

Elizabeth A. Gordon, Elaine Henry, Bjorn N. Jorgensen and Cheryl L. Linthicum

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**Article (Published version)
(Refereed)**

Original citation:

Gordon, Elizabeth A., Henry, Elaine, Jorgensen, Bjorn N. and Linthicum, Cheryl L. (2017) *Flexibility in cash-flow classification under IFRS: determinants and consequences*. *Review of Accounting Studies* . pp. 1-34. ISSN 1380-6653

DOI: [10.1007/s11142-017-9387-1](https://doi.org/10.1007/s11142-017-9387-1)

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Flexibility in cash-flow classification under IFRS: determinants and consequences

Elizabeth A. Gordon¹ · Elaine Henry² ·
Bjorn N. Jorgensen³ · Cheryl L. Linthicum⁴

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Abstract International Financial Reporting Standards (IFRS) allow managers flexibility in classifying interest paid, interest received, and dividends received within operating, investing, or financing activities within the statement of cash flows. In contrast, U.S. Generally Accepted Accounting Principles (GAAP) requires these items to be classified as operating cash flows (OCF). Studying IFRS-reporting firms in 13 European countries, we document firms' cash-flow classification choices vary, with about 76, 60, and 57% of our sample classifying interest paid, interest received, and dividends received, respectively, in OCF. Reported OCF under IFRS tends to exceed what would be reported under U.S. GAAP. We find the main determinants of OCF-enhancing classification choices are capital market incentives and other firm characteristics, including greater likelihood of financial distress, higher leverage, and accessing equity markets more frequently. In analyzing the consequences of reporting flexibility, we find some evidence that the market's assessment of the persistence of

✉ Bjorn N. Jorgensen
b.n.jorgensen@lse.ac.uk

Elizabeth A. Gordon
egordon@temple.edu

Elaine Henry
ehenry1@stevens.edu

Cheryl L. Linthicum
cheryl.linthicum@utsa.edu

¹ Fox School of Business and Management, Temple University, 453 Alter Hall, 1801 Liacouras Walk, Philadelphia, PA 19122, USA

² School of Business, Stevens Institute of Technology, Hoboken, NJ 07030, USA

³ London School of Economics and Political Science, WC2A 2AE, London, UK

⁴ College of Business, University of Texas at San Antonio, San Antonio, TX 78249, USA

operating cash flows and accruals varies with the firm's classification choices and the results of certain OCF prediction models are sensitive to classification choices.

Keywords Statement of cash flows · Classification shifting · IFRS · Operating cash flows

JEL Classification M41

1 Introduction

We examine the determinants and consequences of comparative flexibility in classification choices within the statement of cash flows. International Financial Reporting Standards (IFRS) are perceived to allow managers more flexibility than generally accepted accounting principles in the United States (U.S. GAAP). This increased flexibility is apparent with regard to classifications within the statement of cash flows. U.S. GAAP requires that firms classify interest paid, interest received, and dividends received as operating cash flows. In contrast, IFRS allows firms the flexibility to report these items as operating cash flows (OCF) or as investing or financing. We describe variation in firms' cash-flow classification choices under IFRS, identify capital market incentives and firm reporting environment characteristics associated with these choices, and document consequences of classification flexibility.

Cash flow, and particularly OCF, is well established as a basis for business valuation (e.g., Damodaran 2006; Imam et al. 2008),¹ contracting (e.g., Dichev and Skinner 2002; Mulford and Comiskey 2005), and financial analysis (e.g., Estridge and Lougee 2007). Although an extensive literature examines classification shifting within the income statement and the balance sheet (Engel et al. 1999; Marquardt and Wiedman 2005; McVay 2006; Bartov and Mohanram 2014), less attention has been given to classification variations within the statement of cash flows (Lee 2012) and classification restatements (Hollie et al. 2011). IFRS reporting provides a setting where the accounting standards provide firms flexibility in classification choices within the statement of cash flows.

The effect of flexibility in cash-flow classification and its consequences matter because both the International Accounting Standards Board (IASB) and Financial Accounting Standards Board (FASB) share the objective that financial information should enable financial statement users to better predict future cash

¹ Imam et al. (2008) present evidence that discounted cash flow models and price earnings multiples are the valuation models most preferred by analysts. Liu et al. (2007, 56), who present evidence that earnings multiples dominate cash flow multiples in predicting share price, nonetheless note that many practitioners prefer to use cash flows rather than earnings as a basis for valuation using multiples. Practitioners, these scholars say, argue "that accruals involve discretion and are often used to manipulate earnings. . . . And expenses such as depreciation and amortization deviate substantially from actual declines in value because they are based on ad hoc estimates that are, in turn, derived from potentially meaningless historical costs."

flows.² Furthermore, both boards articulate the importance of accrual and cash flow information in achieving this objective. The IASB articulates its position as follows.

Information about a reporting entity's cash flows during a period also helps users to assess the entity's ability to generate future net cash inflows. It indicates how the reporting entity obtains and spends cash, including information about its borrowing and repayment of debt, cash dividends or other cash distributions to investors, and other factors that may affect the entity's liquidity or solvency. Information about cash flows helps users understand a reporting entity's operations, evaluate its financing and investing activities, assess its liquidity or solvency and interpret other information about financial performance.³

Despite identical objectives, standard setters have established different requirements for presentation of certain items—interest paid, interest received, and dividends received—in the statement of cash flows. As a consequence, the amount of OCF reported by a given entity can differ under U.S. GAAP and IFRS. Theoretically, the appropriate classification of these items is open to debate. Even when deliberating on the adoption of the statement of cash flows standard, Statement of Financial Accounting Standards No. 95 (SFAS 95), members of the FASB discussed the classifications of interest paid and interest received, ultimately opting to require these items be reported in the operating section.⁴

We initially document variation in classification choices within a hand-collected sample of 798 nonfinancial IFRS firms in 13 European countries from 2005 to 2012. About 76, 60, and 57% of the sample classifies interest paid, interest received, and dividends received, respectively, in OCF. Only about 42% of the sample firms that report all three items opt to classify all three in OCF. We document significant variation in classification across industries and most countries.

The first set of analyses focuses on firms' classification choices and the effect on reported OCF. Results indicate that reported OCF tends to be higher under IFRS than it would have been under U.S. GAAP. Similarly, investing and

² In IFRS, the *Conceptual Framework*, Chapter 1, The Objective Of General Purpose Financial Reporting ¶OB3 states: "Decisions by existing and potential investors about buying, selling or holding equity and debt instruments depend on the returns that they expect from an investment in those instruments, for example dividends, principal and interest payments or market price increases. Similarly, decisions by existing and potential lenders and other creditors about providing or settling loans and other forms of credit depend on the principal and interest payments or other returns that they expect. Investors', lenders' and other creditors' expectations about returns depend on their assessment of the amount, timing and uncertainty of (the prospects for) future net cash inflows to the entity. Consequently, existing and potential investors, lenders and other creditors need information to help them assess the prospects for future net cash inflows to an entity." In U.S. GAAP, *Concepts Statement No. 8* ¶OB3 is identical.

³ IFRS *Conceptual Framework*, Chapter 1, ¶OB20, which is identical to U.S. GAAP, *Concepts Statement No. 8* ¶OB20.

⁴ Even though U.S. GAAP requires interest paid and interest received to be reported as operating cash flows, paragraphs 88–90 in the basis of conclusions of SFAS 95 "Statement of Cash Flows" (FASB 1987) discuss the debate over the classification of interest paid and interest received during the deliberation preceding the adoption of the standard. See Nurnberg and Largay (1998) for a historical perspective on aspects of the debate. SFAS 95 is now codified in the FASB Accounting Standards Codification (ASC Sections 230 *Statement of Cash Flows*, 830 *Foreign Currency Matters*, and 942 *Financial Services – Depository and Lending*.)

financing cash flows would generally have been lower under IFRS. The pair-wise means, by firm, for the three cash flow amounts under IFRS versus U.S. GAAP differ significantly.

The second set of analyses focuses on determinants of firms' cash-flow classification choices from the perspective of OCF-increasing classifications. We examine incentives to inflate reported OCF, similar to the work of Lee (2012), including capital market incentives, financial distress, the presence of analysts' cash flow forecasts, and profitability. Furthermore, we explore characteristics associated with the reporting environment, such as analyst following, classification choices of industry peers, cross-listing in the U.S., country, and industry.

In our determinants analysis, we construct two dependent variables as proxies for OCF-increasing classification choices: (1) the amount of the difference in reported OCF under IFRS and a benchmark measure of what OCF would have been under U.S. GAAP and (2) an indicator variable signifying a classification choice that would increase OCF under IFRS relative to U.S. GAAP. For the first of these variables, we create a hypothetical benchmark by adjusting each firm's OCF to include interest paid, interest received, and dividends received (i.e., consistent with U.S. GAAP requirements). That is, we consider a hypothetical U.S. GAAP benchmark, assuming that managers' real operating activities would have remained the same even if cash-flow classification choices had been restricted. We do not assert these items are appropriately classified as OCF. Rather, we use U.S. GAAP classification as a benchmark because our main focus is on the differences between U.S. GAAP and IFRS. For the second of these dependent variables, we focus on the classification choice for one item, interest paid, which IFRS permits to be classified either in the operating or the financing section of the statement of cash flows. We focus on interest paid because it usually constitutes a relatively large amount relative to interest received and dividends received, is commonly reported, is typically reported separately, and is thus easier to identify. A firm may have more control over the amount and timing of cash outflows (i.e., payments), as opposed to cash inflows (i.e., receipts), thus making interest paid more susceptible to use as an OCF-increasing item.⁵ When a firm classifies interest paid as financing, it follows that, *ceteris paribus*, reported OCF will be higher than if interest paid had been classified as operating. Thus classification of interest paid as financing is an OCF-increasing classification choice.

A cross-sectional determinants analysis of all firms with consistent classification during the study period indicates that actually reported OCF exceeds benchmark-OCF by a greater amount for firms with weaker financial positions (i.e., greater likelihood of financial distress, higher leverage, and lower profitability). Firms with higher amounts of equity-raising activity also make greater OCF-increasing classification choices. For the determinants analysis using an indicator variable signifying classification choice, we find that firms with higher leverage are more likely to make an OCF-enhancing choice and firms cross-listed in the United States are more likely to make a classification choice that is consistent with U.S. GAAP. We find no effects related to homogeneity of industry practice or to the presence of analysts' cash flow forecasts.

⁵ We thank an anonymous reviewer for this observation.

