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Dividend Payouts and Information Shocks

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ABSTRACT

We examine changes in firms' dividend payouts following an exogenous shock to the information asymmetry problem between managers and investors. Agency theories predict a *decrease* in dividend payments to the extent that improved public information lowers managers' need to convey their commitment to avoid overinvestment via costly dividend payouts. Conversely, dividends could *increase* if minority investors are in a better position to extract cash dividends. We test these predictions by analyzing the dividend payment behavior of a global sample of firms around the mandatory adoption of IFRS and the initial enforcement of new insider trading laws. Both events serve as proxies for a general improvement of the information environment and, hence, the corporate governance structure in the economy. We find that, following the two events, firms are less likely to pay (increase) dividends, but more likely to cut (stop) such payments. The changes occur around the time of the informational shock, and only in countries and for firms subject to the regulatory change. They are more pronounced when the inherent agency issues or the informational shocks are stronger. We further find that the

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information content of dividends decreases after the events. The results highlight the importance of the agency costs of free cash flows (and changes therein) for shaping firms' payout policies.

1. Introduction

In perfect and complete financial markets, firm value is not affected by dividend policy (Miller and Modigliani [1961]). However, if markets are less than perfect, for instance, in the presence of asymmetric information, taxes, or incomplete contracts, dividend payouts can affect value. In this study, we focus on the role of cash dividends as a means for managers and controlling shareholders to mitigate information problems with minority investors. We examine whether a *change* in the information environment of the firm leads to *changes* in its dividend payouts. That is, we conduct a direct test of how the extent of the information asymmetry problem between managers and investors, which gives rise to agency cost-based incentives for free cash flow (FCF) disbursement and retention, shapes firms' dividend payout practices.[1]

The intuition behind our empirical predictions follows directly from the FCF-centric theories of dividend policy (see, e.g., Allen and Michaely [2003], or DeAngelo, DeAngelo, and Skinner [2008], for an overview). In a setting with information asymmetries, managers face the (time-varying) tradeoff between retaining FCF as a source of funds for future growth and disbursing FCF to mitigate investor concerns about overinvestment. On the one hand, managers want to refrain from paying dividends because internally generated funds provide a less costly, less risky source of capital than tapping into external capital markets (Myers and Majluf [1984]). This pecking order theory ties dividend payments to the firm's investment policy and life cycle (e.g., DeAngelo, DeAngelo, and Stulz [2006]). On the other hand, dividend payouts are used to reduce the agency costs of FCF and reassure minority investors of managers' ongoing commitment to make diligent use of firm resources and as a sign that they steer clear of overinvestment (e.g., Jensen [1986], Lang and Litzenberger [1989]). Such a commitment is especially valuable in light of future external capital needs. Similarly, minority shareholders could use their legal and market powers to force the firm to disgorge excess cash as dividends thereby reducing the risk of expropriation (e.g., La Porta et al. [2000], Shleifer and Wolfenzon [2002]).

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[1] In line with Bushman, Piotroski, and Smith [2004], the change to a firm's information environment can come through different channels, like improved disclosure rules, better information acquisition and dissemination by financial analysts, or more informative stock prices. The same goals can be reached via a tightening of investor protection, for example, by increasing managers' likelihood of being caught and fined for wrongdoing (Shleifer and Wolfenzon [2002]). This latter channel likely affects information asymmetry by lowering information risk. Our empirical setting does not allow us to disentangle the specific paths that lead to a reduction in information asymmetries and we generically label them "information shocks."

It follows that a change in the information asymmetry problem should lead to a change in firms' payout policy. Specifically, a richer common information environment with more precise and useful information and better corporate governance should mitigate part of the information asymmetry between managers and investors, which, in turn, affects the role of dividends. Lower information asymmetries reduce the pressure on managers to demonstrate commitment and communicate private information through costly dividend payouts. Thus, firms are expected to pay fewer dividends following the exogenous information shock, and dividend payments become less informative. Conversely, the reduction in information asymmetry could improve minority investors' monitoring capabilities and enable them to get their hands on a larger piece of the pie, that is, to successfully alleviate overinvestment and extract higher cash dividends from the firm.

