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Who classifies interest payments as financing activities? An analysis of classification shifting in the statement of cash flows at the adoption of IFRS

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A B S T R A C T

In this study, we examine a firm's classification shifting behavior in the statement of cash flows under the IFRS regime. Specifically, we examine the determinants and economic consequences of classification shifting to manage operating cash flows. Based on a sample of firms that mandatorily adopt IFRS in Korea, the result shows that financially distressed firms, firms with high interest payments, firms with high bank ownership, and *Chaebol* affiliated firms tend to shift their interest payments from operating to financing cash flows, thereby increasing the total amounts of operating cash flows. We also find evidence largely consistent with the view that investors discount operating cash flow surprises from classification shifting. Overall, we provide initial evidence that classification shifting exists in the statement of cash flows under the IFRS regime and its economic consequences are significant.

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1. Introduction

In this study, we examine the determinants and economic consequences of classification shifting within the statement of cash flows under the International Financial Reporting Standards (IFRS) regime.¹ In particular, we examine whether interest payments are opportunistically classified as financing activities instead of operating activities in the statement of cash flows and, if so, whether capital market participants impound the information in firm valuation. Interest payments are generally of great concern to firms because they account for a significant portion of cash flows and are often associated with debt covenants.² Interest payments were required to be classified as operating cash flows (OCF) before the adoption of IFRS in Korea.³ On the other hand, the International Accounting Standards (IAS) 7 *Statement of Cash Flows* allows managers considerable discretion when presenting the statement of cash flows. Specifically, IFRS (IAS 7.31) enables firms to classify interest payments as either operating or financing activities. In the presence of this discretion related to the classification of interest payments, we expect that certain managers have incentives to shift interest payments from *operating* to *financing* activities to increase OCF.

The statement of cash flows is one of the key financial statements that investors rely on for firm valuation. In particular, investors advocate the use of OCF to ascertain the credibility of accrual-based earnings because they believe that OCF is difficult to manipulate and it comes from the main revenue-producing activities of the firm. As seen in the significant accounting scandals of the early 21st century, such as Enron and WorldCom, investors pay more attention to OCF, and an increasing portion of security analysts tend to disseminate cash flow forecasts in recent years. Call et al. (2009) show that the number of firms that have at least one analyst cash flow forecast has substantially increased from 233 firms in 1993 to 3375 firms in 2008. Minton and Schrand (1999) provide evidence that OCF is directly related to the interest payment ability of companies. More importantly, OCF has been widely used for valuation among analysts (Block, 1999). Similarly, DeFond and Hung (2003) show that OCF is incrementally important for valuation. Considering the increased importance of OCF, firms have strong incentives to report higher OCF in their statements of cash flows. In other words, firms are likely to report high levels of OCF to provide the market with positive perceptions of firm value and future cash flows. Anecdotal evidence from the financial press also suggests that some firms that voluntarily adopt IFRS tend to exploit the discretion provided by the IFRS in reporting their statements of cash flows. Concerns have been raised that the inflation of OCF would undermine the comparability of financial statements in the financial press (The Korea Economic Daily, 2009).

In this paper, we select a sample of Korean firms to investigate the influence of the adoption of IFRS on the classification choices of interest payments in the statement of cash flows. We choose Korean firms as our sample for several reasons. First, Korea fully adopted IFRS in 2011, supplanting the Korean GAAP, which is very compatible to the U.S. GAAP. The adoption of IFRS in Korea has resulted in debates on the costs and benefits of IFRS and sheds light on the potential effect of the adoption of IFRS by U.S. firms.

Second, our motivation to use Korean firms comes from prior literature suggesting that classification shifting activities are likely to differ in a bank-centered economy. Compared to the U.S., which is a capital-market centered economy, Korean firms rely significantly more on bank financing (Kang et al., 2010). The influence of banks on borrowing firms has been particularly significant during the financial crisis in Korea in the late 1990s (Ferri et al., 2001; Bae et al., 2002b). The importance of bank debt financing has continuously increased since the financial crisis. Over the past decade, Korean firms have relied on banks for more than 40% of their financing, which is significantly higher than 20% for U.S. firms (Bank for International Settlements, BIS Quarterly Review, 2014). This evidence suggests that bank debt financing plays a major role in the external financing of Korean firms. Consequently, interest payments to the bank is a major cash outflow and is an important determinant of financial health for firms in bank-centered financial systems, such as that of Korea. To the extent that OCF is an important

¹ Similar to prior research, we define classification shifting as the deliberate classification of items within the statement of cash flows.

² In our sample firms, a firm's interest payment accounts for approximately 4% of its market capitalization, and the amount of classification shifting related to the interest payment is approximately 7% of total assets.

³ The previous Korean Generally Accepted Accounting Principles (GAAP) is comparable to US GAAP, which requires interest payments to be classified as OCF.

performance metric and managers have incentives to manage OCF, we are more likely to observe classification shifting using interest payments.

Third, analysts in Korea generally do not provide cash flow forecasts, whereas cash flow forecasts have become common in the U.S. Analysts who provide cash flow forecasts are likely to have more knowledge of a firm's ability to generate future cash flows. Therefore, they may play effective monitoring roles to deter managers from inflating cash flows. In this regard, the absence of cash flow forecasters may encourage firms to engage in classification shifting in the cash flow statement.

Fourth, we have limited evidence of strategic reporting in the statement of cash flows compared to extensive evidence of managers who selectively report items in the income statement to change investors' perceptions of firm performance (Bowen et al., 2005; McVay, 2006; Black and Christensen, 2009; Fan et al., 2010). One notable exception is Lee (2012), which provides evidence of classification shifting in the statement of cash flows among U.S. firms. The recent adoption of IFRS by Korean firms provides a unique experimental setting to allow us to test the association between classification shifting in the statement of cash flows and the incentives of firms to increase OCF. Our setting allows us to collect information on each firm's classification shifting behavior by comparing the old GAAP with IFRS.

Using hand-collected information regarding classification shifting from a sample of firms that mandatorily adopted IFRS in 2011 and 2012, we provide several interesting findings. We find that a considerable number of firms use classification shifting in the statement of cash flows to overstate operating cash flows, and the amount of overstated OCF is economically significant. About 13.5% of the sample firms shift interest payments from operating to financing activities under IFRS. These firms, on average, overstate OCF by 16.9% and report 13.2 million dollars as interest payments.

We document that financially distressed firms, firms with larger amounts of interest payments, firms with more than 5% bank ownership and *Chaebol* affiliated firms are more likely to engage in classification shifting, thereby suggesting that these firms are likely to have incentives to report higher levels of OCF to change market participants' perceptions regarding firm performance.

More importantly, we examine whether investors recognize classification shifting in the statement of cash flows and find evidence that they negatively react to classification shifting. This evidence is largely consistent with the notion that the market discounts OCF surprises when classification shifting is used.

Our findings contribute to the literature in several ways. First, we build upon the literature on the effect of mandatory IFRS adoption on financial reporting (Barth et al., 2008; Hail et al., 2010a, 2010b; Ahmed et al., 2013) and provide evidence that financial reporting standards that permit greater flexibility are likely to result in an increase in managerial opportunism, thereby shedding light on the debate surrounding the costs and benefits of IFRS (De Franco et al., 2011). This study complements prior studies that document the effects of IFRS on financial reporting quality, which has almost exclusively focused on traditional accounting quality measures such as discretionary accruals, accounting conservatism, variability of earnings, and the comparability of accounting numbers across firms.

Second, we add to the literature on classification shifting (McVay, 2006; Fan et al., 2010; Lail et al., 2014). While prior research focuses on income classification shifting, we show that classification shifting is also present in the statement of cash flows. Our paper is closely related to Lee (2012), which provides evidence that managers of U.S. firms overstate OCF by shifting items in their statements of cash flows. We provide an additional channel through which classification shifting is used in the statement of cash flows under IFRS. Our study is important in that classification discretion is permitted under IFRS and it affects a large group of firms adopting IFRS. The findings of this study extend the cash flow reclassification literature to an international setting, which may potentially offer policy implications to IFRS adopters and potential adopters. We also extend Lee (2012) by identifying additional managerial incentives that may specifically lead to classification shifting under IFRS and by examining the reaction of the stock market to classification shifting.