An examination of 99 firms that change classifications during our sample period reveals that 58% make OCF-increasing classification choices. The most common change is a reclassification of interest paid out of operating, an OCF-increasing choice. Analysis indicates that an OCF-increasing reclassification is more likely for firms with greater equity issuance and less likely for firms with more analyst coverage, homogeneity of industry practice, and a cross-listing in the U.S.

Variation in classification of cash flow items also introduces noncomparability into measurement of widely used metrics, such as accruals and free cash flow.⁶ Therefore the final set of analyses focuses on consequences of flexibility in classification choice. The first consequence we examine pertains to the market pricing of persistence of cash flows and accruals. We examine whether the persistence of cash flows and accruals differs for firms that report consistent with U.S. GAAP, compared to those making classification choices permitted under IFRS. We find some evidence of differences in accrual pricing between the group of firms reporting consistent with U.S. GAAP and those using the classification flexibility allowed under IFRS, but results are sensitive to model specification.

A second consequence we examine pertains to models for predicting cash flows that have been used in accounting research. We find that differences in cash classification choices affect results when the cash flow prediction model is based on sales (Dechow et al. 1998; Roychowdhury 2006) but not when the cash flow prediction model is based on cash flows (Barth et al. 2001; Givoly et al. 2009). One implication is that the latter type of model may be more useful in the international context in which flexibility in cash-flow classification exists.

Our study contributes to literature on managerial discretion in the use of non-earnings measures, especially in an international context. Although managerial discretion in cash-flow classification could help financial statement users, our evidence suggests that classification choices are associated with incentives to report higher OCF. We also find that the likelihood of making an OCF-increasing change in classification is positively associated with equity issuance but negatively associated with analysts' coverage, consistent with analysts serving some deterrent role. Similarly, being cross-listed in the U.S. decreases the likelihood of making a cash-flow classification change.

Our study also contributes to the debate over costs and benefits of comparability and uniformity (De Franco et al. 2011). Flexibility in cash flow reporting may result in lower comparability and uniformity and thus may create significant costs for users because of the use of cash flows in valuation and contracting.⁷ We provide evidence that the market pricing of the persistence of accruals and cash flows differs, depending on the cash-flow classification choices made. While flexibility in cash-flow

⁶ Accruals are sometimes measured as the difference between earnings and cash flows from operating activities, and free cash flow is often measured as operating cash flow minus capital expenditures. The alternative Hribar and Collins (2002) measure of accruals based on the balance sheet, even if superior, is not always feasible in an international setting.

⁷ For example, Portugal Telecom reported 2006 OCF of €1,788. Interest paid of €569 was classified as financing, and interest received of €239 and dividends received of €36 were classified as investment activities. Overall, OCF would have been 16% lower under U.S. GAAP than as reported under IFRS. This illustrates the significance of cash-flow classification choices. An analyst covering Portugal Telecom and U.S. telecommunications companies or even other European telecommunication companies, such as Deutsche Telekom AG (which in 2006 classified dividends received, interest paid, and interest received all in operating), would have had to address noncomparability in financial ratios and in OCF-based valuations.

classification could lead to more informative OCF, our findings indicate that such flexibility impacts the comparability of reported OCF.⁸

Our study should matter to various audiences. Cash-flow classification choices available under IFRS, but not under U.S. GAAP, potentially limit the generalizability of U.S. evidence relying on reported OCF.⁹ Researchers comparing OCF and other performance measures should be interested in the effects of classification on their estimates (e.g., Bernard and Stober 1989; Sloan 1996; Ashbaugh and Olsson 2002; Orpurt and Zang 2009; Barton et al. 2010).

With an increasing number of countries permitting or requiring IFRS (De George et al. 2016), our findings should inform regulators, including the U.S. SEC, which has considered potential adoption of IFRS (SEC 2011). As IFRS allows more flexibility than U.S. GAAP, U.S. regulators should note the variation in firms' classification choices and the factors associated with those choices.¹⁰ Standard setters can use an understanding of the factors associated with a firm's reporting choices when crafting standards that permit alternatives. In addition, financial statement users may benefit from understanding whether and how management's cash flow classification choices relate to reporting incentives and firm characteristics (Carslaw and Mills 1991).

The paper is organized as follows. Section 2 discusses the motivation and research design. Section 3 describes our sample selection and presents a comprehensive description of cash flow classification of interest paid, interest received, and dividends received. Section 4 reports results of the determinants of firms' cash flow classification choices, while Section 5 includes the analysis of specific consequences of flexibility in classification choice. Section 6 concludes.

2 Motivation and research design

2.1 Determinants of OCF classification choices

We follow Lee (2012) and explore incentives and reporting environment factors related to reporting higher OCF.¹¹ Incentives for reporting higher OCF relate broadly to capital access and contracting. Additionally, reporting environment factors affecting classification choice include industry and market aspects (analysts' forecasts and cross-listing).

Because OCF is an important measure in assessing credit and default risk (Beaver 1966; Ohlson 1980; DeFond and Hung 2003), we expect that firms closer to financial distress will be motivated to report higher OCF. We create a proxy for financial distress

⁸ In their discussion of reasons for flexibility in financial reporting, Fields et al. (2001) note a potential benefit of flexibility is the ability for managers to provide a more informative signal; the authors also describe a pragmatic justification is the cost of eliminating flexibility. Arguably, a pragmatic explanation for flexibility across IFRS is the increased likelihood of widespread adoption.

⁹ See Barth et al. (1999), Piotroski (2000), Mohanram (2005), and Penman and Yehuda (2009), among others.

¹⁰ Additionally, from a practical standpoint, our identification of what appears to be more than incidental noncompliance with classification and disclosure guidance could be relevant to standard setters and regulators.

¹¹ Under IFRS, the choice of classification on the statement of cash flows is not required to be the same as the placement on the firm's income statement. So income statement classification incentives do *not* drive cash flow reporting.

based on Altman's Z-score (Altman and Hotchkiss 2006).¹² Arguably, firms accessing equity markets more frequently have a stronger incentive to inflate OCF to increase their valuation and thus the amount of capital they can raise. Therefore we expect that these firms will be more likely to classify so as to enhance their reported OCF. Our proxy for capital market incentives is equity issuances. We expect that, the more firms opt to access the equity markets, the stronger their incentives to report higher OCF. Thus we expect a positive relation between equity issues and OCF-increasing classification choices.

We predict that firms with contracting concerns and costs involved in renegotiating debt covenants will also seek to report higher OCF. Our proxy for contracting concerns is leverage, computed as total liabilities divided by total assets. We predict a positive relation.

We expect that profitability will be associated with OCF-increasing classification choices. On the one hand, less profitable firms could be more likely to make OCF-increasing classification choices, managing OCF upward to compensate for weakness in reported profits. On the other hand, more profitable firms could be likely to make OCF-enhancing classification choices to reflect better cash flow performance consistent with income performance. Therefore we do not predict the sign of the association between profitability and OCF-increasing choices.

We examine three explanatory variables related to the firm's information environment: (1) availability of analysts' cash flow forecasts, (2) industry practice, and (3) cross-listing in the U.S. The presence of an analyst's cash flow forecast indicates the perceived importance of OCF and the commensurate scrutiny of reported OCF (DeFond and Hung 2003; Call et al. 2009). Evidence also suggests that analysts' cash flow forecasts create capital market incentives to report higher OCF (DeFond and Hung 2003; Brown et al. 2013; Call et al. 2013). The perceived importance of OCF and capital markets incentives imply that firms are more likely to classify interest paid in financing (i.e., make an OCF-enhancing choice) when analysts have issued cash flow forecasts. However, other evidence suggests that analysts' cash flow forecasts help mitigate earnings management (DeFond and Hung 2003; Wasley and Wu 2006; DeFond and Hung 2007; McNnis and Collins 2011), essentially serving a deterrent role. This possible deterrence suggests that firms are less likely to make an OCF-enhancing classification choice when analysts have issued cash flow forecasts. Therefore we do not predict the sign of an association between analyst following and OCF-increasing classification choices.

Our second information-environment variable, industry practice, is relevant to classification choice because firms could be motivated to increase cross-sectional comparability by making classification choices consistent with those of their peer industry group.¹³ For example, when considering the choice of where to report interest

¹² Because of our cross-country and cross-market setting, we use the Altman model which primarily requires accounting variables. An alternative, the Shumway (2001) distress model, as used by Lee (2012), is developed for a single market and requires market-driven variables. How to extend the market-driven variables to a cross-country and cross-market setting is unclear.

¹³ This relates to the work of Khanna et al. (2004) and Bradshaw and Miller (2008), who show that foreign firms are more likely to choose accounting methods closer to U.S. GAAP if they cross-list in the United States or have product market interactions. Wang (2014) documents increased cross-country intra-industry information transfers within the EU after IFRS adoption.

paid, a firm could be hurt by classifying interest paid as operating and thus reporting comparatively lower OCF when, for example, the majority of its industry peers classify interest paid as financing. Alternatively, a firm could make a different choice to distinguish itself from its peers and possibly report higher OCF. In this case, OCF-increasing choices would not be expected to be associated with industry practice. Therefore we have no prediction on the sign of the homogeneity of firms' classification choices within an industry.

Our third information environment variable pertains to U.S. cross-listing. Bradshaw et al. (2004) argue that cross-listed firms have stronger incentives to make similar reporting choices as U.S. companies. Empirically, their data show a positive correlation between U.S. GAAP conformity and cross-listing. Therefore we expect that cross-listed firms will be less likely to classify items such as interest paid in financing, which is not allowed under U.S. GAAP.

