*) is regressed on the interested term *Num_BS_FinancialCovenant*, *Num_IS_FinancialCovenant*, and control variables. In model 3, the reconciliation of total operating income (*R_OI*) is regressed on the interested term *Num_BS_FinancialCovenant*, *Num_IS_FinancialCovenant* and control variables. *Num_BS_FinancialCovenant* is the number of financial covenant based on balance sheet in debt contract. *Num_IS_FinancialCovenant* is the number of financial covenant based on income statement in debt contract. All variables are defined in appendix 1.

2. All regressions control for industry and year fixed effects.

3. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively (two-tailed).

Table 9   Further Test of Reconciliation of Earnings Before Tax (H1.H2.H3)

Model	(1)	(2)	(3)
Variables	*R_EBT*	*R_EBT*	*R_EBT*
Intercept	-0.20	-0.40	-0.42
	(-0.33)	(-0.80)	(-0.84)
DealAmount	**0.001**		
	(0.05)		
FinancialCovenant		**0.03**	
		(1.36)	
Num_BS_FinancialCovenant			**0.01**
			(0.42)
Num_IS_Financial			**0.08**
			(0.65)
PerformancePricing		**0.01**	**0.01**
		(0.06)	**(0.05)**
SIZE	0.06	0.07	0.08
	(0.75)	(1.09)	(1.11)
BM	0.13**	0.11**	0.11**
	(2.52)	(2.21)	(2.12)
LEV	-0.71***	-0.66***	-0.66***
	(-2.87)	(-2.67)	(-2.65)
LOSS	0.18**	0.18**	0.18**
	(2.08)	(2.16)	(2.17)
Big4	-0.27*	-0.24*	-0.24*
	(-1.83)	(-1.69)	(-1.67)
Electronic_industry	0.11	0.11	0.11
	(1.28)	(1.24)	(1.27)
year_d1	-0.04	-0.09	-0.10
	(-0.45)	(-0.88)	(-0.90)
year_d2	0.14	0.07	0.08
	(1.34)	(0.68)	(0.69)
year_d3	-0.13	-0.17	-0.16
	(-1.29)	(-1.58)	(-1.55)
Adj. R^2	0.156	0.161	0.156
#Observations	161	161	161

Notes: 1. This table examines whether the magnitude of deal amount on the bank debt will affect the reconciliation, the effect of different covenants on reconciliation and the effect of financial covenant number in the bank contract on the reconciliation using ordinary least squares (OLS). In model 1, the reconciliation of earnings before tax (*R_EBT*) is regressed on the interested term *DealAmount* and control variables. In model 2, the reconciliation of earnings before tax (*R_EBT*) is regressed on the interested term *FinancialCovenant* and control variables. In model 3, the reconciliation of earnings before tax (*R_EBT*) is regressed on the interested term *Num_BS_FinancialCovenant*, *Num_IS_FinancialCovenant* and control variables. All variables are defined in appendix 1.

2. All regressions control for industry and year fixed effects.

3. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively (two-tailed).

5. CONCLUSION

Studies on the effects of IFRS adoption on the debt market are limited. The extant literature, if any, pertinent to the debt market only focuses on how the post-adoption of IFRS affects the formulation of debt contracts and the contractibility of IFRS numbers on bank debts. This study takes a different view to analyze whether the transition to IFRS will allow firms to choose more favorable accounting treatments to comply with bank loan provisions.

This study uses reconciliations, the differences in financial statement numbers under previous local GAAP and IFRS in the transition year, to explore if the magnitude of deal amount on bank debts is related to IFRS reconciliation. Additionally, we investigate whether various provisions in debt contracts prompt firms to adopt more favorable accounting policies to avoid contract breaching. Empirical findings demonstrate that firms with a higher deal amount on the bank debt or bank debt provisions containing financial covenants would choose more favorable accounting policies to increase total equity and operating income during the conversion from local GAAP to IFRS. Our results suggest that debt contracts give firms incentives to use accounting discretions during the transition of a new set of accounting standards to avoid future covenant violations. Our findings echo Beatty and Weber (2003), who demonstrated that managers tend to do income-increasing accounting changes to comply with loan covenants if the debt contract permits a borrowing company to change accounting policy in the duration of debt.