We find that the flexibility in the classification of OCF under IFRS facilitates managerial discretion to increase operating cash flows, thereby decreasing the comparability of the financial statement.⁴

⁴ Currently, IAS 7 states that "Cash flows from interest and dividends received and paid shall each be disclosed separately. Each shall be classified in a consistent manner from period to period as either operating, investing or financing activities [IAS 7.31]." No specific rule exists regarding the classification of these items as operating, investing, or financing cash flows.

However, investors appear to incorporate managerial opportunism associated with OCF shifting in stock prices, alleviating the concerns. Our findings should be of interest to information users and financial regulators.

The remainder of this study is organized as follows. Section 2 provides a literature review and develops the hypotheses. Section 3 discusses the data and research design. Section 4 presents descriptive statistics and describes the empirical results. Section 5 concludes the paper.

2. Related literature and hypotheses

2.1. The adoption of IFRS and accounting information quality

Our study draws on two strands of literatures. First, it is related to the research on the effect of mandatory IFRS adoption on financial reporting. After the adoption of IFRS, debates that the introduction of IFRS may either increase or decrease the ability of investors to observe the real economic states of firms have emerged. The direction of change in accounting quality caused by IFRS adoption is ambiguous and remains as an empirical question.

Prior studies suggest that IFRS adoption can limit the opportunistic behavior of managers, thereby improving accounting quality as measured by various metrics such as variability of net income, discretionary accruals, or timely loss recognition. For example, Barth et al. (2008) find that accounting quality, measured as the frequency of reporting small positive and large negative net income and the variability of net income over cash flows, increases after voluntary IFRS adoption among the European Union (EU) countries. Chen et al. (2010) examine the mandatory IFRS adoptions of EU countries and conclude that IFRS adoption increases accounting quality.

On the other hand, several studies demonstrate that IFRS adoption does not have a positive influence on accounting quality. For example, Van Tendeloo and Vanstraelen (2005) find that firms that have voluntarily adopted IFRS do not present any difference in earnings quality compared with firms that adopt the German GAAP standards in Germany. Ahmed et al. (2013) use similar measures as Barth et al. (2008) and find that IFRS adoption is not related to higher accounting quality. Jeanjean and Stolowy (2008) argue that IFRS provides opportunistic discretion to managers. By using data from countries that have already adopted IFRS (Australia, France, and the UK), they do not find any significant increases in earnings quality and show that earnings management has increased in France. These studies imply that IFRS adoption does not necessarily decrease the opportunistic discretion of managers. Moreover, Callao et al. (2007) show that the mandatory IFRS adoption in Spain worsens local comparability and widens the gap between book and market values. Lin et al. (2012) find that the transition from U.S. GAAP to IFRS undermines accounting quality in Germany. These results suggest that mandatory IFRS adoption increases manager's discretion and deteriorates accounting quality.

The effect of IFRS adoption may differ across social and political environments. Byard et al. (2011) suggest that the influence of IFRS adoption on the quality of analysts' information is a function of enforcement regime and firm-level reporting incentives. Daske et al. (2008) find that the consequence of IFRS adoption is associated with the strength of regimes or government regulations. In another study, Holthausen (2009) asserts that the cross-country comparisons of firms will not be fully realized until the underlying institutional and economic factors become more similar.

In the long-term, IFRS adoption may improve comparability in accounting information across countries because of its uniform accounting infrastructure. However, the disparity of the regimes and institutions among countries may hinder the improvement in accounting quality. In the short-term, increased managerial discretion from IFRS adoption may lead to the opportunistic behavior of managers, resulting in a decrease in accounting quality.

2.2. Classification shifting

Our study is also related to a firm's discretionary reporting behavior in the statement of cash flows. Managers selectively report items in financial statements to change the perceptions of firm performance. Managers strategically use pro-forma earnings (or non-GAAP earnings) as a tool to influence

the market. For example, [Bhattacharya et al. \(2003\)](#), [Doyle et al. \(2003\)](#) and [Bowen et al. \(2005\)](#) find that managers emphasize earnings items that are more value-relevant and more market-favorable in pro-forma earnings reports. Managers also define earnings by deliberately choosing their reporting items. [Black and Christensen \(2009\)](#) examine the difference between pro-forma earnings and GAAP earnings and find that recurring items, such as depreciation, R&D cost, and stock-based compensation cost, are removed in pro-forma earnings reports because of managers' intention to meet their strategic target earnings.

This study focuses on classification shifting, which is defined as the deliberate classification of items within a financial statement. Similar to other discretionary reporting behaviors, classification shifting is also used to manage investors' perception. [McVay \(2006\)](#) argues that firms manage core earnings through classification shifting. She provides evidence that managers manipulate core earnings by reclassifying ordinary operating expenses as special items. Using quarterly special items, [Fan et al. \(2010\)](#) show that classification shifting in the income statement is more prevalent in the fourth quarter than in interim quarters and find more evidence of classification shifting when firms just meet or beat earnings benchmarks or have limited opportunities for earnings management using accruals. [Lail et al. \(2014\)](#) examine management's use of the "corporate/other" segment to conceal the true performance of operation segments and find that core profits are masked when proprietary motives are presented by shifting expenses to core segments. This finding indicates that managers have incentives to shift expenses between core segments and the corporate/other segments for their strategic purposes.

Although a number of studies examine a firm's classification shifting behavior in the income statement, evidence on the statement of cash flows is limited. Recently, [Lee \(2012\)](#) provides evidence that managers have incentives to inflate reported OCF through classification shifting in the statement of cash flows. She conducts two tests, one examining firms with restatements as a consequence of cash flow misclassification and the other examining the classification of tax benefits of stock options. She demonstrates that managers with stronger incentives are more likely to restate OCF and classify the tax benefits of stock options as operating cash inflows to increase OCF. [Lee \(2012\)](#) finds that classification shifting is more pronounced for firms with higher levels of financial distress, greater probability of bankruptcy, and the existence of analysts' cash flow forecasts.

Overall, these studies indicate that accruals management is not the only option for managers and managers may use classification shifting as an alternative to manage core performance metrics. However, prior research provides limited empirical evidence on classification shifting in the statement of cash flows. Moreover, these studies do not provide evidence on the economic consequences of classification shifting. Our study fills this gap by providing evidence on the determinants and consequences of classification shifting in the statement of cash flows under the IFRS regime.

2.3. Hypotheses

The importance of the statement of cash flows has significantly increased since the accounting scandals emerged in the early 21st century. The statement of cash flows reports three types of cash flows, namely: operating, investing, and financing cash flows.⁵ Among these cash flows, OCF is generally of the most significant concern to information users such as investors and creditors. OCF comes from the main revenue-producing activities of firms and is more sustainable than cash flows from investing or financing activities. [Block \(1999\)](#) also confirms that OCF is considered one of the most important performance metrics for firm valuation and firm sustainability using a survey.

As discussed earlier, IAS 7.31 provides firms with the discretion to classify interest payments as either operating or financing activities, whereas the old Korean GAAP required firms to classify interest payments as operating activities. Given that interest payments are important cash flows for most firms in a bank-centered economy such as Korea, managers have incentives to deliberately classify

⁵ The definitions of the three cash flows described in IAS 7 are as follows: "Operating activities are the main revenue-producing activities of the enterprise that are not investing or financing activities, so operating cash flows include cash received from customers and cash paid to suppliers and employees [IAS 7.14]; Investing activities are the acquisition and disposal of long-term assets and other investments that are not considered to be cash equivalents [IAS 7.6]; Financing activities are activities that alter the equity capital and borrowing structure of the enterprise [IAS 7.6]."

interest payments from core cash flows (i.e., OCF) to non-core cash flows (i.e., financing cash flows) to increase their OCF after IFRS adoption.

Opportunistic classification shifting to purposely mislead financial statement users is inconsistent with the goals of financial reporting and the spirit of accounting standards. While prior studies including [McVay \(2006\)](#) and [Lee \(2012\)](#) suggest that such classification shifting leads to restatements and Accounting and Auditing Enforcement Releases (SEC's enforcement actions), the classification shifting of interest payments may induce lower costs than other types of opportunistic reporting behavior. IFRS permits managerial discretion to classify each of the three cash flow activities, providing management with a legitimate tool for changing the perception of financial statement users. Moreover, it is difficult for outside parties without detailed knowledge and information about firms' operations to detect and to question managers' reporting choices. Therefore, understanding the classification shifting behavior in the statement of cash flows would be helpful for information users to evaluate a firm's capacity to generate future cash flows.