We include firm size to capture financial reporting incentives, financial reporting expertise, and the financial reporting environment of large versus small firms. We do not have a prediction for its sign. Finally, we include indicator variables for country and industry. The regression model is as follows:

$$\begin{aligned}
 OCF_Classification_i = & a_0 + a_1 Distress_Hi_i + a_2 Equity\ Issues_i + a_3 Leverage_Hi_i \\
 & + a_4 Profitability_i + a_5 Analysts\ Cash\ Flow\ Forecast_i \\
 & + a_6 Industry\ Homogeneity_i + a_7 Cross-listed\ in\ US_i \\
 & + a_8 Size_i + e_i,
 \end{aligned}
 \tag{1}$$

where:

OCF_Classification_i is either *OCF_Reported_t* less *OCF_Pro forma_USGAAP_t* or *Interest Paid in Financing*;

OCF_Reported_t less *OCF_Pro forma_USGAAP_t* = operating cash flows as reported by the firm for year *t* less operating cash flows for year *t* adjusted to include interest paid, interest received, and dividends received in operating cash flows if these items are not already reported in the operating section, averaged over the sample period;

Interest Paid in Financing = one if the firm classifies interest paid in financing cash flows as of the last year reported and zero otherwise;

Distress_Hi = one if the firm's financial distress computed using Altman's Z-score is less than 1.81, indicative of high distress, and zero otherwise;

Equity Issues = percentage change in the firm's contributed capital over the sample period;

Leverage_Hi = one if the firm's ratio of total liabilities over total assets at the beginning of the fiscal year, averaged over the sample period, is greater than the median and zero otherwise;

Profitability = the firm's net income divided by beginning total assets, averaged over the sample period;

<i>Analysts Cash Flow Forecast</i>	= one if at least one analyst's cash flow forecast is available on IBES and zero otherwise, averaged over the sample period;
<i>Industry Homogeneity</i>	= the percentage of firms within an industry that report interest paid in financing cash flows, with industry classifications based on Barth et al. (1998);
<i>Cross-listed in US</i>	= one if the firm is cross-listed in the United States and zero otherwise;
<i>Size</i>	= the natural logarithm of the firm's beginning of year market capitalization in U.S. dollars, averaged over the sample period.

Regressions include country, industry, and year controls.

We create one observation per firm summarizing data available during the sample period to compute the variables in the model. Firms with consistent classification over time are analyzed separately from firms that changed classification.¹⁴ To examine the relation between the variables described above and the magnitude of the effect of IFRS-permitted classification choices, we estimate an OLS regression model using the dependent variable, *OCF_Reported, less OCF_Pro forma_USGAAP*. To examine the relation between the variables described above and the likelihood of an OCF-enhancing classification choice, we estimate a logistic regression in which the dependent variable is *Interest Paid in Financing*.

2.2 Determinants of OCF-increasing reclassifications

Because cross-sectional variations in the classification within the statement of cash flows might result from historical legacy for each firm, the subsample of firms that change classification may offer a cleaner setting to examine the determinants of classification choice. The [Appendix](#) presents an example of one company that changed its classifications of interest paid and interest received. In 2007, Norse Energy Corp. ASA, a Norwegian gas explorer and producer, changed its classification of interest paid to financing from operating. Norse Energy also changed its classification of interest received from operating to investing. The net effect of these changes was that it reported positive, rather than negative, operating cash flows in both 2007 and 2008.¹⁵

The various classification changes impact reported operating cash flow differently. To examine determinants of classification choice, we therefore focus on firms that increased OCF by making the classification change. We compare the OCF-increasing changers to a control group of firms that did not make a classification change and specifically nonchanging firms with existing classification choices that have not already maximized reported OCF. (OCF would be maximized by excluding interest paid from operating while including both interest received and dividends received in operating.) Thus we include the nonchanging firms facing a similar decision as the OCF-enhancing changers; that is, they face the possibility of increasing reported OCF by making a change in classification.

¹⁴ We examine these classification changers separately in Section 2.2.

¹⁵ Within our sample, operating cash flows for firms reporting negative operating cash flows would become positive from an IFRS-allowed reclassification in about 1% of firm-year observations.

To examine the relation between the determinant variables described in Section 2.1 above and the likelihood of OCF-increasing classification choices, we estimate a logistic regression similar to Eq. (1) with the dependent variable *OCF-Increasing Classification Change* equal to one if the firm increased OCF by making a classification change and zero otherwise. Our expectations on the independent variable signs are similar.

2.3 Consequences: market pricing of the persistence of cash flows

Prior research shows that the cash flow component of earnings is more persistent than the accrual component. Yet market pricing does not always correctly reflect this relatively greater persistence (Sloan 1996; Dechow et al. 2008; Pincus et al. 2007). In the context of cash flow classification, the question remains whether investors anticipate the persistence of reported operating cash flows and accruals similarly, regardless of where cash flow items are classified. Our analysis focuses on a comparison of the persistence parameters for accruals and cash flow components of earnings with the parameters that are implied by stock returns—similar to the approach of Sloan (1996) and Dechow et al. (2008).

$$EARNINGS_{t+1} = \alpha_0 + \alpha_1 ACCR_Reported_t + \alpha_2 OCF_Reported_t + Controls_t + v_t \quad (2)$$

$$Returns_{t+1} = \beta \left(EARNINGS_{t+1} - \alpha_0^\# - \alpha_1^\# ACCR_Reported_t + \alpha_2^\# OCF_Reported_t + \phi Controls \right) + \varepsilon_t, \quad (3)$$

where:

- EARNINGS*_{*t*+1} = the amount of net income for year *t* divided by average of total assets for year *t*;
- ACCR_Reported*_{*t*} = the amount of accruals, calculated as net income less reported operating cash flows for year *t* divided by average of total assets for year *t*;
- OCF_Reported*_{*t*} = the reported amount of operating cash flow for year *t* divided by average of total assets for year *t*;
- Controls* = *Size*_{*t*}, *BM*_{*t*}, and *EP*_{*t*}. *Size*_{*t*} = the natural logarithm of the firm's market capitalization in U.S. dollars at the beginning of year *t*. *BM*_{*t*} = the firm's book-to-market ratio, calculated as the ratio of the firm's shareholders' equity divided by its market capitalization at the beginning of year *t*. *EP*_{*t*} = the firm's net income divided by its market capitalization at the beginning of year *t*.
- Returns*_{*t*+1} = annual return computed 6 months after year end.

We undertake this analysis separately for the subsample of firms with classification choices that reflect the flexibility under IFRS (*FLEX* = 1) and the subsample with

classification choices similar to those under U.S. GAAP. The coefficients α_1 and α_2 from the forecasting Eq. (2) indicate the persistence of the two components of earnings: accruals and cash flow. Prior research has shown that the cash flow component of earnings is more persistent than the accruals component. We examine whether the relationship $\alpha_1 > \alpha_2$ holds for both subsamples. An impact of differences in classification choice would be indicated by differences in comparative persistence parameters for accruals and OCF.

A comparison is also made between the coefficients from the market pricing equation ($\alpha_1^\#$ and $\alpha_2^\#$), and from the forecasting equation (α_1 and α_2). Presence of the accrual anomaly, for example, is indicated by market underweighting cash flow ($\alpha_2^\# < \alpha_2$) and overweighting accruals ($\alpha_1^\# > \alpha_1$). In the international context, Pincus et al. (2007) provide evidence of the accrual anomaly only in certain countries; therefore our focus is not on whether we find evidence of the accrual anomaly. Rather, we examine whether the comparative relationships between market pricing of the cash flow and accrual components differs for the two subsamples.

2.4 Consequences: models of OCF prediction

Next, we examine models of operating cash flow prediction. These models are used both to develop expected cash flows (Dechow et al. 1998; Roychowdhury 2006; Kim and Park 2014) and to determine whether accounting measures predict cash flows (Barth et al. 2001; Givoly et al. 2009; Badertscher et al. 2012). We investigate whether the cash flow classification choices have different implications for the prediction of future cash flows. The first model we examine uses past sales and changes in sales to predict OCF based on Dechow et al. (1998):

$$OCF_{t+1} = \gamma_0 + \gamma_1 \frac{1}{TA_t} + \gamma_2 \frac{S_t}{TA_t} + \gamma_3 FLEX \times \frac{S_t}{TA_t} + \gamma_4 \frac{\Delta S_t}{TA_t} + \gamma_5 FLEX \times \frac{\Delta S_t}{TA_t} + \gamma_6 FLEX + \gamma_7 Size_t + \gamma_8 BM_t + \gamma_9 EP_t + \varepsilon_{t+1}, \quad (4)$$

where:

- $1/TA_t$ = one divided by the average of total assets for year t ;
- S_t/TA_t = sales revenue for year t divided by the average of total assets for year t ;
- $FLEX \times S_t/TA_t$ = the interaction between the indicator variable $FLEX$ and sales revenue for year t ;
- $\Delta S_t/TA_t$ = change in sales revenue from year $t-1$ to year t divided by the average of total assets for year t ;
- $FLEX \times \Delta S_t/TA_t$ = the interaction between the indicator variable $FLEX$ and change in annual sales divided by average of total assets for year t .

Regressions include country, industry, and year controls.

In this model, the variables of interest are the $FLEX$ interactions with sales and changes in sales, γ_3 and γ_5 . The coefficients on these variables will be significant if the firm's IFRS classification choices result in different predicted future OCF than would U.S. GAAP classification choices. Because OCF using $FLEX$ classification choices is higher on average than OCF using U.S. GAAP classification choices, we expect the

FLEX interaction coefficients to be positive. If the classification does not relate to the future OCF, the *FLEX* interaction coefficients will not be significant. We expect the coefficients on sales and changes in sales to be positive and significant, consistent with prior research.

The second prediction model uses past OCF and accruals to predict future OCF similar to the work of Barth et al. (2001).

$$OCF_{t+1} = \varphi_0 + \varphi_1 ACCR_Reported_t + \varphi_2 FLEX \times ACCR_Reported_t + \varphi_3 OCF_Reported_t + \varphi_4 FLEX \times OCF_Reported_t + \varphi_5 FLEX + \varphi_6 Size_t + \varphi_7 BM_t + \varphi_8 EP_t + \varepsilon_{t+1}, \quad (5)$$

where all variables are as previously defined. These regressions include country, industry, and year controls.

In this model, the coefficients on the *FLEX* interactions with accruals and past OCF, φ_2 and φ_4 , will be significant if the predicted future OCF differs for firms using classification choices allowable under IFRS but not under U.S. GAAP. On one hand, we would expect the *FLEX* interaction coefficients to be positive because OCF using IFRS classification choices is higher than OCF using U.S. GAAP classifications. On the other hand, unlike the sales model, the independent variables are past cash flows and past accruals. Because past cash flows and past accruals capture the firm's classification choices in the prediction of future cash flows (using those same classification choices), these variables serve as controls for the classification choice also. In this case, the *FLEX* interaction coefficients will not be significant.