In the present study, we empirically test the above predictions and examine whether the frequency of dividend payouts *increases* or *decreases* after an exogenous shock to the firm's information environment. To do so, we construct a large global data set with dividend payment information for firms from 49 countries over the 1993–2008 period. We focus on dividend payouts as firms' primary tool to mitigate agency problems of FCF, but at the same time control for other means of cash distribution, namely share repurchases. Using international data allows us to exploit the larger variation in information problems across countries, which, among other things, also reflects the institutional setup. In addition, we observe more exogenous shocks to firms' information environment, and these shocks are not necessarily aligned in time, which often is the case in single-country studies. This approach strengthens our identification strategy.

Specifically, we use two separate country-level events as proxies for a general improvement of the information environment in the economy. First, we consider the mandatory adoption of International Financial Reporting Standards (IFRS) that took place in the mid 2000s around the globe. Several studies have shown capital-market benefits, improvements of accounting properties, and positive effects on financial analysts' ability to forecast future performance around the time of mandatory IFRS adoption (e.g., Daske et al. [2008], Byard, Li, and Yu [2011], Landsman, Maydew, and Thornock [2012]).[2] Our second informational event is a country's initial enforcement of newly introduced insider trading (IT) laws. As Bhattacharya and Daouk [2002] have shown, it is the first prosecution, rather

[2] We do not stipulate that the improvement of firms' information environment is driven by the adoption of IFRS per se (as it has been shown that this is not necessarily the case; for example, Christensen, Hail, and Leuz [2013], Daske et al. [2013]). We, rather, use this event as proxy for generic changes in firms' information environment, including changes in corporate governance. In line with this argument and prior literature, we show that our results are (1) largely unchanged if we use another institutional change affecting firms' information environment that occurs at around the time of mandatory IFRS adoption, (2) stronger in the European Union, and (3) more pronounced around improvements of the general enforcement infrastructure. See also sections 4.2 and 4.4.

than the introduction of IT laws, that matters for capital market participants updating their priors. Consistently, evidence suggests that, following increases, analysts start forecasting a broader set of measures, financial reporting quality improves, and stock prices become more informative upon the restriction of IT (Bushman, Piotroski, and Smith [2005], Hail [2007], Fernandes and Ferreira [2009], Jayaraman [2012], Zhang and Zhang [2012]).[3] Thus, both events are associated with a general improvement of the information environment, which should reduce the information asymmetries between managers and investors. Moreover, because the events occur at the country level, they are largely exogenous to the individual firm.[4]

We start our analyses with descriptive evidence on firms' payout policies. For our global sample contained in Worldscope we find that the proportion of dividend paying firms decreases from about 78% to 56% over the 1993–2008 period. At the same time, the proportion of firms with share repurchases increases from 13% to 28%. In terms of nominal amounts, both aggregate dividend payments and share repurchases more than quadruple over time, suggesting that relatively fewer firms distribute more cash to their shareholders in the form of dividends (DeAngelo, DeAngelo, and Skinner [2004]). When we zoom in on the two informational events and distinguish between treatment and benchmark firms, a distinct pattern appears. While the proportion of dividend-paying firms after the IFRS mandate decreases sharply, the same number decreases only slightly and with a delay in countries with no change in accounting standards. At the same time, aggregate dividend payments continue to grow throughout, but less so and with a delay in IFRS countries. Similar trends appear around the first prosecution of IT laws.