In this paper, we posit that managers may have incentives to categorize interest payments from operating activities to financing activities in the statement of cash flows to alter the perceptions of financial users under IFRS. To document this opportunistic classification shifting under the IFRS regime, we first investigate whether classification shifting through interest payments is present even in a bank-centered economy and determine the factors that prompt managers to engage in interest payment classification, if any. We then evaluate the economic consequences of such classification behavior by examining investor reaction to classification shifting.

Since firms are expected to manage reported OCF in response to incentives, we identify three factors that are associated with strong incentives to manage OCF: financial health, bank dependence, and ownership structure. First, prior research suggests that cash flow information predicts financial health. Thus, as a firm's financial condition deteriorates, its incentive to manage OCF will increase to lower its credit risk (i.e., the risk of defaulting on debt). Second, a firm's dependence on banks also affects the firm's incentive to manage OCF through interest payment reclassification. Operating cash flow adequacy of borrowing firms is of significant concern to banks because of its relation to credit risk. As firms rely more on banks, banks are more likely to scrutinize OCF, making their incentives to reclassify interest payments stronger for better OCF adequacy. Third, ownership structure may influence a firm's OCF reclassification behavior by influencing monitoring functions and incentives for reclassification. A firm's incentive to engage in classification shifting might be curbed (facilitated) by effective monitoring (agency costs associated with shareholders), and the incentive for reclassification is expected to vary depending on the type of shareholders.

To test the relationship between the aforementioned incentives and the classification shifting of interest payments, we generate the following hypothesis:

Hypothesis 1. A firm's incentives to shift interest payments in the statement of cash flows are significantly influenced by its financial health, bank dependence and ownership structure.

To gain further insights into classification shifting, we also examine the economic consequences of classification shifting. Specifically, we scrutinize whether investors may be able to recognize classification shifting permitted under IFRS. There is evidence that the market does not fully incorporate information from financial statements in stock prices ([Bernard and Thomas, 1989](#); [Sloan, 1996](#); [Alissa et al., 2013](#)). To the extent that investors fixate on OCF, we expect that investors would positively respond to unexpected OCF.

Alternatively, although managers opportunistically overstate OCF, investors may be able to recognize this opportunistic behavior and undo the overstatement of OCF for firm valuation ([Shivakumar, 2000](#)). The economic consequences of classification shifting pose an empirical question given these two competing arguments on the ability of market participants. Therefore, we generate the second hypothesis in the null form:

Hypothesis 2. No relationship exists between classification shifting in the statement of cash flows and earnings announcement returns.

3. Data and research design

3.1. Data

IFRS reporting became mandatory for Korean firms in 2011. Our initial sample begins with all of the listed Korean firms that adopted IFRS in 2011 and 2012. In other words, we use firms listed on the Korean stock markets (i.e., Korea Composite Stock Price Index (KOSPI) and Korean Securities Dealers Automated Quotations (KOSDAQ), which are comparable to the New York Stock Exchange and National Association of Securities Dealers Automated Quotation in the United States, respectively). We exclude financial institutions because they had different schedules for IFRS adoption.

We require firms to have accounting information and stock prices. We obtain accounting and returns data from KIS-Value and TS2000 databases, which are equivalent to a combined COMPUSTAT and CRSP in the United States. We hand-collect information about bank ownership from proxy statements and obtain private debt amounts from the footnotes of financial statements.

As shown in Table 1, our final sample consists of 3130 Korean firms after excluding firms without information about accounting variables and stock prices. We winsorize the top and bottom 1% of each independent and dependent variables to eliminate outlier effects. We hand-collect information about classification shifting for interest payments from annual reports. The number of observations differs for the analyses of market reactions due to missing values.

3.2. Research design

To examine the determinants of classification shifting, we use a probit regression model as follows⁶:

$$\begin{aligned} \text{Shifting} = & \beta_0 + \beta_1 \text{Altman } Z + \beta_2 \text{Interest cost} + \beta_3 \text{Bank} + \beta_4 \text{Private debt} + \beta_5 \text{Chaebol} \\ & + \beta_6 \text{Foreign} + \beta_7 \text{Block} + \beta_8 \text{Early} + \beta_9 \text{Cross} + \beta_{10} \text{TA} + \beta_{11} \text{ROA} + \beta_{12} \text{PB} \\ & + \beta_{13} \text{sd}(\text{Earnings}) + \epsilon \end{aligned} \quad (1)$$

Our dependent variable, *Shifting*, is an indicator variable, one if firms shift their interest payments from operating to financing cash flows, zero otherwise. The group with shifting equal to zero includes both firms that continue classifying interest payments as operating (as mandated under the old Korean GAAP) and firms that voluntarily adopt IFRS prior to the mandatory adoption but opt to still classify interest payments as operating.

As stated in Hypothesis 1, we focus on a firm's financial health, bank dependence and ownership structure as incentive variables that affect interest payment reclassification. For each incentive variable, we use proxies to execute our test.

First, we consider financial distress and the amount of interest payments as proxies for financial health. Financial distress, *Altman Z*, is measured as Altman (1968)'s financial distress score.⁷ We expect that financially distressed firms likely have stronger incentives to strategically reclassify interest payments to change lenders' perceptions, thereby lowering the cost of capital and/or obtaining additional funds. *Interest cost* is the amount of interest payments in the statement of cash flows divided by market capitalization at the end of year *t*. Ashbaugh-Skaife et al. (2006) suggest that interest cost is a proxy for a firm's default risk and is related to a firm's credit rating. Firms with larger amounts of interest payments may face stronger incentives for classification shifting because the effect of the reclassification on OCF is greater.

Second, we measure bank dependence using bank ownership and the amount of private debt, following prior research (Ongena and Smith, 2000). We use *Bank*, an indicator variable, one if banks hold

⁶ All of the regressions in this paper are estimated using standard errors adjusted for firm clustering.

⁷ Altman Z score is measured as $[1.2 \times (\text{Current asset} - \text{Current liability})/(\text{Total assets}) + 1.4 \times (\text{Retained earnings})/(\text{Total assets}) + 3.3 \times (\text{Earnings before interest cost and tax})/(\text{Total assets}) + 0.6 \times (\text{Market value of equity})/(\text{Book value of liability}) + 0.999 \times \text{Sales}/(\text{Total assets})]$. The lower Altman Z score, the more likely financially distressed.

Table 1

Sample selection. The sample comprises 3130 firms listed in the Korean stock markets. We initially start with 3248 firms excluding financial institutions. We exclude financial institutions due to the different schedule for the adoption of IFRS. Due to the missing control variables, we exclude 118 firms and each variable is winsorized at the 1st and 99th percentiles to eliminate outlier effects. We require that the sample firms have accounting information and returns, from KIS-Value and TS2000 database. Information on analysts is obtained from FnGuide.

	The number of observations
Firm year observations in 2011 and 2012 from KIS-value and TS2000 (excluding financial companies)	3248
Less observations with missing input and output variables to estimate control variables	(118)
Final sample for the probit regression	3130

more than 5% of total shares outstanding, zero otherwise to measure bank dependence. As banks own more shares of the client firm and lend more money to the firm, the client firm's dependence on banks increases, which in turn boost incentives for interest payment reclassification. We also use *Private debt*, defined as the amount of private debt reported in the footnote of the financial statement, to measure a firm's bank dependence.⁸

Finally, we measure ownership structure using *Chaebol* affiliation, foreign shareholder ownership, and blockholder ownership. *Chaebol* is defined as one if firms are affiliated with *Chaebols* as defined by the Korea Fair Trade Association (KFTA), zero otherwise. *Chaebols* are family-controlled conglomerates clustered around parent companies, which is a unique business structure in Korea (Lee and Gaur, 2013). These family firms account for more than half of market capitalization in the Korean stock market. Prior research suggests that family firms are a prevalent organizational form in the world and family ownership is associated with corporate decisions (Demsetz and Lehn, 1985; La Porta et al., 1999; Claessens et al., 2000; Anderson and Reeb, 2003).⁹ Prior research also indicates that *Chaebols* have weak corporate governance and low transparency between controlling shareholders and other shareholders (Bae et al., 2002a; Campbell and Keys, 2002; Joh, 2003; Young et al., 2008). Therefore, it is likely that *Chaebols* have strong incentives to reclassify interest payments to avoid financial distress related to debt financing.