3 Sample selection and classification choices

3.1 Sample selection

Table 1 presents our initial sample selection procedures. We select our sample of firms based on data availability in 2008 and then extend the sample to 2012, for a total sample period of 2005 to 2012.¹⁶ We identify all nonfinancial firms in Compustat Global with key data items for all fiscal years from 2005 to 2008, including total assets,

¹⁶ We select our sample based on data availability in 2008 to maximize coverage of firms with at least 3 years of data following the widespread mandatory adoption of IFRS in Europe starting in 2005. Our focus is on the post-2005 period because that is the timeframe in which firms in our sample largely faced similar classification alternatives. Prior to 2005, some firms had already adopted IFRS or were using a home-country GAAP that permitted IFRS-allowable classifications. Cash flow reporting varied by country in the period before IFRS adoption. According to the Nobes (2001) report, the following countries' local GAAP had no specific rules requiring a cash flow statement: Austria, Belgium, Finland, Italy, and Spain. For Portugal, Nobes (2001) indicates there were no specific rules except for listed companies; our review of listed companies' pre-IFRS annual reports in Portugal indicates that the classifications for interest paid, interest received, and dividends received were financing, investing, and investing, respectively. The classification requirements were similar to IFRS in the UK (Davies et al. 1997) and in Germany (Leuz 2000). We were unable to document any local GAAP requirements for Denmark, the Netherlands, Norway, and Sweden, so we reviewed actual annual reports in the pre-IFRS period. In these reports, the classification used for all three items in those countries was operating. Nobes (2011) summarizes classification practices related to interest paid in five countries pre-IFRS as follows: Austria and France—operating; United Kingdom—financing; and Germany and Spain—operating or financing.

Table 1 Sample selection

Country	Available Firms ^a	Number Selected ^b	Inaccessible Financial Statements ^c	Number of Sample Firms	Number of Sample Obs. ^d
Austria	52	52	21	31	235
Belgium	67	67	20	47	373
Denmark	67	67	31	36	276
Finland	102	102	59	43	341
France	406	122	16	105	811
Germany	419	127	26	109	742
Italy	206	100	55	45	352
Netherlands	103	103	37	66	485
Norway	103	103	60	43	328
Portugal	38	38	18	20	160
Spain	78	78	20	58	445
Sweden	201	100	33	67	519
United Kingdom	<u>973</u>	<u>146</u>	<u>18</u>	<u>128</u>	<u>979</u>
Total	2,815	1,204	413	798	6,046

^a Available firms are initially identified as the nonfinancial firms in Compustat Global that report under IFRS, are based in Europe, and have key financial data (total assets, operating cash flow, and market value) for fiscal years 2005 to 2008

^b For those countries with 100 firms or less, we select 100% of the firms. For those countries with over 100 firms, we select the greater of 100 firms or 30% of the firms with available data. Because of the large number of firms in the United Kingdom, we select 15% of the firms, or 146, using stratified sampling

^c Firms with inaccessible financial reports consist primarily (94%) of firms whose annual reports are missing from Mergent Online Database and a smaller number of firms where the annual reports were unavailable in English, German, or Danish

^d For the 798 firms in the resulting sample, we collect all available data for the period 2005 to 2012

OCF, and market values. We exclude financial firms because prior research shows that the informativeness of these firms' cash flow statements differs from those of nonfinancial firms (Beatty et al. 2016). This selection procedure yields 2815 available firms.

Because databases do not accurately report cash flow classification, we hand collect the detailed cash flow items from the financial statements. For those countries with 100 available firms or less, we select 100% of the firms. For those countries with over 100 available firms, we select the greater of 100 firms or 30% of the firms with available data. Because of the large number of firms in the United Kingdom, we selected 15% (or 146) of total potential firms to collect the cash flow data. When sampling from the available population of firms within a country, we use stratified sampling, first ranking within country by industry and size (total assets) and then selecting firms. This selection procedure results in a potential sample of 1204 firms. Our final sample is reduced to 798 firms primarily because of non-accessible financial statements. The financial statements are either missing in Mergent Online (94% of cases) or written in languages other than English, German, or Danish. For the 798 sample firms, we collect all available data for the period from 2005 to 2012.

Table 2 presents a description of the size and profitability of the 798 firms in the final sample and a comparison with other firms in the country that were excluded because of inaccessible financial statements. As expected, the 798 firms in the final sample are generally larger (and, on average, more profitable) than the firms that were excluded.

In our data collection, we encountered an unexpected absence of interest paid, consistent with a possible noncompliance issue with regard to disclosure of interest paid.¹⁷ For 1347 observations, we could not locate interest paid or where it was classified on the statement of cash flows after searching the statement of cash flows and the financial statement footnotes.¹⁸ These firms may not have paid interest or interest paid may have been immaterial. However, we confirm that 1305 (1325) observations had interest expense (long-term debt) in Compustat Global and thus likely paid interest. Based on our review of disclosures by other firms, we determine that, if the interest paid had been in the investing or financing sections, it would likely have appeared as a separate line in the section in the statement of cash flows.¹⁹ Therefore we categorize these observations as reporting interest paid in operating for our analyses. This classification tends to understate the difference between IFRS and U.S. GAAP.

3.2 Description of classification choices

Table 3 describes the classification choices for interest paid, interest received, and dividends received—by country and industry.²⁰ The number of observations differs in each panel because not all firms report each item.²¹

The choice of where to classify interest paid in the statement of cash flows varies by country (Table 3, panel A). Overall, about 76% of the sample firms classify interest paid in operating and 23.5% in financing. In our sample, all firms in Finland classify interest paid in the operating section. Over 95% of all Danish and Swedish firms choose to classify interest paid in operating. In Portugal, however, about 81% of our sample firms classify interest paid in financing. About 65% of the observations in Belgium,

¹⁷ IAS 7, *Statement of Cash Flows*, requires separate disclosures of cash flows from interest and dividends received and interest paid, see paragraph 31 (IASB 1994).

¹⁸ For each country, the percentage of nondisclosure of interest paid is as follows: Austria, 19%; Belgium, 27%; Denmark, 37%; Finland, 12%; France, 27%; Germany, 8%; Italy, 23%; Netherlands, 29%; Norway, 27%; Portugal, 14%; Spain, 29%; Sweden, 42%; and the United Kingdom, 11%.

¹⁹ A noncompliance issue is also possible with regard to interest received and dividends received. However, we cannot check these against other financial statements items as easily because Compustat Global has incomplete data.

²⁰ U.S. GAAP also requires that taxes paid be classified as operating and dividends paid as financing. While IFRS allows discretion in these classifications, data on taxes paid and dividends paid for a substantial subsample of our firms indicate that over 99% of firms classified these items consistent with U.S. GAAP. Given the homogeneity of classification choice, we exclude income taxes paid and dividends paid from our analyses.

²¹ IAS 7, *Statement of Cash Flows*, requires cash flows from interest and dividends received and paid to be classified as either operating, investing or financing activities (IAS 7, paragraph 31). Furthermore, IAS 7, paragraph 33, states: “Interest paid and interest and dividends received are usually classified as operating cash flows for a financial institution. However, there is no consensus on the classification of these cash flows for other entities. Interest paid and interest and dividends received may be classified as operating cash flows because they enter into the determination of profit or loss. Alternatively, interest paid and interest and dividends received may be classified as financing cash flows and investing cash flows respectively, because they are costs of obtaining financial resources or returns on investments.” However, as shown in Table 3, we find cases where companies do not follow this guidance.

Table 2 Sample description by country and comparison with other firms in the country

Country	Panel A: Total assets in U.S. dollars (millions) ^a						Panel B: Net income divided by total assets ^a					
	Sample Collected			Other Firms			Sample Collected			Other Firms		
	Number of firms	Mean	Median	Number of firms	Mean	Median	Number of firms	Mean	Median	Number of firms	Mean	Median
Austria	31	3,044	559	21	1,139	341	31	0.0123	0.0243	21	0.0087	0.0232
Belgium	47	5,558	674	20	1,175	198***	47	0.0306	0.0320	20	0.0247	0.0129*
Denmark	36	3,832	593	31	285*	103***	36	-0.0592	0.0485	31	0.0489	0.0063***
Finland	43	3,979	1,609	59	794**	108***	43	0.0432	0.0388	59	0.0168	0.0395
France	105	16,620	5,186	301	2,476***	129***	105	0.0285	0.0389	301	-0.0096**	0.0247***
Germany	109	21,981	2,535	310	999***	105***	109	0.0380	0.0368	310	-0.0419***	0.0235*
Italy	45	14,020	5,756	161	2,237**	362***	45	0.0315	0.0303	161	-0.0302*	0.0099***
Netherlands	66	7,410	1,185	37	2,114**	205***	66	0.0121	0.0377	37	-0.0195	0.0382
Norway	43	4,441	635	60	515***	102	43	0.0134	0.0308	60	-0.1419*	-0.0205***
Portugal	20	5,595	1,766	18	1,128*	271	20	-0.0145	0.0110	18	-0.0592	0.0013
Spain	58	13,813	2,555	20	4,419*	943**	58	0.0318	0.0335	20	0.0031	0.0146
Sweden	67	4,187	913	134	278***	49***	67	0.0373	0.0461	134	-0.0582***	0.0261**
United Kingdom	<u>128</u>	<u>4,820</u>	<u>919</u>	<u>845</u>	<u>2,279*</u>	<u>59***</u>	<u>128</u>	<u>0.0175</u>	<u>0.0376</u>	<u>845</u>	<u>-0.1989***</u>	<u>0.0049***</u>
Total	798	9,748	1,665	2,017	1,810***	96***	798	0.0220	0.0368	2,017	-0.1032***	0.0149***

^a Fiscal 2008 amounts are used to compare net income and total assets for sample firms to other firms
 *, **, *** denote statistical significance of difference between sample firms and nonselected firms
 * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

France, Germany, Spain, and the United Kingdom classify interest paid in operating. About 0.5% of the sample classifies interest paid as an investing cash flow, inconsistent with guidance in IAS 7, *Statement of Cash Flows*, paragraph 33 (IASB 1994).

Classification of interest received also varies as shown in Table 3, panel A. About 60, 31, and 9% classify interest received in operating, investing, and financing, respectively. Similar to the reporting of interest paid, a very high proportion of the sample firms in Denmark, Finland, and Sweden classify interest received in operating. Portugal, the United Kingdom, and Spain have the highest percentage of firms classifying interest received in investing, at 91, 61, and 52%, respectively. About 9% of the sample firms classify interest received as a financing cash flow, inconsistent with guidance in IAS 7, *Statement of Cash Flows*, paragraph 33 (IASB 1994).

Dividends received are primarily classified in operating and investing, at 57 and 40%, respectively, as shown in Table 3, panel A. Over 90% of observations from Austria and Sweden classify dividends received as operating. In contrast, only 23% of the Portuguese firms in our sample classify dividends received as operating, with the remaining 77% classify them as investing. About 3% of the sample classifies dividends received as a financing cash flow, inconsistent with guidance in IAS 7, *Statement of Cash Flows*, paragraph 33.