To formally test the differential time-series among treatment and benchmark firms, we next conduct a difference-in-differences analysis, and estimate changes in the propensity of dividend payments following the two informational events using logit regressions. We find that, after the mandatory adoption of IFRS and the first enforcement of IT laws, firms are less likely to pay cash dividends and undertake fewer dividend-per-share increases (or dividend initiations) but more frequent dividend-per-share decreases (or stop paying dividends altogether). The magnitude of

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[3] The impact of IT on the information environment is not a priori clear. On the one hand, the presence of insiders can crowd out the information collection of outside investors. On the other hand, IT can contribute to the timely incorporation of new information into stock prices. Fernandes and Ferreira [2009] find that, in their global sample of firms, tightening IT laws improves the information environment via both more informative stock prices and increased public information collection.

[4] This assumption might not hold if, for instance, a firm decides to avoid IFRS reporting or IT enforcement by going private or moving the trading of its shares to an unregulated market. In addition, we conduct a falsification test in the spirit of Altonji, Elder, and Taber [2005]. That is, we show that observable local market and macroeconomic forces, which may influence the timing of the two informational events, do not explain the estimated treatment effects.

the changes is economically meaningful, and, evaluated at the means of the independent variables, amounts to a reduction in the propensity to pay dividends on the order of 9% (IFRS) to 11% (IT enforcement). This finding holds in the full sample, a constant sample, after including numerous controls like the use of share repurchases, the wedge between dividend and capital gains tax rates, or the proportion of retained earnings over total equity, as well as in a specification with firm-fixed effects. The finding also holds when we explicitly control for an alternative channel through which the information shock could affect dividend payouts, namely by lowering cost of capital and in turn transforming negative NPV projects into profitable ones.

In an attempt to assess our identification strategy, we show that the change in dividend-paying behavior starts around the time of the informational event, and is not present in countries that did not adopt IFRS or in which there was no change in IT enforcement over the sample period. The effect also does not extend to a subset of firms that presumably was already more transparent and, hence, less likely to rely on dividend payouts to mitigate agency problems, namely firms that voluntarily switched to IFRS before the mandate and firms cross-listed on a U.S. exchange.[5] Because dividend cuts are particularly costly (e.g., Brav et al. [2005]), we pick a random subset of firms pre- and post-IFRS adoption and examine in detail the reasoning management provides when reducing dividend payments. While current performance problems or future growth prospects are the primary justifications before the IFRS mandate (and remain important thereafter), management increasingly remains mum or nonspecific in the post-IFRS period. This behavior is consistent with information asymmetry playing a lesser role.

To further corroborate our main results, we next examine changes to the information content of dividend announcements. If dividends become less valuable because there exists more common information to begin with and because there is less of a need to show commitment via costly cash disbursements, we expect investors to make smaller revisions to their priors upon the release of the dividend signal. Results from OLS regressions support this argument and indicate a reduction in the three-day absolute abnormal returns around the announcement of dividends following the mandatory adoption of IFRS and the first enforcement of IT laws. The finding of lower information content applies to all dividend payments, and separately for dividend-per-share increases and decreases.[6] At the same time, it does not

[5] Note that, in line with Daske et al. [2013], we only find *no reduction* in dividend payouts for voluntary IFRS-adopting firms that were serious about changing to more transparent reporting at the time of the switch, but not for the rest of the voluntary IFRS firms.

[6] The reduction in information content is larger in magnitude for dividend decreases than increases (even though not statistically different). This asymmetric reaction is consistent with a Bayesian view that puts more weight on an (unexpected) increase in dividend payouts than an (expected) decrease after the information shock.

extend to the subset of voluntary IFRS firms and firms with a U.S. cross-listing (following our two information events), as one would expect if these firms already have more transparent reporting beforehand.