In addition to *Chaebols*, we examine two types of shareholders, foreign shareholders and blockholders, who play significant roles in Korean firms. *Foreign* is an indicator variable, one if foreign shareholders hold more than 5% of total shares outstanding, zero otherwise. *Block* is an indicator variable, one if there exist shareholders who hold more than 5% of total shares outstanding, zero otherwise. We use a 5% cutoff for ownership variables following prior literature on block holdings (Dlugosz et al., 2006; Edmans and Manso, 2011). The financial regulator also specifies disclosure requirements for stakeholders who hold more than 5% of total shares. Even in *Chaebol* affiliated firms, both types of shareholders sometimes significantly influence business activities. To the extent that these shareholders perform effective monitoring roles, we expect a firm's opportunistic classification shifting to decrease. In sum, among the three ownership variables, we expect that *Chaebol* affiliation

⁸ Alternatively, one may argue that as firm-bank relationships become stronger, banks may rely less on public information such as the statement of cash flows, thus reducing the incentive of a firm to manipulate operating cash flows. Although prior research suggests that operating cash flows are important for the evaluation of credit risk (Billings and Morton, 2002), we cannot completely rule out this possibility and thus the findings of this study would be the *average* effect after considering this alternative explanation.

⁹ For the dominant shareholders of *Chaebols*, maintaining control over affiliated firms is of great concern and thus almost all *Chaebols* utilize circular equity investment to maintain their control over affiliated firms and prefer debt financing to avoid the dilution of their control. In the case of circular equity investment, equity financing dilutes the ownership of multiple firms that the dominant shareholder controls. For instance, Samsung Electronics holds 13.5% of Samsung SDI's share, and Samsung SDI holds 7.2% of Samsung C&T's share, and then Samsung C&T holds 4.0% of Samsung Electronics' share. When Samsung Electronics decides to raise equity financing, the financing dilutes not only the ownership of Samsung electronics, but also those of the other two firms. This dilution effect induces the tendency of *Chaebols* to avoid equity financing to protect their influence over the entire group.

will be positively associated with a firm's reclassification behavior, whereas foreign investors and blockholders will be negatively associated.

In addition, we include the following control variables.¹⁰ We include *Early*, an indicator variable, one if firms adopt IFRS before 2011, zero otherwise. Early adopter firms may exhibit more evidence of classification shifting in the statement of cash flows because they may have incentives to voluntarily adopt IFRS to take advantage of managerial discretion permitted under IFRS. Alternatively, they may have incentives to increase the transparency of reported numbers as Barth et al. (2008) indicate, suggesting a decrease in classification shifting for early adopters. We control *Cross*, an indicator variable, one if firms are cross-listed on both the U.S. and Korean stock markets, zero if firms are listed only on the Korean stock market, since a firm's cross-listing status may also influence its classification shifting behavior. Prior research provides evidence that cross-listed non-U.S. firms exhibit more evidence of opportunistic financial reporting (Lang et al., 2006), implying that cross-listed Korean firms may have greater incentives to boost OCF through classification shifting. On the other hand, as Bradshaw et al. (2004) suggest, cross-listed firms in the U.S. are likely to adopt accounting choices that are consistent with U.S. GAAP that mandates the classification of interest payments as operating cash flows, suggesting a decrease in the classification shifting tendency of a firm. *TA* is the natural logarithm of total assets. *ROA* is the return on assets, which is measured as earnings over total assets. *PB* is the market-to-book ratio. *sd(Earnings)* is the standard deviation of earnings over the past three years divided by the market value of equity at *t*. We include the natural logarithm of total assets to control for size effects; return on assets for firm performance; the market-to-book ratio for growth opportunities; and the standard deviation of earnings for uncertainty about earnings.

To examine the second hypothesis, we use a stock market reaction regression model, similar to Bhattacharya et al. (2003). The estimation model is represented as follows:

$$CAR = \beta_0 + \beta_1 \Delta OCF \times Shifting + \beta_2 Shifting + \beta_3 \Delta OCF + \beta_4 \Delta ACCR + \epsilon \quad (2)$$

where *CAR* is the cumulative abnormal returns around the earnings announcement date; ΔOCF is the change in OCF from year $t - 1$ to t , scaled by the market value of equity at the end of year t ; *Shifting*, is an indicator variable, one if firms shift their interest payments from operating to financing cash flows, zero otherwise; and $\Delta ACCR$ is accruals surprise measured as the change in accruals from year $t - 1$ to t , scaled by the market value of equity at the end of year t .

We compute abnormal returns using the market model. We calculate market-model parameters using days from -120 to -20 days relative to the earnings announcement date for each firm. We use the KOSPI value-weighted return as the market return. The daily abnormal returns are then accumulated to obtain the *CAR* values for various windows. In Eq. (2), the variable of main interest is $\Delta OCF \times Shifting$. A negative and significant coefficient of β_1 would imply that the stock market may be able to recognize the opportunistic classification shifting of a firm, whereas an insignificant coefficient would indicate that the stock market does not fully incorporate the implication of the shifting. By contrast, the positive and significant coefficient of β_1 implies that the stock market reacts to OCF news more strongly than it does to accrual news for interest payment shifters, suggesting that OCF news is more informative for interest payment shifters.

We further examine the stock market reaction conditional on determinant variables by adding three-way interaction terms to Eq. (2) as follows:

$$CAR = \beta_0 + \beta_1 \Delta OCF \times Shifting + \beta_2 Shifting + \beta_3 \Delta OCF + \beta_4 \Delta ACCR + \sum_{i=5}^n (\beta_i Determinants_i + \beta_{i,1} Determinants_i \times \Delta OCF \times Shifting) + \epsilon \quad (3)$$

Determinants in Eq. (3) represent determinant variables that are significant in the determinant regression, Eq. (1). The inclusion of three-way interaction terms allows us to investigate whether the market

¹⁰ Prior research also uses cash flow forecasts as another variable related to the classification shifting behavior of firms (Lee, 2012). Unlike analysts in the U.S., analysts in Korea do not provide cash flow forecasts. Thus, we exclude the existence of cash flow forecasts in the equation.

reaction to the interest payment shifting varies depending on the incentive of a firm to reclassify interest payments.

4. Empirical results

4.1. Descriptive statistics

To provide an example of classification shifting under IFRS, we present in [Appendix A](#) the statement of cash flows reported by STX Offshore and Shipbuilding, a conglomerate of industrial companies in the field of shipping and trade. As shown in [Appendix A](#), STX classifies an interest payment of 85 million dollars as cash flows from financing activities, whereas an interest receipt of 14 million dollars as cash flows from operating activities. STX would have changed the OCF from –108 million dollars to –193 million dollars without classification shifting. This example provides a snapshot of the importance of the treatment of interest payments in the statement of cash flows.

[Table 2](#) shows the descriptive statistics of the variables used for our analyses. Approximately 13.5% of our sample firms shift interest payments from operating to financing cash outflows. On average, a firm's interest payment is about 4% of its market capitalization, suggesting that the amount is economically significant. On average, banks hold more than 5% of total shares outstanding for 54.4% of the firms. 11.6% of firms are affiliated with *Chaebols*. Firms that have more than 5% of foreign and blockholder ownership are 13.6% and 26.4%, respectively. Approximately 3.7% of firms are early adopters. Only 1.3% of firms are cross-listed on both the U.S. and Korean stock markets. The mean (median) value of the logarithm of total assets is 18.93 (18.64), indicating that the size variable is not signifi-

Table 2

Descriptive statistics. This table reports descriptive statistics for the sample used. *Shifting* is an indicator variable, 1 if firms shift their interest payments from operating to financing cash flows, 0 otherwise. *Altman Z* is [Altman \(1968\)](#)'s financial distress score and a lower Altman Z score implies that a firm is more likely financially distressed. *Interest cost* is the amount of interest payments in the statement of cash flows divided by market cap at the end of *t*. *Bank* is an indicator variable, 1 if bank holds more than 5% of total shares outstanding, 0 otherwise. *Private debt* is amount of private debt scaled by the market value of equity at *t*. *Chaebol* is an indicator variable, 1 if firms are affiliated with *Chaebols* as defined by the Korea Fair Trade Association (KFTA), 0 otherwise. *Foreign* is an indicator variable, 1 if foreign shareholders hold more than 5% of total shares outstanding, 0 otherwise. *Block* is an indicator variable, 1 if there exist shareholders who hold more than 5% of total shares outstanding, 0 otherwise. *Early* is an indicator variable, 1 if firms adopt IFRS before 2011, 0 otherwise. *Cross* is an indicator variable, 1 if firms are listed on both the U.S. and Korean stock markets, 0 if firms are listed only on the Korean stock market. *TA* is the natural logarithm of total assets. *ROA* is the return on assets, which is measured as earnings over total assets. *PB* is the market-to-book ratio. *sd(Earnings)* is the standard deviation of earnings over the past three years divided by the market value of equity at *t*. *CAR (0, t)* is cumulative abnormal returns from the earnings announcement date to *t* days after the earnings announcement. $\Delta ACCR$ is the accruals surprise; and ΔOCF is the change in OCF from year *t* – 1 to *t*, scaled by the market value of equity at *t*.