Panel B of Table 3 shows cash flow classifications by industry.²² Classification choices for interest paid shows less variation across industries than across countries. Across all industries, at least two-thirds of firms classify interest paid as operating. The percentage of the sample classifying interest paid in financing ranges from 13% for durable goods manufacturers to 33% for both chemicals and services and 34% in other.

For interest received, 71% of durable goods manufacturers and 70% of firms in textiles, printing, and publishing classify interest received in operating. Firms in the remaining industries are less likely to classify interest received in operating, with the lowest frequency for chemicals at 36%. Finally, for dividends received, 81% of firms in the extractive industries report dividends received in operating, followed by durable goods manufacturers, with 70% classifying dividends received in operating.

Table 4 presents information on common classification-choice combinations for the 1925 firm-year observations that clearly disclose classification choices for all three items. The most common classification-choice combination, selected by 42%, is classifying all items in OCF. The second most common combination is classifying interest paid in financing and both dividends received and interest received in investing. Table 4, panel B, reports classifications by section pairs. The diagonals of the section-pair classifications indicate similarities of classification choices, by item. For example, of the 1310 observations that classify interest paid as operating, 83% (1093/1310) also classify interest received as operating. Interest paid and interest received are classified differently by 35% (671/1925) of observations, implying that *net* interest is not automatically a determinant of OCF reported under IFRS. For interest received and dividends received, 32% (624/1925) of observations classify these two items in the different sections.

The financial statement effects of cash flow classification choices are reflected in a comparison of reported OCF and pro-forma U.S. GAAP OCF. Specifically, we test whether the operating, investing, and financing cash flows as reported would differ

²² We follow the industry definitions of Barth et al. (1998).

Table 3 Classification of interest paid, interest received, and dividends received in the statement of cash flows by country and industry

Country	Interest Paid Classification			Interest Received Classification			Dividends Received Classification					
	Total	Operating	Financing	Total	Operating	Financing	Total	Operating	Financing			
		Investing			Investing			Investing				
Austria	235	87%	0%	13%	187	80%	20%	0%	89	91%	9%	0%
Belgium	373	66%	0%	34%	272	49%	24%	27%	137	50%	43%	7%
Denmark	276	99%	0%	1%	187	98%	0%	2%	80	33%	66%	1%
Finland	341	100%	0%	0%	288	97%	3%	0%	259	70%	30%	0%
France	811	67%	0%	33%	198	77%	14%	9%	319	55%	40%	5%
Germany	742	68%	0%	32%	641	67%	21%	12%	361	67%	28%	5%
Italy	352	85%	0%	15%	175	72%	22%	6%	191	56%	40%	4%
Netherlands	485	93%	1%	6%	282	61%	30%	9%	168	43%	57%	0%
Norway	328	76%	0%	24%	175	55%	29%	16%	103	62%	30%	8%
Portugal	160	19%	0%	81%	138	4%	91%	5%	123	23%	77%	0%
Spain	445	67%	0%	33%	266	39%	52%	9%	188	58%	42%	0%
Sweden	519	96%	0%	4%	300	93%	1%	5%	95	92%	4%	4%
United Kingdom	979	65%	2%	33%	841	33%	61%	6%	214	46%	54%	0%
Total	6,046	76%	0.5%	23.5%	3,950	60%	31%	9%	2,327	57%	40%	3%

Panel A: Classification in the statement of cash flows by country^a

Table 3 (continued)

Industry	Interest Paid Classification			Interest Received Classification			Dividends Received Classification					
	Total	Operating	Investing	Financing	Total	Operating	Investing	Financing	Total	Operating	Investing	Financing
Panel B: Interest paid classification in the statement of cash flows by industry^a												
Mining and construction	373	76%	1%	23%	270	56%	39%	5%	184	58%	42%	0%
Food	328	80%	1%	19%	192	63%	31%	6%	147	68%	32%	0%
Textiles, printing, and publishing	494	81%	0%	19%	341	70%	24%	6%	211	55%	42%	3%
Chemicals	214	67%	0%	33%	151	36%	39%	25%	112	65%	30%	5%
Pharmaceuticals	221	84%	0%	16%	141	63%	19%	18%	43	44%	56%	0%
Extractive industries	279	70%	1%	29%	194	63%	28%	9%	92	81%	12%	7%
Durable manufacturers	724	87%	0%	13%	445	71%	21%	8%	214	70%	25%	5%
Computers	591	72%	0%	28%	329	56%	43%	1%	118	51%	38%	11%
Transportation	637	73%	0%	27%	440	63%	33%	4%	349	48%	48%	4%
Utilities	204	71%	0%	29%	120	62%	36%	2%	110	38%	62%	0%
Retail	510	76%	0%	24%	326	54%	36%	10%	171	64%	36%	0%
Services	529	66%	1%	33%	370	48%	42%	10%	154	44%	52%	4%
Other	<u>942</u>	<u>76%</u>	<u>0%</u>	<u>34%</u>	<u>631</u>	<u>64%</u>	<u>24%</u>	<u>12%</u>	<u>422</u>	<u>60%</u>	<u>39%</u>	<u>1%</u>
Total	6,046	76%	0.5%	23.5%	3,950	60%	31%	9%	2,327	57%	40%	3%

^a The number of observations for each classification choice reflects the number of firms disclosing amounts for the item

Table 4 Classification of interest paid, interest received, and dividends received in the statement of cash flows, by combination**Panel A: Classification for all items by section combinations^a**

Interest Paid	Interest Received	Dividends Received	Obs.	Percent
Operating	Operating	Operating	804	42%
Financing	Investing	Investing	265	14%
Operating	Operating	Investing	262	14%
Operating	Investing	Investing	153	8%
Financing	Investing	Operating	86	5%
Financing	Financing	Operating	77	4%
Operating	Investing	Operating	62	3%
Financing	Operating	Operating	60	3%
Financing	Financing	Investing	52	3%
Financing	Operating	Investing	40	2%
Operating	Operating	Financing	27	1%
Other Combinations			<u>37</u>	<u>2%</u>
Total			1,925	100%

Panel B: Classification by section pairs^a

		Interest Paid			
		Operating	Investing	Financing	Total
Interest Received	Operating	1,093	0	103	1,196
	Investing	213	18	351	582
	Financing	<u>4</u>	<u>0</u>	<u>143</u>	<u>147</u>
		1,310	18	597	1,925
Dividends Received	Operating	868	11	225	1,104
	Investing	415	7	357	779
	Financing	<u>27</u>	<u>0</u>	<u>15</u>	<u>42</u>
		1,310	18	597	1,925
		Interest Received			
		Operating	Investing	Financing	Total
Dividends Received	Operating	862	157	81	1,104
	Investing	306	425	52	779
	Financing	<u>28</u>	<u>0</u>	<u>14</u>	<u>42</u>
		1,196	582	147	1,925

^a Includes only those observations where the firm discloses the classification choice for each of the three items

significantly from cash flows under U.S. GAAP classifications. We adjust as-reported OCF to include interest paid, interest received, and dividends received. Similarly, we adjust as-reported investing and financing cash flows to exclude these items.²³ Table 5 reports descriptive statistics of the as-reported cash flows and the pro forma U.S. GAAP cash flows.²⁴ The mean (median) of reported OCF is about 2.4% (3.5%) higher than it would have been under U.S. GAAP,²⁵ while financing cash flows are lower. Reported investing cash flow is also higher than it would have been under U.S. GAAP, reflective of instances in which interest received, dividends, or both received are reported as investing inflows (which is not allowed under U.S. GAAP). Means and medians of OCF, investing cash flows, and financing cash flows in the pooled sample differ significantly between as-reported amounts and pro forma U.S. GAAP amounts. Means of the pair-wise differences are significantly different for all cash flow components.

4 Results of determinants tests

4.1 OCF classification choices

Table 6, panel A, reports descriptive statistics for variables in the determinants analysis.²⁶ The number of firms is reduced from 798 to 538 because the following are excluded: firms that changed their classification choice during the period; firms from Denmark, Finland, and Sweden (where classification choices for interest paid and interest received exhibit little or no variation); and firms missing data to compute all independent variables.

Results of the regression using differences in OCF as the dependent variable are presented in the left columns of Table 6, panel B. A higher value of the differences in OCF variable, *OCF_Reported less OCF_Pro forma_USGAAP*, signifies a greater OCF-enhancing impact of classification choices that differ from the hypothetical benchmark. As expected, we find that *Distress_Hi* (an indicator variable signifying greater likelihood of financial distress) is positively and significantly related to *OCF_Reported less OCF_Pro forma_USGAAP*. This finding suggests that financially distressed firms make more OCF-increasing classification choices. *Equity_Issues* is also positive and significant, suggesting that firms that access equity markets more frequently opt to make classification choices to report higher OCF. *Leverage_Hi* is also significantly positive, indicating that firms with greater leverage are more likely to make classification choices to show higher OCF. *Profitability* is significantly negative indicating that less profitable firms are more likely to make OCF-enhancing classification

²³ If values are missing for any cash flow variables, we set them equal to zero in our computations.

²⁴ Variables in Table 5 are winsorized at the top and bottom percentile.

²⁵ Percentage differences are computed as $(OCF_Reported_i / OCF_Pro_forma_USGAAP_i) - 1$. Untabulated analysis indicates that more than 80% of the observations with differences between as-reported and pro forma amounts reported OCF higher than it would have been under U.S. GAAP.

²⁶ The mean of *OCF_Reported less OCF_Pro forma_USGAAP* in Table 5 and the percentage reporting interest paid in financing in Table 3, panel A, are slightly different than those reported here because Table 6 summarizes observations by firm rather than firm-year.