Finally, we provide cross-sectional evidence along the two dimensions "extent of the agency problem" and "strength of the information shock" in support of our main results. We find a more pronounced reduction in dividend payouts in code law countries, and for firms with substantial inside ownership or a history of tapping into external capital markets, consistent with the agency costs of FCF being more of a concern in these settings. Moreover, the results around mandatory IFRS adoption are stronger in the European Union (EU) when there is an improvement in the general enforcement infrastructure in a country (Christensen, Hail, and Leuz [2013]) and for firms that are serious about transparency around the mandate (Daske et al. [2013]). Following the initial enforcement of IT laws, the reduction in dividend payouts is more pronounced in emerging markets and for firms with increased analyst following and improved liquidity (Bushman, Piotroski, and Smith [2005], Fernandes and Ferreira [2009]).

Our study contributes to the literature in several ways. First, we show that an exogenous shock to the information environment affects firms' demand for and choice of dividends as a commitment device and information signal. This finding is relevant to the FCF-centric theories of dividend payouts that put the information asymmetry between managers and investors at the core of explaining why and when firms pay dividends. We show that reductions in the information asymmetry problem via more and better information about the firms in the economy lead to less reliance on dividend payments, consistent with lower agency costs of FCF. This finding extends the results of Dewenter and Warther [1998], who compare firms' dividend policies in settings with different levels of information asymmetries, namely the United States and Japan.

Second, the findings lend support to the idea that corporate insiders can retain more cash within the firm, which they otherwise would have paid out to show their commitment to shareholder interests. This insight is notably different from La Porta et al. [2000], who, in a specification in levels (instead of changes), find evidence of higher dividend payouts when investor protection is strong. Third, on a more descriptive level, we provide evidence that firms' payout policies, among other things, reflect a country's regulatory environment, including mandatory disclosure and reporting rules and corporate governance regulation. The results also illustrate that, in a global setting, dividend payments continue to play an important role in mitigating agency problems (e.g., Pinkowitz, Stulz, and Williamson [2006], Denis and Osobov [2008]). In that sense, dividend payments are likely to persist, even though share repurchases increasingly make up a larger fraction of total payouts in line with what we observe in the United States (e.g., Fama and French [2001], Skinner [2008]).

Finally, we contribute to the literature on the economic consequences of disclosure (see Leuz and Wysocki [2008] for an overview), and show that

changes in the general information environment have real consequences in terms of reducing the frequency and, in some instances, the amount of cash payouts to investors. This interpretation might help clarify prior evidence on the link between information quality and investment efficiency (e.g., Biddle, Hilary, and Verdi [2009]) in that better information not only mitigates overinvestment, but also increases the availability of cash (from dividends).

On a more cautionary note, we point out that, even though our evidence is consistent with information asymmetries and changes therein playing an important role for firms' payout policy, our setting does not allow us to identify the exact mechanisms through which these effects obtain (e.g., via better disclosures, improved information acquisition and dissemination, or tighter monitoring and prosecution in case of managerial wrongdoing). We also cannot preclude the possibility that alternative channels contribute to our findings (e.g., via expanded growth prospects from lower cost of capital). That said, all these channels originate from a reduction in information asymmetries between corporate insiders and outsiders, which is at the core of our conceptual argument and ultimately what our empirical evidence entails.

The remainder of the paper proceeds as follows. In section 2, we develop the hypotheses and discuss the related literature. In section 3, we outline the research design, describe the sample selection, and provide descriptive statistics. Section 4 contains the results of the propensity, information content, and cross-sectional analyses. Section 5 concludes.

2. *Hypothesis Development and Related Literature*

In a world with frictions like the presence of taxes, asymmetric information, or incomplete contracts, dividend payouts can affect firm value. In this study, we focus on the FCF-centric theories of dividend policy because they have been shown to be particularly descriptive of firms' observed dividend behavior and put much emphasis on the information asymmetry problem between managers and investors (see, e.g., Allen and Michaely [2003], or DeAngelo, DeAngelo, and Skinner [2008], for an overview).[7] Adding this information asymmetry to the frictionless world of Miller and Modigliani [1961] creates tension about the FCF of the firm.