	Mean	Std. dev.	Q1	Median	Q3
<i>Shifting</i>	0.1345	0.3412	0	0	0
<i>Altman Z</i>	3.9801	6.5020	1.6281	2.6413	4.2540
<i>Interest cost</i>	0.0423	0.1004	0.0019	0.0121	0.0404
<i>Bank</i>	0.5444	0.4981	0	1	1
<i>Private debt</i>	0.0837	0.3952	0	0	0
<i>Chaebol</i>	0.1157	0.3199	0	0	0
<i>Foreign</i>	0.1355	0.3423	0	0	0
<i>Block</i>	0.2642	0.4410	0	0	1
<i>Early</i>	0.0371	0.1889	0	0	0
<i>Cross</i>	0.0134	0.1151	0	0	0
<i>TA</i>	18.9250	1.4090	17.97	18.64	19.59
<i>ROA</i>	0.0190	0.1207	–0.0035	0.0338	0.0768
<i>PB</i>	1.3733	1.3129	0.6050	0.9650	1.6710
<i>sd(Earnings)</i>	0.1362	0.4476	0.0177	0.0434	0.0997
<i>CAR (0, 4)</i>	0.0130	0.0665	–0.0183	0.0065	0.0365
<i>CAR (0, 5)</i>	0.0169	0.0811	–0.0234	0.0081	0.0462
$\Delta ACCR$	–0.0500	0.5232	–0.1262	–0.0113	0.0702
ΔOCF	0.0193	0.3680	–0.0732	0.0047	0.0902

cantly skewed. The mean (median) return on asset and market-to-book ratio are approximately 0.02 (0.03) and 1.37 (0.97), respectively. The abnormal returns and change in OCF are positive, whereas earnings surprise is negative, on average.

Table 3 reports the Pearson correlations between variables. The shifting choice of a firm is positively and significantly correlated with financial distress (low Altman Z), the amount of interest payments, bank ownership, the amount of private debt, the affiliation with *Chaebols*, foreign investors, early adoption of IFRS, size and the standard deviation of earnings. On the other hand, it is negatively and significantly correlated with the market-to-book ratio. Correlations are generally low between variables, mitigating our concern about multicollinearity. In addition, we examine the variance inflation factors (VIFs) for the variables in the regression models to formally test whether multicollinearity problems significantly affect our results. We find that the largest VIF value is less than 3 for explanatory variables except size, indicating that multicollinearity problems do not affect our results. In our unreported analysis, we find similar inferences in the Spearman correlations.

To gauge the economic significance of classification shifting, we examine the cash flow characteristics of our sample. Table 4 presents the results. Cash flows from operating activities account for 4.03% of the total assets. Cash flows from financing activities are negative, indicating that net cash outflows occur with regard to financing activities. Cash flows from investing activities are, on average, 2.25% of the total assets. Interest payments moved to financing cash flows (FinCF) from operating cash flows (OCF) are, on average, 7.22% of the total assets. The average firm shifting interest payments from operating to financing activities reports approximately 14,598 million Korean won (13.2 million dollars) as interest payments.

4.2. Univariate analyses

In Table 5, we compare the firm characteristics between classification shifters and non-shifters. The results of the *t*-test (Wilcoxon test) show that the mean (median) values of Altman Z score, interest cost, bank ownership, the amount of private debt, *Chaebol* affiliation, foreign shareholder ownership, early adopters of IFRS, size, market-to-book ratio, and the standard deviation of earnings are significantly different between shifting and non-shifting firms. Classification shifters are financially distressed, exhibit high interest payments, have more bank ownership, use more private debt, are more likely *Chaebols*, and have more foreign shareholders. These results provide preliminary evidence that systematic differences in firm characteristics exist between shifting and non-shifting firms.

4.3. Determinants of classification shifting – probit regression

Table 6 presents the results of the probit regression in Eq. (1) that examines the determinants of interest payment shifting. The dependent variable, *Shifting*, is an indicator variable that takes a value of one if a firm chooses to shift its interest payments from operating to financing cash flows, and zero otherwise.¹¹ We find that the coefficient on Altman (1968)'s financial distress score is negative and significant, suggesting that financially distressed firms have more incentives to reclassify interest payments to financing activities to give capital providers a positive impression or to avoid violation of debt covenants. The negative association between Altman's Z score and shifting is consistent with the result of Lee (2012) that financially distressed firms engage in opportunistic behavior with regard to OCF. The coefficient on *Interest cost* is positive and significant, indicating that a firm's incentive to manage OCF increases as the amount of interest payments increases.

The coefficient on *Bank* is significant and positive, suggesting that economic bonding to banks increases the likelihood to manage OCF through interest payment reclassification. The coefficient on *Chaebol* is significantly positive, suggesting that *Chaebol* affiliated firms are more likely to shift their interest payments from operating to financing cash flows. This result is consistent with our expectation that *Chaebols* prefer debt financing and have incentives to manage OCF to keep their influence over affiliated firms under the circular equity investment structure. This finding is also consistent with

¹¹ We find that only 20 out of 3130 firms have changed their classification of interest payments between 2011 and 2012, indicating that the choice of classification is sticky across time. Therefore, we do not perform a change analysis.

Table 3

Pearson correlation matrix. This table reports Pearson correlations for the sample used. *Shifting* is an indicator variable, 1 if firms shift their interest payments from operating to financing cash flows, 0 otherwise. *Altman Z* is Altman (1968)'s financial distress score and a lower Altman Z score implies that a firm is more likely financially distressed. *Interest cost* is the amount of interest payments in the statement of cash flows divided by market cap at the end of *t*. *Bank* is an indicator variable, 1 if a bank holds more than 5% of total shares outstanding, 0 otherwise. *Private debt* is the amount of private debt scaled by the market value of equity at *t*. *Chaebol* is an indicator variable, 1 if firms are affiliated with *Chaebols* as defined by the Korea Fair Trade Association (KFTA), 0 otherwise. *Foreign* is an indicator variable, 1 if foreign shareholders hold more than 5% of total shares outstanding, 0 otherwise. *Block* is an indicator variable, 1 if there exist shareholders who hold more than 5% of total shares outstanding, 0 otherwise. *Early* is an indicator variable, 1 if firms adopted IFRS before 2011, 0 otherwise. *Cross* is an indicator variable, 1 if firms are listed on both the U.S. and Korean stock markets, 0 if firms are listed only on the Korean stock market. *TA* is the natural logarithm of total assets. *ROA* is the return on assets, which is measured as earnings over total assets. *PB* is the market-to-book ratio. *sd(Earnings)* is the standard deviation of earnings over the past three years divided by the market value of equity at *t*. The highlighted coefficients are significant at least at the 5% level.