Table 5 Comparison of reported to pro forma U.S. GAAP operating, investing, and financing cash flows

Number of firm-year observations 6046	Mean	Std.Dev.	Median
$OCF_Reported_t$	0.0882	0.0631	0.0824
$INV_Reported_t$	-0.0666	0.0635	-0.0532
$FIN_Reported_t$	-0.0282	0.0725	-0.0215
$OCF_Pro\ forma_USGAAP_t$	0.0861	0.0639	0.0796
$INV_Pro\ forma_USGAAP_t$	-0.0679	0.0638	-0.0541
$FIN_Pro\ forma_USGAAP_t$	-0.0157	0.0766	-0.0191
$OCF_Reported_t - OCF_Pro\ forma_USGAAP_t$	0.0022***	0.0059	0**
$INV_Reported_t - INV_Pro\ forma_USGAAP_t$	0.0007***	0.0017	0*
$FIN_Reported_t - FIN_Pro\ forma_USGAAP_t$	-0.0028***	0.0062	0***

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Variable Definitions:

$OCF_Reported_t$ = operating cash flows as reported by the firm for year t

$OCF_Pro\ forma_USGAAP_t$ = operating cash flows for year t adjusted to include interest paid, interest received, and dividends received in operating cash flows if these items are not already reported in the operating section

$INV_Reported_t$ = investing cash flows as reported by the firm for year t

$INV_Pro\ forma_USGAAP_t$ = investing cash flows for year t adjusted to exclude interest paid, interest received, and dividends received

$FIN_Reported_t$ = financing cash flows as reported by the firm for year t

$FIN_Pro\ forma_USGAAP_t$ = financing cash flows for year t adjusted to exclude interest paid, interest received, and dividends received

All firm subscripts are omitted. All variables are scaled by the firm's total assets

choices. In terms of economic significance, our results indicate that one standard deviation in the variables *Equity Issues* and *Profitability* corresponds to a change in the dependent variable ($OCF_Reported_less\ OCF_Pro\ forma_USGAAP$) of \$10.0 million and \$7.9 million, respectively (corresponding to approximately 0.1% of average assets). Similarly, one standard deviation in the dichotomous variables *Distress_Hi* and *Leverage High* corresponds to a change in $OCF_Reported_less\ OCF_Pro\ forma_USGAAP$ of \$11.3 million and \$8.3 million, respectively.

Finally, size is negative and significant. Neither *Analysts Cash Flow Forecast*, *Industry Homogeneity*, *Cross-listed in US* nor any of the industry indicator variables (not tabulated) are significant. Country indicator variables are all negative and significant with p -values below 0.01.²⁷

The right columns of Table 6, panel B, present the results of estimating the logistic regression, where the classification choice to report interest paid in financing is the dependent variable. Similar to the results of the OLS regression, *Leverage_Hi* is positively and significantly associated with the choice to classify interest paid in financing. This result implies that highly leveraged firms are 44.2% more likely to make an OCF-increasing classification choice of interest paid as financing. In addition,

²⁷ For country (industry) fixed effects, our baseline in the intercept is Portugal (other industries). We perform diagnostic tests and find no evidence of multicollinearity. Condition indices are less than 3 for main variables.

Table 6 Descriptive statistics and regressions of the difference in operating cash flows and interest paid in financing on incentives and reporting environment

Panel A: Descriptive statistics^a							
Variable		Mean		Std. Dev.		Median	
Number of firms $n = 538$							
<i>OCF_Reported_t less</i>							
<i>OCF_Pro forma_USGAAP_t</i>		-0.0007		0.0502		0.0003	
<i>Interest Paid Reported in Financing</i>		0.2379		0.4262		0.0000	
<i>Distress_Hi</i>		0.4329		0.4149		0.3750	
<i>Equity Issues</i>		0.1142		0.2099		0.0408	
<i>Leverage_Hi</i>		0.5260		0.4998		1	
<i>Profitability</i>		0.0394		0.0466		0.0358	
<i>Analysts Cash Flow Forecast</i>		0.4830		0.3478		0.5714	
<i>Industry Homogeneity</i>		0.7005		0.0700		0.7185	
<i>Cross-listed in U.S.</i>		0.0576		0.2332		0	
<i>Size</i>		6.5950		1.9596		6.3279	
Panel B: Regressions							
$OCF\ Classification_i = a_0 + a_1\ DistressHi_i + a_2\ Equity\ Issues_i + a_3\ LeverageHi + a_4\ Profitability_i$							
$+ a_5\ Analysts\ Cash\ Flow\ Forecast_i + a_6\ Industry\ Homogeneity_i$							
$+ a_7\ Cross-listed\ in\ US_i + a_8\ Size_i + e_i$							
Dependent Variable		<i>OCF_Reported_t less</i> <i>OCF_Pro forma_USGAAP_t</i>			<i>Interest Paid in Financing</i>		
Number of firms $n = 538$	Expected Sign	Estimate	Std. Error	p -value	Estimate	Std. Error	p -value
<i>Intercept</i>		-0.4024	0.5978	0.5011	-122.0000	212.4000	0.5656
<i>Distress_Hi</i>	+	0.0028	0.0013	0.0156**	0.1535	0.3599	0.3349
<i>Equity Issues</i>	+	0.0049	0.0026	0.0297**	0.7526	0.7817	0.1678
<i>Leverage_Hi</i>	+	0.0017	0.0009	0.0245**	0.3661	0.2534	0.0743*
<i>Profitability</i>	?	-0.0173	0.0104	0.0478**	-0.6005	3.0771	0.8453
<i>Analysts Cash Flow Forecast</i>	?	0.0015	0.0013	0.1297	-0.1532	0.3710	0.6797
<i>Industry Homogeneity</i>	?	0.0058	0.0083	0.2416	1.7099	2.9559	0.5630
<i>Cross-listed in US</i>	-	0.0005	0.0018	0.7746	-0.8163	0.5666	0.0748*
<i>Size</i>	?	-0.0007	0.0003	0.0258**	0.0723	0.0907	0.4254
		F -value	4.19		Goodness of Fit	Chi-Square	p -value
		(p -value)	<0.0001		Likelihood		
		Adjusted R^2	0.1475		Ratio	71.5	0.0001
					Wald	51.1	0.0069

^a Sample excludes 99 firms that changed their classification choices during the period (2005 to 2012), firms from three countries with little variation in the classification of interest paid (Denmark, Finland, and Sweden), and firms missing data to compute all variables in regression

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. p -values are one-tailed for variables with directional hypotheses and two-tailed for all others. Standard errors are clustered by firm. Country controls and industry controls are included

Variable Definitions:

OCF_Reported_t less OCF_Pro forma_USGAAP_t = the average by firm of operating cash flows as reported by the firm for year t less operating cash flows for year t adjusted to include interest paid, interest received, and dividends received in operating cash flows if these items are not already reported in the operating section

Interest Paid in Financing = one if the firm classifies interest paid in financing cash flows as of the last year reported and zero otherwise

Distress_Hi = one if the firm's financial distress computed using Altman's Z-score is less than 1.81, indicative of high distress and zero otherwise

Equity Issues = percentage change in the firm's contributed capital over the sample period

Leverage_Hi = one if the firm's ratio of total liabilities over total assets at the beginning of the fiscal year, averaged over the sample period, is greater than the median and zero otherwise

Profitability = the firm's net income divided by beginning total assets, averaged over the sample period

Analysts Cash Flow Forecast = one if at least one analyst's cash flow forecast for the period is available on IBES and zero otherwise, averaged over the sample period

Industry Homogeneity = the percentage of firms within an industry that report interest paid in financing cash flows, with industry classifications based on Barth et al. (1998)

Cross-listed in US = one if the firm is cross-listed in the United States and zero otherwise

Size = the natural logarithm of the firm's beginning of year market capitalization in U.S. dollars, averaged over the sample period

Cross-listed in US is negative and significant, indicating that firms with cross-listings are more likely to follow the classification choices permitted for US firms. Specifically, US cross-listed firms in our sample classify interest paid under financing activities with 55.8% lower likelihood than non-US cross-listed firms.²⁸

Neither *Distress_Hi*, *Equity Issues*, *Profitability*, *Analysts Cash Flow Forecast*, *Industry Homogeneity*, *Size* nor any of the industry indicator variables (not tabulated) are statistically significant. Country indicator variables are all negative and significant with *p*-values lower than 0.01. The finding that country predicts classification choice while industry does not could reflect firms' view of their relevant peer group. Despite political and accounting-standard union, country membership dominates as a predictor of accounting choice within allowable alternatives.

4.2 Changes in OCF classification choices

In our sample, 99 firms, or 12%, reclassify interest paid, interest received, or dividends received within the statement of cash flows during the sample period. Table 7, panel A, shows that the 99 changers represent all countries except Portugal. The most changers were in the United Kingdom (24) and Germany (17), and the highest percentages of firms making a change (26%) were in Norway (11 of 43 firms) and Spain (15 of 58 firms). The majority of firms (58%) increase OCF in the year of the change, increasing OCF by 1.20% (0.78%) at the mean (median). Companies in all industries, except chemicals, made changes, with the greatest number in services (14) (not tabulated). Among the reclassifications affecting OCF, the greatest number move interest paid out of OCF. As shown in Table 7, panel B, the majority of these firms (49) changed OCF through reclassifying interest out of OCF.

²⁸ The estimated 44.2% increase and 55.8% decrease arise from $e^{0.3661} = 1.442$ and $e^{-0.8163} = 0.442$ in the probit regression in Panel B of Table 6, respectively.

Table 7 Description of firms changing classification of interest paid, interest received, or dividends received in the statement of cash flows**Panel A: Reclassifications by country, change in OCF, and percentage difference in operating cash flows in year of change**

Change in OCF Results in:	OCF-Increasing	No Change	OCF-Reducing	Total firms
Austria	2	0	1	3
Belgium	7	0	0	7
Denmark	0	0	1	1
Finland	0	1	0	1
France	7	0	2	9
Germany	11	4	2	17
Italy	3	0	0	3
Netherlands	4	0	2	6
Norway	8	1	2	11
Spain	5	5	5	15
Sweden	2	0	0	2
United Kingdom	<u>8</u>	<u>8</u>	<u>8</u>	<u>24</u>
Total	57 (58%)	19 (19%)	23 (23%)	99

Percentage difference in operating cash flows in year of change

Mean	0.0120	0	-0.0042	0.0060
Median	0.0078	0	-0.0021	0.0015

Panel B: Classification before and after change, by change in operating cash flow

	Interest Paid		Interest Received		Dividend Received	
	Firms	Percent	Firms	Percent	Firms	Percent
Into Operating	7	7%	16	16%	4	4%
Out of Operating	49	49%	27	37%	5	5%
No Change in Operating	<u>43</u>	<u>43%</u>	<u>56</u>	<u>57%</u>	<u>90</u>	<u>91%</u>
	99	100%	99	100%	99	100%

*, **, *** denote statistical significance of difference between firms that do not change classification and firms that change classification ("changer")

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

The various classification changes impact reported operating cash flow differently. To examine determinants of classification choice, we therefore focus only on the 57 firms that increased OCF by making the classification change. We compare the OCF-increasing changers to a control group of firms that did not make an OCF-increasing classification change and specifically nonchanging firms with existing classification choices that have not already maximized reported OCF. (OCF would be maximized by excluding interest paid from operating while including both interest received and dividends received in operating.) Thus we include the nonchanging firms facing a similar decision as the OCF-enhancing changers; that is, they face the possibility of increasing reported OCF by making a change in classification. This restriction left 109 firms, all of which are included as a control sample.