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[7] Aside from the FCF theories, there exist other *information-based* explanations of firms' dividend policy. For instance, under signaling, managers use dividends as a signal to convey private information about their type to the market, a practice that lower quality firms find too costly to replicate (e.g., Bhattacharya [1979], Miller and Rock [1985], John and Williams [1985]). Yet, evidence on the empirical validity of the signaling models is decidedly mixed (e.g., Gonedes [1978], DeAngelo, DeAngelo, and Skinner [1996], Benartzi, Michaely, and Thaler [1997], Grullon, Michaely, and Swaminathan [2002]). Moreover, a model in which we interpret dividends as voluntary disclosures about the risky assets of the firm also predicts a declining use of dividends, the more is commonly known about the firm (e.g., Dye [1985], Jung and Kwon [1988], Verrecchia [1990]).

Under the pecking order theory, firms finance their positive net present value projects first with internal funds before tapping into the more costly debt and equity markets (Myers and Majluf [1984]). This prioritization of funding favors FCF retention and ties dividend payouts to firms' investment policy and life cycle (e.g., DeAngelo, DeAngelo, and Stulz [2006]). With ample investment opportunities (typical for young growth firms), managers are reluctant to use FCF for dividend distributions. If investment opportunities are limited (e.g., in mature, established firms), disgorging FCF to shareholders becomes more feasible. The availability of excess cash is where the agency costs of FCF come into play because managers have a tendency to overinvest by spending it on negative net present value projects (Jensen [1986]). One way of preventing this behavior is to reduce the cash under management's control, for example, via dividend payouts. The two opposing forces result in a (time-varying) tradeoff between FCF retention and disbursements that helps explain firms' actual dividend payment behavior. It follows that the extent of the information asymmetry problem might affect the timing and amount of dividends paid. Put differently, *changes* in the information asymmetry between managers and investors should lead to *changes* in firms' dividend policies.

However, the directional effect of a change in agency costs of FCF can be two-sided. On the one hand, managers have incentives to convey their good intentions to reduce overinvestment to capital markets, particularly in light of future capital needs. Here, dividends serve as a means of credibly conveying management's commitment, and a steady and predictable stream of dividend payments helps the firm build a favorable reputation in the marketplace or attract a certain investor clientele, like institutional investors with superior monitoring capacity (e.g., Dhaliwal, Erickson, Trezevant [1999], Allen, Bernardo, and Welch [2000]). After an exogenous improvement of the commonly available information (and hence a reduction in information asymmetry), there is less of a need for dividends to serve as a costly commitment and reputation device. Thus, the propensity of dividend payouts should go down (i.e., $\Delta Pr[\text{dividend payouts}] < 0$, where ΔPr stands for change in probability), and the announcement of dividends (specifically, the reduction of dividends) should be perceived as less of a news event. These effects should be stronger in countries with weak legal protection and for firms with ample growth opportunities, but limited FCF (La Porta et al. [2000]).[8]

Conversely, dividends can be interpreted as the outcome of the relative power between the principal and agent. In light of potential overinvestment by management, minority investors try to prevent or limit

[8] This relative argument implies that a reduction in information asymmetry has the biggest effects where the agency costs of FCF are high (e.g., Pinkowitz, Stulz, and Williamson [2006]). At the same time, it might be difficult to detect the effects of an information shock in a setting where the information environment is already strong (e.g., in the United States or for large, transparent firms).

misappropriation, for instance, by threatening to use their legal or market powers, thereby forcing companies to disgorge cash dividends.[9] After an exogenous shock to the information environment that improves minority investors' monitoring capabilities, they should be able to exert higher pressure on corporate insiders and, in turn, receive higher dividends, in particular, if firms lack alternative value-maximizing uses of cash (La Porta et al. [2000], Shleifer and Wolfenzon [2002]). Thus, we would expect firms to pay *more* dividends as a result of a shift in relative power (i.e., ΔPr [dividend payouts] > 0). At the same time, because investors value one dollar of dividends at a premium when their rights are little protected and they must fear substantial misappropriation (Lang and Litzenberger [1989], Pinkowitz, Stulz, and Williamson [2006]), any additional dollar of dividends is valued less when their monitoring ability improves. The effects should be particularly pronounced in countries and firms with weak shareholder protection and dim growth prospects (La Porta et al. [2000]).[10]