	Shift	Altman Z	Interest cost	Bank	Private debt	Chaebol	Foreign	Block	Early	Cross	TA	ROA	PB
<i>Altman Z</i>	-0.0637												
<i>Interest cost</i>	0.1176	-0.2001											
<i>Bank</i>	0.0711	-0.0608	0.0562										
<i>Private debt</i>	0.0505	-0.0837		0.3107									
<i>Chaebol</i>	0.0712	-0.0509	0.0697	0.2105	0.2507								
<i>Foreign</i>	0.0410	0.0620	-0.0126	0.0716	0.0596	0.1663							
<i>Block</i>	0.0144	0.0193	-0.0052	0.1248	-0.0117	0.0461	0.4636						
<i>Early</i>	0.0416	0.0004	0.0150	0.0504	0.0110	0.1512	0.0607	0.0205					
<i>Cross</i>	-0.0053	-0.0122	-0.0276	0.0621	0.0617	0.2357	0.1080	0.0435	0.1535				
<i>TA</i>	0.1016	-0.0707	0.1754	0.2552	0.2777	0.5735	0.3224	0.1116	0.1210	0.3416			
<i>ROA</i>	-0.0012	0.2275	-0.3405	-0.0429	-0.0953	0.0124	0.1178	0.0403	0.0145	0.0433	0.1487		
<i>PB</i>	-0.0620	0.2811	-0.1966	-0.0236	-0.1031	0.0239	0.0280	0.0200	0.0191	0.0038	-0.1022	0.0002	
<i>sd(Earnings)</i>	0.0664	-0.1403	0.7302	0.0438	0.1659	0.0230	-0.0130	0.0090	0.0082	-0.0240	0.0277	-0.4187	-0.1064

Table 4

Cash flow characteristics. This table reports descriptive statistics of cash flow characteristics. *OCF*, *FinCF*, *InvCF* represents cash flows from operating, financing, and investing activities, respectively. *OCF/Total assets* is the *OCF* divided by total assets. *FCF/total assets* is *FCF* divided by total assets. *ICF/total assets* is *ICF* divided by total assets. *(Interest payments moved to FCF from OCF)/Total assets* is interest cost moved to *FCF* from *OCF* divided by total assets. *Interest payments moved to FCF from OCF in Korean won (US dollars)* is the actual amount of interest paid moved to *FCF* from *OCF* in millions.

Variables	Mean	Std. dev.	Q1	Median	Q3	N
<i>OCF/Total assets</i>	0.0403	0.0895	-0.0064	0.0397	0.0902	3130
<i>FinCF/Total assets</i>	-0.0622	0.1110	-0.109	-0.0510	-0.0110	3130
<i>InvCF/Total assets</i>	0.0225	0.1150	-0.0275	0.0032	0.0639	3130
<i>(Interest payments moved to FinCF from OCF)/Total assets</i>	0.0722	0.1540	0.0050	0.0198	0.0669	421
<i>Interest payments moved to FinCF from OCF in million Korean won (US dollars)</i>	14,509 (13.19)	46,436 (42.21)	7433 (0.376)	1505 (1.368)	414 (6.758)	421

Table 5

Differences in Firm Characteristics between Shifters and Non-Shifters. This table reports mean and median differences in firm characteristics between shifters and non-shifters. The numbers in parentheses denote the medians and *p*-values of the median test. We partition the sample firms into those who shift the interest payments from *OCF* to *FCF* (Shifters) and those who do not shift (Non-Shifters). *Altman Z* is *Altman (1968)*'s financial distress score and a lower *Altman Z* score implies that a firm is more likely financially distressed. *Interest cost* is the amount of interest payments in the statement of cash flows divided by market cap at the end of *t*. *Bank* is an indicator variable, 1 if a bank holds more than 5% of total shares outstanding, 0 otherwise. *Private debt* is the amount of private debt scaled by the market value of equity at *t*. *Chaebol* is an indicator variable, 1 if firms are affiliated with *Chaebols* as defined by Korea Fair Trade Association (KFTA), 0 otherwise. *Foreign* is an indicator variable, 1 if foreign shareholders hold more than 5% of total shares outstanding, 0 otherwise. *Block* is an indicator variable, 1 if there exist shareholders who hold more than 5% of total shares outstanding, 0 otherwise. *Early* is an indicator variable, 1 if firms adopted IFRS before 2011, 0 otherwise. *Cross* is an indicator variable, 1 if firms are listed on both the U.S. and Korean stock markets, 0 if firms are listed only on the Korean stock market. *TA* is the natural logarithm of total assets. *ROA* is the return on assets, which is measured as earnings over total assets. *PB* is the market-to-book ratio. *sd(Earnings)* is the standard deviation of earnings over the past three years divided by market value of equity at *t*. The symbols *** and ** denote significance at 1% and 5%, respectively, for two-tailed tests.

	Shifter N = 421	Non-Shifter N = 2709	Mean test: <i>P</i> -value (Median test: <i>P</i> -value)
<i>Altman Z</i>	2.9298 (2.2906)	4.1434 (2.7152)	0.00*** (0.00***)
<i>Interest cost</i>	0.0722 (0.01982)	0.0377 (0.0112)	0.00*** (0.00***)
<i>Bank</i>	0.6342 (0.0000)	0.5305 (0.0000)	0.00*** (0.00***)
<i>Private debt</i>	0.1343 (0.0000)	0.0759 (0.0000)	0.00*** (0.00***)
<i>Chaebol</i>	0.1734 (0.0000)	0.1063 (0.0000)	0.00*** (0.00***)
<i>Foreign</i>	0.1710 (0.0000)	0.1298 (0.0000)	0.02** (0.02***)
<i>Block</i>	0.2803 (0.0000)	0.2615 (0.0000)	0.42 (0.42)
<i>Early</i>	0.0570 (0.0000)	0.0340 (0.0000)	0.02** (0.02**)
<i>Cross</i>	0.0119 (0.0000)	0.0136 (0.0000)	0.77 (0.77)
<i>TA</i>	19.2880 (18.9222)	18.8686 (18.5896)	0.00*** (0.00***)
<i>ROA</i>	0.0187 (0.0307)	0.0191 (0.0345)	0.95 (0.76)
<i>PB</i>	1.1667 (0.8693)	1.4061 (0.9746)	0.00*** (0.00**)
<i>sd(Earnings)</i>	0.2115 (0.0427)	0.1242 (0.0434)	0.00*** (0.95)

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Table 6

Determinants of classification shifting – probit regression. This table reports the results of the probit regression of interest payment shifting on firm characteristics. The sample comprises 3130 Korean listed firms. *Shifting* is an indicator variable, 1 if firms shifted their interest payments from operating to financing cash flows, 0 otherwise. *Altman Z* is Altman (1968)'s financial distress score and a lower Altman Z score implies that a firm is more likely financially distressed. *Interest cost* is the amount of interest payments in the statement of cash flows divided by market cap at the end of *t*. *Bank* is an indicator variable, 1 if a bank holds more than 5% of total shares outstanding, 0 otherwise. *Private debt* is the amount of private debt scaled by the market value of equity at *t*. *Chaebol* is an indicator variable, 1 if firms are affiliated with *Chaebols* as defined by the Korea Fair Trade Association (KFTA), 0 otherwise. *Foreign* is an indicator variable, 1 if foreign shareholders hold more than 5% of total shares outstanding, 0 otherwise. *Block* is an indicator variable, 1 if there exist shareholders who hold more than 5% of total shares outstanding, 0 otherwise. *Early* is an indicator variable, 1 if firms adopted IFRS before 2011, 0 otherwise. *Cross* is an indicator variable, 1 if firms are listed on both the U.S. and Korean stock markets, 0 if firms are listed only on the Korean stock market. *TA* is the natural logarithm of total assets. *ROA* is the return on assets, which is measured as earnings over total assets. *PB* is the market-to-book ratio. *sd(Earnings)* is the standard deviation of earnings over the past three years divided by the market value of the equity at *t*. The symbols ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively, for two-tailed tests. The numbers in parentheses denote *p*-values from robust standard error regression for two-tailed tests.

Dependent variable: <i>Shifting</i> = 1	(1) Probit	(2) Marginal
<i>Intercept</i>	−0.1299 (0.85)	
<i>Altman Z</i>	−0.0324*** (0.01)	−0.0067*** (0.01)
<i>Interest cost</i>	1.2791*** (0.00)	0.2626*** (0.00)
<i>Bank</i>	0.1328** (0.03)	0.0273** (0.03)
<i>Private debt</i>	−0.0024 (0.97)	−0.0005 (0.97)
<i>Chaebol</i>	0.1822* (0.09)	0.0374* (0.09)
<i>Foreign</i>	0.1537 (0.11)	0.0316 (0.11)
<i>Block</i>	−0.0493 (0.51)	−0.0101 (0.51)
<i>Early</i>	0.2766** (0.05)	0.0568** (0.05)
<i>Cross</i>	−0.4505* (0.10)	−0.0925* (0.10)
<i>TA</i>	0.0223 (0.45)	0.0046 (0.45)
<i>ROA</i>	0.8489** (0.05)	0.1743** (0.05)
<i>PB</i>	−0.0199 (0.52)	−0.0041 (0.52)
<i>sd(Earnings)</i>	−0.2523 (0.30)	−0.0518 (0.30)
Year and industry fixed effect	Yes	
Pseudo- <i>R</i> ²	5.36%	
<i>N</i>	3130	

the view that *Chaebol* affiliated firms have incentives to manage OCF because of agency problems (Joh, 2003; Young et al., 2008). The other two ownership variables, *Foreign* and *Block*, are insignificant.