In the left side of Table 8, panel A, we compare the 57 OCF-increasing changer sample to itself over time—before and after the reclassification for

Table 8 Analyses of OCF-enhancing classification change on incentives and reporting environment

Panel A: Comparison of OCF-increasing firms (before and after change) with control sample						
Variable	OCF-increasing Changer (<i>n</i> = 57 firms)				Control (<i>n</i> = 109 firms)^b	
	Pre-Change		Post-Change^a		Mean	Median
	Mean	Median	Mean	Median		
<i>OCF_Reported_t</i> less						
<i>OCF_Pro forma_USGAAP_t</i> [*]	0.0008	0.0001	0.0118***	0.0081***	-0.0115	-0.0013***
<i>Interest Paid Reported in Financing</i>	0.0414	0	0.7716***	1***	0*	0**
<i>Distress_Hi</i>	0.4438	0.3333	0.4708	0.2857	0.3562	0.1250
<i>Equity Issues</i>	0.2500	0.1380	0.1236***	0.0734*	0.1673*	0.0926
<i>Leverage_Hi</i>	0.5263	1	0.5790	1	0.4954	0
<i>Profitability</i>	0.0587	0.0447	0.0316*	0.0405*	0.0457	0.0447
<i>Analysts Cash Flow Forecast</i>	0.2357	0	0.5937***	0.6667***	0.4791***	0.6000***
<i>Industry Homogeneity</i>	0.6901	0.6976	0.6901	0.6976	0.6975	0.7185
<i>Cross-listed in US</i>	0.0175	0	0.0175	0	0.0275	0*
<i>Size</i>	6.9109	6.6955	6.9597	6.6955	6.6029	zz6.123
Panel B: Dependent variable: OCF-increasing classification change						
<i>OCF-increasing ClassificationChange_i</i> = $a_0 + a_1 DistressHi_i + a_2 Equity Issues_i + a_3 LeverageHi_i$ $+ a_4 Profitability_i + a_5 Analysts Cash Flow Forecast_i$ $+ a_6 Industry Homogeneity_i + a_7 Cross-listed in US_i + a_8 Size_i + e_i$						
	Expected Sign	Estimate	Std. Error	<i>p</i>-value		
<i>(n</i> = 166 firms) ^c						
<i>Intercept</i>		10.3129	7.1011	0.1464		
<i>Distress_Hi</i>	+	0.7159	0.6742	0.1442		
<i>Equity Issues</i>	+	1.3219	0.9750	0.0876*		
<i>Leverage_Hi</i>	+	-0.2031	0.4951	0.3408		
<i>Profitability</i>	?	5.4415	3.4679	0.1166		
<i>Analysts Cash Flow Forecast</i>	?	-3.1941	0.8008	<.0001***		
<i>Industry Homogeneity</i>	?	-0.1657	0.0961	0.0847*		
<i>Cross-listed in US</i>	-	-2.7321	1.8925	0.0744*		
<i>Size</i>	?	0.1707	0.1985	0.3900		
		Goodness of Fit	Chi-Square	<i>p</i>-value		
		Likelihood Ratio	68.0	0.0001		
		Wald	31.7	0.3319		

^a Compares statistical significance of means and medians of pre-change and post-change variables

^b Compares statistical significance of means and medians of pre-change and control samples

^c Consists of 57 firms that made an OCF-increasing change and 109 firms that are not currently maximizing reported OCF but did not make a classification change

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. *p*-values are one-tailed for variables with directional hypotheses and two-tailed for all others. Standard errors are clustered by firm. Country controls and industry controls are included

Variable Definitions: *OCF-increasing classification change* = one if a firm made an OCF-increasing classification firm and zero otherwise. See Table 6 for the remaining variable definitions

variables similar to those in the cross-sectional regression. For variables created as averages over the sample period, averages are based on the periods before and after the reclassification. The significantly positive differences in the means and medians of the difference in OCF (reported minus pro forma) and interest paid reported in financing are a function of the criteria for inclusion as an OCF-increasing changer. In addition, we find that equity issues and analysts' forecast coverage are higher in the period after the change. The mean and median profitability of changers is significantly lower after the change.

On the right side of Table 8, panel A, we compare the 57 OCF-increasing changers to the control sample. We find significant differences in the means, medians or both of the difference in OCF (reported minus pro forma), interest paid reported in financing, equity issues, analysts' forecast coverage, cross-listed in the US, and industry.

Table 8, panel B, presents results of a logistic regression with the dependent variable *OCF-Increasing Classification Change* equal to one if the firm increased OCF by making a classification change and zero otherwise. Results indicate that firms with greater equity issuance are more likely to make OCF-increasing choices. Any valuation enhancement related to higher reported OCF would increase equity issuance proceeds, but the relation is not direct, particularly as equity issuance is measured historically. We find that analyst forecast coverage is negatively associated with changing, consistent with analysts' cash flow forecasts serving some deterrent role. Similarly, those firms that have greater industry homogeneity and are cross-listed in the US are less likely to make an OCF-increasing classification change. These firms appear to be responding to external forces to maintain current OCF reporting choices.

4.3 Additional analyses and variables

Data on auditors indicate that 88% of our full sample of 798 firms are audited by a Big Four auditor (Deloitte, Ernst & Young, KPMG, or PricewaterhouseCoopers). To consider the possibility that classification choice is driven by the auditor, we re-estimate our regressions including an indicator variable for each of these auditors. Results show that none of the indicator variables are significant (not tabulated). Thus we do not find evidence that classification choice is associated with auditor choice.

We also examine the effect of including the following other variables, but none are significant: credit risk, average market-to-book ratio, average returns, an indicator variable for earnings that are just positive, variability of OCF (computed as the standard deviation of the firm's OCF over the sample period), and capital intensity, which captures structure of operations and potential financing needs.

When we include only observations with interest paid located on the face of or in the footnotes to the financial statements (about 70% of the sample), regression results resemble the overall reported results.

We also reviewed the classification choices of a larger set of cross-listed firms to determine whether the results on the cross-listing variable are generalizable to a broader set of cross-listing firms. We collected data on 83 European Union cross-listed firms in 2006 (including some of the 40 cross-listed firms in our sample), and we find the

classification choice for interest paid resembles our overall sample: 78% reporting in operating and 22% in financing.

5 Results of consequences of flexibility in OCF classification

5.1 Market pricing of the persistence of cash flows

Results of the analysis comparing the persistence parameters for accruals and cash flow components of earnings are presented in Table 9. For both groups, accruals are significantly less persistent than operating cash flows, similar to findings of Sloan (1996) and Dechow et al. (2008). The lower persistence of accruals is indicated by the *FLEX* group's persistence parameter (i.e., forecasting coefficient) for accruals of 0.4302, compared to 0.6788 for operating cash flow (panel A). For the non-*FLEX* group, persistence parameters are 0.4339 and 0.6851 for accruals and operating cash flow, respectively (panel B).

The implications of the market-implied coefficients, however, differ for the two groups. The *FLEX* subsample's market-implied persistence of accruals (0.2325) is much lower than the persistence parameter (0.4302), and the market-implied persistence of cash flow (0.1922) is also much lower than the persistence parameter (0.6788), indicating underpricing of both components.²⁹ (Pincus et al. (2007) similarly find underweighting of both accruals and operating cash flows in four of the countries they study, two of which are European.) However, the *FLEX* subsample's market-implied persistence of accruals (0.2325) exceeds the market-implied persistence of operating cash flow (0.1922), indicating a higher pricing for accruals relative to cash flow.

In contrast, the non-*FLEX* subsample's market-implied persistence of accruals (0.4020) is roughly equivalent ($p = 0.6644$) to the persistence parameter of accruals (0.4339) in the forecasting equation, while the market-implied persistence of cash flow (0.4039) is lower than the persistence parameter (0.6851), indicating underpricing only of the cash flow component. (Pincus et al. (2007) similarly find underweighting of OCF but not accruals in eight of the countries they study, five of which are European.) Furthermore, the market-implied coefficient of accruals is also roughly equivalent to the market-implied coefficient of cash flow. In other words, unlike the *FLEX* subsample, the evidence does not reveal higher pricing for accruals relative to cash flow. Overall, these results could be interpreted to suggest that investors value accruals more highly than cash flow—but only for the *FLEX* subsample.

5.2 Models of OCF prediction

Table 10 presents regression results for two cash flow prediction models.³⁰ Analyses and inferences are based on prediction of OCF as reported on the statement of cash

²⁹ Untabulated analysis indicates similar underpricing of both components for the subsample of *FLEX* observations making OCF-increasing classification choices but not for the OCF-decreasing group.

³⁰ In the past sales model in Table 10, panel A, the number of observations in the regressions, 4,006, is lower than the 6,046 firm-year observations in the total sample due to inclusion of lagged variables and changes in the lagged variables.