This study uses a comprehensive reconciliation as a summary measure of the IFRS adoption-induced change in the accounting representation under the same underlying economic performance. Though this measure can quantify the economic effect of IFRS, it is unknown which accounting method change was made under the newly adopted IFRS. Therefore, future studies could conduct more in-depth examinations by distinguishing which accounting policy was changed to increase the reporting numbers when adopting IFRS. In addition, our sample is small due to the typical small-scale Asian loan market. We suggest that future relevant studies should extend the research sample to all countries that have converted to IFRS.

The empirical methods employed by this study have several limitations. First, some debt contracts require the calculation of covenants based on the measurement of Frozen GAAP. Suppose this is the case, the evidence that managers' incentive to choose favorable accounting policy during the IFRS transition period could be weakened. Second, a better empirical design is to observe the accounting policy changes on each transaction directly. However, it is impractical to conduct such direct observation due to data unavailability. Third, our sample is selected from loan contracts signed by Taiwanese companies. We suggest that future research extend the sample to all countries that have converted to IFRS. Finally, researchers should be cautious when referring to our study. The interaction between contract and mandatory IFRS adoption is beyond our scope.

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Appendix 1　Variable Definitions

Variable name	Definition
Dependent Variables[*]:	
R_TA	Reconciliation of total assets
R_TE	Reconciliation of total equity
R_OI	Reconciliation of operating income
R_EBT	Reconciliation of earnings before tax
DealAmount	The ratio of deal amount borrowed from bank debt to total assets
FinancialCovenant	An indicator variable that is equal to 1 if bank debt contract contains financial covenants, and 0 otherwise
Num_BS_FinancialCovenant	The number of balance sheet based financial covenant in debt contract
Num_IS_FinancialCovenant	The number of performance financial covenant based on income statement
PerformancePricing	An indicator variable that is equal to 1 if bank debt contract include provision of performance pricing based on financial statements, and 0 otherwise
$SIZE_{t-1}$	Firm Size, the natural logarithm of total assets
BM_{t-1}	The ratio of book value to market value
LEV_{t-1}	Leverage, the ratio of total liabilities to total assets
$LOSS_{t-1}$	An indicator variable that is equal to 1 if net income less than zero, and 0 otherwise
$Big4_{t-1}$	An indicator variable that is equal to 1 if the audit firm is big4, and 0 otherwise

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[*] When company at the first-time adoption of IFRS, it has to disclose the reporting number difference between original GAAP an IFRS prior one year to IFRS adoption year. Reconciliations are financial number difference under two set of accounting standards, in this paper is the difference between ROC GAAP and IFRS. All dependent variables were deflated by total assets.

Appendix 2   Financial Covenants Definitions

Financial Covenant	Definition[*]
Balance sheet based financial covenant	
Max. Leverage	Debt / Assets
Max. Senior Debt Leverage	Senior Debt / Assets
Max. Debt-to-Tangible Net worth	Debt / Tangible Net Worth
Max. Debt-to-Equity	Debt / Net Worth
Min. Current Ratio	Current Assets / Current Liabilities
Min. Quick Ratio	(Account Receivable + Cash & Equivalents) / Current Liabilities
Min. Net Worth	Net Worth
Min. Tangible Net Worth	Tangible Net Worth
Income statement based financial covenant	
Min. Interest Coverage	EBITDA / Interest Expense
Min. Cash Interest Coverage	EBITDA / Interest Paid
Min. Fixed Charge Coverage	EBITDA / (Interest Expense + Principal + Rent Expense)
Min. Debt Service Coverage	EBITDA / (Interest Expense + Principal)
Min. EBITDA	EBITDA
Min. Debt-to-EBITDA	Debt / EBITDA
Min. Senior Debt-to-EBITDA	Senior Debt / EBITDA

[*] The definitions in this table are referred to Demerjian and Owens (2016).