The coefficient on *Early* is significantly positive, suggesting that early adopters are likely to voluntarily adopt IFRS to utilize managerial discretion permitted under IFRS. However, the coefficient on *Cross* is significantly negative, indicating that firms cross-listed in the U.S. are less likely to engage in classification shifting because they tend to adopt accounting choices consistent with U.S. GAAP which allows no discretion in the classification of interest payments.

The results from the marginal effect regression¹² suggest that one unit change in *Interest cost* increases the probability of shifting by 26.26%, implying that the amount of interest payments is an

¹² The marginal effect in the probit regression shows the contribution of each firm characteristic to the probability of the shifting and is estimated as $\partial Pr(\text{Shifting} = 1|X)/\partial x_i$.

Table 7

Regression analysis of cumulative abnormal returns. This table reports the results of the ordinary least square regression of cumulative abnormal returns on interest payment shifting and firm characteristics. $CAR(0, t)$ is cumulative abnormal returns from earnings announcement date to t days after the earnings announcement. $\Delta OCF \times Shifting$ is an interaction term between ΔOCF and $Shifting$. $Shifting$ is an indicator variable, 1 if firms shift their interest payments from operating to financing cash flows, 0 otherwise. $\Delta ACCR$ is accruals surprise; and ΔOCF is the change in OCF from year $t - 1$ to t , scaled by the market value of equity at t . The symbols *** and ** denote significance at 1% and 5%, respectively, for two-tailed tests. The numbers in parentheses denote p -values from robust standard error regression for two-tailed tests.

	(1) Dependent variable CAR (0, 4)	(2) Dependent variable CAR (0, 5)	(3) Dependent variable CAR (0, 4)	(4) Dependent variable CAR (0, 5)
<i>Intercept</i>	0.0096*** (0.00)	0.0153*** (0.00)	0.0087*** (0.00)	0.0136*** (0.00)
$\Delta OCF \times Shifting$			-0.0071*** (0.01)	-0.0113*** (0.00)
<i>Shifting</i>			-0.0006 (0.77)	-0.0013 (0.51)
ΔOCF	-0.0010 (0.93)	0.0113 (0.39)	0.0018 (0.47)	0.0061* (0.07)
$\Delta ACCR$	0.0179** (0.02)	0.0271*** (0.00)	0.0084*** (0.01)	0.0104*** (0.00)
Industry fixed effect	Yes	Yes	Yes	Yes
Year fixed effect	Yes	Yes	Yes	Yes
<i>N</i>	2974	2974	2974	2974
Adjusted R-squared	0.24%	0.26%	0.58%	0.61%

important factor for a classification shifting decision. Bank dependence also plays a role in the shifting decision. The probability of shifting for firms with more than 5% bank ownership is 2.73% higher than that for other firms. The probability of shifting for *Chaebol* affiliated firms is 3.74% higher than that for non-*Chaebol* affiliated firms.

We further check the validity of our findings by eliminating other discretionary items in the statement of cash flows. Besides interest payments, IFRS (IAS 7.31) allows firms to classify the interest received, dividends received, and dividends paid as either operating or financing activities. Although the interest payment is of great concern to firm managers, it is plausible that other discretionary items may influence a firm's incentive to manage OCF. Therefore, we perform analyses to rule out this possibility. We find that out of 3130 total observations, only 70 observations differently classify these three items from other firms, implying that these items have little variation in the classification.¹³ We re-examine Eq. (1) without these 70 observations. The results are unaltered, suggesting that our findings are not influenced by the classification choice of the other discretionary items.

4.4. Economic consequences of classification shifting

Turning to the economic consequences of classification shifting, we examine the reaction of investors to classification shifting. The key variable of interest is the interaction term between cash flow surprises and the dummy for classification shifting. The negative coefficient on the interaction term suggests that firms experience lower returns for the same cash flow surprises when they engage in classification shifting of interest payments.

¹³ Specifically, 8 out of 3130 total observations classify interest income as financing cash flows, whereas all other firms classify it as operating activities. 5 out of total 3130 observations classify dividends received as financing cash flows, whereas all other firms classify it as operating activities. 59 out of 3130 total observations classify dividends paid as operating activities, whereas all other firms classify it as financing activities. Two firms are overlapped, resulting in overall 70 out of 3130 observations that differently classify these other discretionary items.

Table 7 reports the results for the market response to classification shifting in Eq. (2). Specifically, columns (3) and (4) report the result of testing Hypothesis 2 using CAR (0, 4) and CAR (0, 5), respectively.¹⁴ We find that the coefficient on $\Delta OCF \times Shifting$ is negative and statistically significant, suggesting that investors tend to discriminate between shifting and non-shifting firms. In other words, investors appear to recognize that the statement of cash flows with classification shifting does not reflect the economic reality of firms, negatively reacting to this shifting.¹⁵ One unit change in cash flow from operation decreases the cumulative stock return by about 0.71% in the (0, 4) window and 1.13% in the (0, 5) window. We also find that the coefficient on accruals news is positive and significant, indicating that the market views positive accruals change as good news.

The coefficient and significance level of ΔOCF is relatively smaller than that of $\Delta ACCR$, suggesting that the market weakly reacts to the change in operating cash flows. One explanation for the small coefficient on ΔOCF is that investors factor the lack of comparability and overstatement of cash flows in stock prices for the early adoption period of IFRS. After the adoption of IFRS, cash flows from operations for Korean firms increase, on average, by 12% (Kim, 2011), bringing about public concern about the overstatement of OCF. The financial press has also raised concerns about the overstatement of OCF and the lack of comparability regarding the amount of cash flows reported in the statement of cash flows after the adoption of IFRS (The Korea Economic Daily, 2009, 2010; The Financial News, 2011).^{16,17}

We find that the overall market response to $\Delta OCF \times Shifting$ is negative in Table 7. To gain further insights into the market response to classification shifting, we focus on the significant determinants from Table 6 as our partitioning variables (i.e., Altman's Z score, the amount of interest payments, bank ownership and *Chaebol*). Specifically, we include the three-way interaction term, *Determinants* $\times \Delta OCF \times Shifting$, in the CAR regression.¹⁸

Table 8 reports the results. The coefficient on $\Delta OCF \times Shifting$ in Table 8 is positive but statistically insignificant. We find that the three-way interaction term is negative and significant when a firm is highly financially distressed (low Altman Z) and is affiliated with *Chaebols*, suggesting that the market reaction to cash flow surprise for firms that engage in classification shifting is more negative when the firm is in financial distress or *Chaebol* affiliated. For example, the coefficient on *Chaebol* $\times \Delta OCF \times Shifting$ is -0.0147 indicating that the market response to affiliation with a *Chaebol* is more negative than that for firms that are not affiliated with a *Chaebol*. One interpretation of the finding is that the reclassification by financially distressed firms is perceived as opportunistic because the financial health of a firm in a bank-centered industry is of great concern to the market

¹⁴ We also compute the abnormal returns over CAR (0, 1), (0, 2) and (0, 3) and find that inferences are similar although the significance is reduced.

¹⁵ Not all classification shifting activities are opportunistic. Firms may have good intentions in shifting the classification of interest payments from operating to financing activities. However, we cannot discriminate between "good" and "bad" classification shifting in this study because we cannot directly observe the intentions of firm managers. Therefore, the negative market reaction to classification shifting means that information users on average view the shifting of interest payments from operating to financing cash outflows as an opportunistic behavior and vice versa.

¹⁶ We also examine the market reaction to the changes in accruals and cash flows for the pre-IFRS period (2005–2009). Unlike the post-IFRS period, we find that in the pre-IFRS period, both the coefficients on accruals and cash flow surprises are positively significant and the coefficient on the change of cash flows is higher than that on the change of accruals. Specifically, before IFRS adoption, the coefficients on ΔOCF for CAR (0, 4) and CAR (0, 5) are 0.0254 and 0.0276 respectively, and are significant at 5% level. However, after IFRS adoption, the coefficients on ΔOCF are -0.0010 and 0.0113 respectively, and become insignificant. On the other hand, the coefficients on $\Delta Accruals$ are significant in both the pre and post-IFRS period. This evidence is consistent with our assertion that investors rely less on cash flows in the post-IFRS period in Korea perhaps due to lack of comparability regarding the amount of cash flows reported in the statement of cash flows.