Table 9 Simultaneous estimation of persistence parameters for accruals and operating cash flow and the parameters implied by stock returns, for subsamples making alternative classification choices

$$EARNINGS_{t+1} = \alpha_0 + \alpha_1 ACCR_Reported_t + \alpha_2 OCF_Reported_t + Controls_t + v_t$$

$$Returns_{t+1} = \beta \left(EARNINGS_{t+1} - \alpha_0^\# - \alpha_1^\# ACCR_Reported_t + \alpha_2^\# OCF_Reported_t + \phi Controls_t \right) + \varepsilon_t$$

Forecasting Coefficients		Valuation Coefficients		Test of market efficiency $a_i = a_i^\#$ Wald statistic (p -value)
Parameter	Coefficient estimate (standard error)	Parameter	Coefficient estimate (standard error)	
Panel A: FLEX = 1 (n = 1,425)				
a_1	0.4302 (0.0273)	$\alpha_1^\#$	0.2325 (0.1019)	3.5127 (0.0609)**
a_2	0.6788 (0.0259)	$\alpha_2^\#$	0.1922 (0.1062)	19.8111 (0.0000)***
		β	1.9164 (0.1862)	
<i>Controls</i> ^a	Yes	<i>Controls</i>	Yes	
Panel B: FLEX = 0 (n = 2581)				
a_1	0.4339 (0.0233)	$\alpha_1^\#$	0.4020 (0.0699)	0.1882 (0.6644)
a_2	0.6851 (0.0207)	$\alpha_2^\#$	0.4039 (0.0643)	17.3206 (0.0000)***
		β	2.1548 (0.1271)	
<i>Controls</i> ^a	Yes	<i>Controls</i>	Yes	

^a *Controls*_{*t*} Control variables included are: *Size*_{*t*}, *BM*_{*t*}, and *EP*_{*t*}

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. p -values are two-tailed

Variable Definitions:

$EARNINGS_{t+1}$ = net income for year t divided by average total assets for year t

$ACCR_Reported_t$ = the amount of accruals, calculated as net income less reported operating cash flows for year t divided by average total assets for year t

$OCF_Reported_t$ = the reported amount of operating cash flow for year t divided by average total assets for year t

$Returns_{t+1}$ = annual return computed 6 months after year end

$Size_t$ = the natural logarithm of the firm's market capitalization in U.S. dollars at the beginning of year t

BM_t = the firm's book-to-market ratio, calculated as the ratio of the firm's shareholders' equity divided by its market capitalization at the beginning of year t

EP_t = the firm's net income divided by its market capitalization at the beginning of year t

flows, not prediction of real economic OCF, which is unobservable. In panel A, operating cash flows are regressed on prior year's sales and change in sales. The coefficients on the interaction terms with sales and change in sales are both positive and significant, implying that the classification choices matter when predicting future OCF. The positive sign is consistent with OCF using IFRS classification choice being higher on average than OCF using U.S. GAAP classification choices. The estimated

Table 10 Regressions with reported future operating cash flows as dependent variable

	Estimate	Std. Error	p-value
Panel A: Regression of future operating cash flows on sales and change in sales			
$OCF_{t+1} = \gamma_0 + \gamma_1 I/TA_t + \gamma_2 S_t/TA_t + \gamma_3 FLEX \times S_t/TA_t + \gamma_4 \Delta S_t/TA_t + \gamma_5 FLEX \times \Delta S_t/TA_t + \gamma_6 FLEX + \gamma_7 Size_t + \gamma_8 BM_t + \gamma_9 EP_t + \varepsilon_{t+1}$			
(n = 4006 ^a)			
Intercept	0.0543	0.0180	0.0025***
I/TA _t	-0.3690	0.1158	0.0015***
S _t /TA _t	0.0963	0.0630	0.0634*
FLEX × S _t /TA _t	0.1307	0.0794	0.0998*
ΔS _t /TA _t	-0.0161	0.0552	0.7709
FLEX × ΔS _t /TA _t	0.0932	0.0660	0.0791*
FLEX	0.0267	0.0100	0.0077***
Size _t	0.0008	0.0005	0.0632*
BM _t	-0.0152	0.0012	<.0001***
EP _t	0.1309	0.0074	<.0001***
		F-value	15.88
		(p-value)	<0.0001
		R ²	0.1351
Panel B: Regression of future operating cash flows on current accruals and cash flows			
$OCF_{t+1} = \varphi_0 + \varphi_1 ACCR_Reported_t + \varphi_2 FLEX \times ACCR_Reported_t + \varphi_3 OCF_Reported_t + \varphi_4 FLEX \times OCF_Reported_t + \varphi_5 FLEX + \varphi_6 Size_t + \varphi_7 BM_t + \varphi_8 EP_t + \varepsilon_{t+1}$			
(n = 5128 ^a)			
Intercept	0.0251	0.0056	<.0001***
ACCR_Reported _t	0.2373	0.0165	<.0001***
FLEX × ACCR_Reported _t	0.0019	0.0164	0.9098
OCF_Reported _t	0.7809	0.0148	<.0001***
FLEX × OCF_Reported _t	0.0230	0.0191	0.2302
FLEX	-0.0019	0.0023	0.4236
Size _t	0.0007	0.0004	0.0906*
BM _t	-0.0015	0.0009	0.0935*
EP _t	0.0067	0.0058	0.2493
		F-value	141.21
		(p-value)	<0.0001
		R ²	0.5132

^a The number of observations is based on the availability of accounting and market data to compute variables, including lagged variables, in the model

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. p -values are two-tailed. Errors are clustered by firm. Regressions include country, industry, and year controls

Variable definitions:

I/TA_t = one divided by average total assets for year t

S_t/TA_t = sales revenue for year t divided by average total assets

$FLEX \times S_t/TA_t$ is the interaction between the indicator variable $FLEX$ and sales revenue for year t

$\Delta S_t/TA_t$ is change in annual sales revenue from year $t-1$ to year t divided by average total assets

$FLEX \times \Delta S_t/TA_t$ is the interaction between the indicator variable $FLEX$ and change in annual sales revenue for year t divided by average total assets

See Table 9 for remaining variable definitions

coefficient on sales is positive and significant as expected. However, the coefficient on changes in sales is not significant.

In the past cash flows and accruals models in Table 10, panel B, the *FLEX* interaction with OCF and accruals is not significant, indicating that the classification choices do not contribute to the prediction of future OCF in this model. This finding is consistent with past OCF and accruals also controlling for the firm's classification choices. Furthermore, this finding suggests that this type of model may be more useful in the international context in which flexibility in cash flow classification exists.

5.3 Additional analyses

Our market tests do not provide evidence consistent with the accrual anomaly. Pincus et al. (2007) provide evidence that the accrual anomaly occurs in common law countries and not code law countries. Given that code law countries comprise 12 of the 13 countries in our sample, this finding is consistent. In the United Kingdom, the only common law country in our sample, we also find no evidence of the accrual anomaly. We explore whether the results of our market tests are sensitive to model specification. We find that results of our market pricing analysis in Table 9 are sensitive to model specification.³¹ In particular, when the forecasting and valuation models exclude firm-specific control variables (*Size_{it}*, *BM_{it}*, and *EP_{it}*), the overall conclusions are similar for both subsamples. These conclusions, based on untabulated results excluding the control variables, are as follows. 1) Accruals are significantly less persistent than operating cash flows as in the base analysis. 2) The market-implied coefficients reflect underpricing of both accruals and operating cash flow as in the base analysis. 3) But the comparative magnitude of the market-implied coefficients shows no indication of the accrual anomaly (i.e., the coefficient on accruals does not exceed the coefficient on operating cash flow), regardless of the firm's cash-flow classification choice.

6 Conclusion

Cash flow, and particularly OCF, is used in business valuation and contracting. However, OCF can be measured differently under IFRS and U.S. GAAP because of classification alternatives available only under IFRS. While previous international accounting research focuses on IFRS versus U.S. GAAP differences in earnings and shareholders' equity, little attention has been given to potential differences in OCF under the two sets of standards.

Using an international setting, we build on and extend certain findings from the U.S.-only setting of Lee (2012). We find that firms with a higher likelihood of financial distress as well as those that issue more equity, have higher leverage, and are less profitable are more likely to make OCF-increasing classification choices. Our findings further suggest that cross-listed firms tend to make classification choices consistent

³¹ The exploration of the accrual anomaly for various subpopulations is an area for potential future research.

with U.S. GAAP. Firms are more likely to make OCF-increasing classification changes when they have issued equity and less likely to change when they are followed by analysts, have more peers making similar choices, and are cross-listed in the U.S. Overall, OCF-enhancing classification choices are associated with both financial and informational factors.

The flexibility under IFRS also has consequences. We provide evidence that the market's assessment of the persistence of OCF and accruals differs for groups of firms making different classification choices. However, our results are sensitive to model specification. We also show that results of certain OCF prediction models differ for firms making different classification choices. When OCF prediction is based on past sales, results differ for firms making alternative classification choices. However, when OCF prediction is based on past OCF and accruals, results do not differ significantly for firms making alternative classification choices, likely because past OCF and accruals also control for firms' classification choices. Overall, the consequences of classification choices, such as market reaction to OCF surprise/earnings surprise around earnings announcements, offer an avenue for future research.

Our paper contributes to the international accounting literature exploring the consequences of IFRS adoption and reporting. Given the recent adoption of IFRS in more than 120 countries and the consideration of IFRS by U.S. regulators, our evidence is important. Our results show that cash flow classification flexibility within IFRS creates a noncomparability that is absent under the more rigid requirements of U.S. GAAP. Flexibility in classification of cash flow items introduces potential noncomparability into measurement of widely used metrics, such as accruals and free cash flow. Understanding the impact of noncomparability under IFRS on such metrics will facilitate appropriate inferences from research incorporating these metrics.

Acknowledgements We thank seminar participants for comments received at Bocconi, Boston College, HEC Paris, Hong Kong University of Science and Technology, Keele University, London Business School, Oxford, Stockholm School of Economics, University of Virginia Darden School of Business, the 2013 American Accounting Association Annual Meeting, the 2013 European Accounting Association Annual Congress, the 2013 International Accounting Section Midyear Meeting, and the 2013 Joint Meeting of the Accounting Section of the German Academic Association for Business Research and the International Association for Accounting Education and Research. We gratefully acknowledge the comments of Mary Barth, Larry Brown, Giorgio Gotti, Bret Johnson, Chika Saka, and Ann Tarca, Stata assistance from Judson Caskey's website, and the research assistance of Jean Bradley, Byung Hoon Jin, Sung JinPark, Sam Liu, Troy Pollard, and Hakjoon Song.

Appendix

EXAMPLE OF EFFECTS OF RECLASSIFICATION ON OPERATING CASH FLOWS

Norse Energy Corp. ASA, a Norwegian gas explorer and producer, changed its classifications of interest paid and interest received in 2007. It changed its classification of interest paid to financing from operating. It changed its classification of interest

received to investing from operating. The net effect of these changes was to report positive, rather than negative, operating cash flows in both 2007 and 2008. The example below illustrates the computation of the net effect of the reclassifications.

Table 11 Norse Energy Corp.: Computation of the Net Effects of the Reclassifications

	As reported following 2007 reclassification		Adjustments, if no re-classification ^a		Pro forma if no reclassification	
	2008	2007	2008	2007	2008	2007
Operating	\$5.3	\$2.8	(\$13.7)	(\$14.4)	(\$8.4)	(\$11.6)
Investing	\$0.9	(\$56.8)	(\$9.0)	(\$3.5)	(\$8.1)	(\$60.3)
Financing	(\$16.6)	\$34.5	\$22.7	\$17.9	\$6.1	\$52.4
Total	(\$10.40)	(\$19.50)	\$0	\$0	(\$10.40)	(\$19.50)

^a The adjustments reverse the addition of interest received to investing and instead add it to operating. The adjustments also reverse the deduction of interest paid from financing and instead subtract it from operating

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