¹⁷ Prior evidence on the market reaction to accounting and cash flow information in the Korean stock market is mixed. Certain studies show stronger market reaction to accounting information while others demonstrate stronger market reaction to cash flow information, possibly due to the different definition of the disclosure date (Cheon and Lee, 2004). Moreover, there is little evidence on the market reaction to cash flow information in the Korean stock market for the post-IFRS period.

¹⁸ We define Altman's Z dummy as one if Altman Z is below the median and zero otherwise, the interest cost dummy as one if the interest cost is above the median and zero otherwise, the bank dummy as one if the bank ownership is greater than 5% and zero otherwise, and the *Chaebol* dummy as one if firms are affiliated with *Chaebols* and zero otherwise.

Table 8

Regression analysis of cumulative abnormal returns with three-way interaction. This table reports the results of the ordinary least square regression of cumulative abnormal returns on interest payment shifting and firm characteristics. $CAR(0, t)$ is cumulative abnormal returns from earnings announcement date to t days after the earnings announcement. $\Delta OCF \times Shifting$ is an interaction term between ΔOCF and $Shifting$. $Shifting$ is an indicator variable, 1 if firms shifted their interest payments from operating to financing cash flows, 0 otherwise. $\Delta ACCR$ is accruals surprise; and ΔOCF is the change in OCF from year $t - 1$ to t , scaled by the market value of equity at t . Alt is an indicator variable, 1 if Altman Z is below the median, 0 otherwise. IC is an indicator variable, 1 if interest cost is above the median, 0 otherwise. $Bank$ is an indicator variable, 1 if bank ownership is greater than 5%, 0 otherwise. $Chaebol$ is an indicator variable, 1 if firms are affiliated with *Chaebols* as defined by the Korea Fair Trade Association (KFTA), 0 otherwise. The symbols ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively, for two-tailed tests. The numbers in parentheses denote p -values from robust standard error regression for two-tailed tests.

	(1) Dependent variable CAR (0, 4)	(2) Dependent variable CAR (0, 5)
<i>Intercept</i>	0.0151*** (0.00)	0.0190*** (0.00)
$\Delta OCF \times Shifting$	0.0435 (0.11)	0.0329 (0.12)
<i>Shifting</i>	0.0010 (0.61)	-0.0010 (0.60)
ΔOCF	-0.0002 (0.96)	0.0043* (0.10)
$\Delta ACCR$	0.0082** (0.04)	0.0095*** (0.00)
<i>Alt</i>	-0.0020 (0.49)	-0.0014 (0.56)
$Alt \times \Delta OCF \times Shifting$	-0.0910*** (0.00)	-0.0868*** (0.00)
<i>IC</i>	-0.0040 (0.31)	-0.0046 (0.13)
$IC \times \Delta OCF \times Shifting$	0.0449 (0.12)	0.0520** (0.05)
<i>Bank</i>	-0.0021 (0.25)	-0.0019 (0.27)
$Bank \times \Delta OCF \times Shifting$	-0.0117 (0.23)	-0.0124*** (0.01)
<i>Chaebol</i>	-0.0063** (0.03)	-0.0060* (0.07)
$Chaebol \times \Delta OCF \times Shifting$	-0.0147** (0.05)	-0.0107*** (0.03)
Industry fixed effect	Yes	Yes
Year fixed effect	Yes	Yes
<i>N</i>	2974	2974
Adjusted <i>R</i> -squared	0.97%	1.02%

due to its relation to credit risk, and thus investors generally have a negative impression on the classification shifting of financially distressed firms. This result is consistent with the notion that investors are generally concerned about the potential private rent-seeking behavior of *Chaebols* with respect to separation between the control right and cash flow right. Therefore, the reclassification of interest payments by *Chaebol* affiliated firms is likely perceived as opportunistic by stock market participants. The three-way interaction term for the bank variable is negatively significant in $CAR(0, 5)$, suggesting that the market reaction to cash flow surprise for shifting firms with more than 5% bank ownership is more negative than that for other firms. The coefficient on the three-way

interaction for interest costs is positive, implying that the market reaction to cash flow surprise for shifting firms with large interest costs as opportunistic is more positive.

Overall, the results from the stock return analysis suggest that the effect of the shifting is significant but the market reacts differently to interest payment reclassification across firms.¹⁹ The results described in the analyses of the three-way interaction are largely consistent with the notion that the economic consequences of the shifting vary depending on a firm's incentives for interest payment reclassification.²⁰

5. Conclusion

Using a unique setting in which firms switch from local GAAP to IFRS, we investigate whether managers have incentives to inflate OCF through the flexibility of IFRS. In particular, we focus on classification shifting in interest payments. Whereas firms are required to classify interest payments as cash outflows from operating activities under the old GAAP in Korea, the mandatory adoption of IFRS in 2011 allows managers to shift the classification of interest payments from operating to financing activities. Considering that OCF is of great concern to various interested parties such as investors, we expect that firm managers have strong incentives to report a high level of OCF to give a positive perception to interested parties.

As expected, we provide evidence that approximately 13.5% of our sample firms shift interest payments from operating to financing cash flows and these firms increase OCF by, on average, 13.2 million dollars through classification shifting. Considering the distinctive characteristics of the Korean economy such as bank-centered and *Chaebol* affiliations, we focus on three groups of incentive variables that affect a firm's classification shifting behavior of interest payments: financial health, bank dependence, and ownership structure. We find that financially distressed firms, firms with high interest payments, firms with more than 5% bank ownership, and *Chaebol* affiliated firms tend to shift their interest payments from operating to financing cash flows. We also document that the market negatively reacts to classification shifting, which is consistent with the notion that market participants may be able to recognize classification shifting and incorporate this behavior in their investment decisions.

This study provides initial evidence that classification shifting behavior exists in the statement of cash flows under the IFRS regime, consistent with the view that greater flexibility in reporting OCF can limit or decrease the comparability of the statement of cash flows. The findings of this study also provide empirical evidence on the determinants and economic consequences of classification shifting in the cash flow statement, thus suggesting meaningful implications to information users and policy makers.

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¹⁹ One might ask why managers engage in opportunistic classification shifting given the negative market reaction to classification shifting. Shivakumar (2000) posits that firms engage in earnings management even if investors undo its effects at offering announcements because earnings management by issuers and the resulting discounting by investors are a unique Nash equilibrium in a prisoner's dilemma game between firms and investors. In the same vein, a firm's classification shifting is likely the firm's rational response to an anticipated discount at the announcement of cash flows.

²⁰ Our results should be interpreted with caution since we are unable to observe managerial intent and investors' perception, and unexpected OCF is likely to be measured with noise.

Appendix A. An example of statement of cash flows under IFRSSTX Offshore and ShipbuildingFrom Jan 1st 2011 to 31st Dec 2011

(Unit: \$1,000)

	Fiscal year 2011
Cash Flows from Operating Activities	(108,220)
Cash created(used) by operations	(141,374)
Interest receipt	13,952
Dividends receipt	20,228
Corporate tax payment	(1,026)
Cash Flows from Investing Activities	(311,014)
Decrease in short-term financial assets	68,632
Decrease in long-term financial assets	304
Decrease in accounts receivable	12,243
Selling tangible asset	1,140
Selling intangible asset	95
Increase in short-term financial assets	(51,888)
Increase in long-term financial assets	(39,122)
Increase in accounts receivable	(16,684)
Acquisition of shares of subordinate firm	(43,381)
Acquisition of shares of related firm	(166,838)
Acquisition of investment real estates	(692)
Acquisition of tangible asset	(61,531)
Acquisition of intangible asset	(3,792)
Decrease in cash or cash equivalent due to physical division	(9,500)
Cash Flows from Financing Activities	312,651
Proceeds from short-term borrowings	219,780
Proceeds from long-term borrowings	64,704
Proceeds from issuance of ordinary shares	169,093
Proceeds from issuance of debt	29,970
Repayments of short-term borrowings	
Repayments of long-term debt	(60,028)
Repayments of long-term borrowings	(3,309)
Repurchases of ordinary shares	(9,926)
Interest payment	(85,275)
Dividends to shareholders	(12,361)
Decrease in cash or cash equivalent	(106,583)
Year-beginning cash or cash equivalent	194,906
Effect from currency exchange rate change	62
Year-end cash or cash equivalent	88,385

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