To sum up, based on the tradeoff between retaining and disbursing FCF, lower information asymmetry should lead to a change in dividend payouts, and the change is negative (positive) under what La Porta et al. [2000] call the "substitute model" ("outcome model") of agency. Empirically, we expect a lower (higher) propensity to pay dividends for firms subjected to the informational shock. Firms should be less (more) likely to initiate or increase dividend-per-share payouts, and more (less) likely to cease or cut such payments. In both cases, the information content of dividend announcements is expected to be lower.

Finally, we briefly discuss the consequences that an information shock might have on firms with an already better than average information environment. If investors can sufficiently monitor managers because the firm's disclosures are transparent enough a priori, the role of dividends as a means of mitigating agency costs is diminished, and the exogenous shock should have little or no effect. For instance, non-U.S. firms whose shares are cross-listed on a U.S. exchange are subject to extensive filing requirements with the U.S. Securities and Exchange Commission and to market pressures by financial analysts and the media. This can lead to substantial capital market benefits due to lower information asymmetry (e.g., Doidge, Karolyi, and Stulz [2004], Bailey, Karolyi, and Salva [2006], Hail and Leuz [2009]). Similarly, the voluntary adoption of IFRS has been shown, under certain circumstances, to stand for an improvement in a firm's transparency (e.g., Barth,

[9] They can do so, for example, by voting against unwanted directors, supporting hostile takeover bids, suing the company, lobbying for stringent regulation, or voting with their feet.

[10] This cross-sectional prediction assumes a minimal level of enforcement, legal protection, or market pressure. Absent such mechanisms, one could argue that, even though more visible, corporate insiders do not have to fear substantive repercussions and will continue to misappropriate as before. In that case, the outcome of higher dividend payments should be more pronounced in countries and firms with strong investor protection (for which better monitoring can actually prompt real consequences).

Landsman, and Lang [2008], Daske et al. [2013]). For these types of firms, a general improvement of the information environment likely has no effect at all (and hence we utilize them in some of our tests as counterfactual).

The FCF-based theories of dividend payouts have received ample attention in the literature. For instance, Lang and Litzenberger [1989] find that market reactions to dividend changes are substantially larger for firms that most likely suffer from overinvestment problems. Along the same lines, DeAngelo, DeAngelo, and Stulz [2006] for U.S. firms and Denis and Osobov [2008] for firms in six developed markets find that dividend payouts are concentrated among the largest, most profitable firms, with retained earnings comprising a large fraction of total equity. They conclude that these are the firms most likely to suffer from overinvestment issues.[11] Probably most related in spirit to our study, Dewenter and Warther [1998] compare dividend policies in the United States and Japan. They show that Japanese *keiretsu* firms face fewer agency conflicts than U.S. firms. Consequently, Japanese firms experience smaller stock price reactions to dividend omissions and initiations, are less reluctant to stop or cut dividend payouts, and their dividends are more responsive to earnings changes. However, all of the above studies compare the level of information asymmetry across firms and countries instead of changes therein.

In an important study for our setting, La Porta et al. [2000] directly test the outcome model versus the substitute model. Using a large international sample of nonfinancial firms in 1994, they find that, in strong investor protection countries (i.e., common law countries and countries with high antidirector rights index values), firms distribute a larger proportion of earnings as dividends than when investor protection is weak, in particular, if they face dim growth prospects. They therefore dismiss the substitute model. However, Pinkowitz, Stulz, and Williamson [2006] show a weaker relation between dividends and firm value in countries with strong investor protection, consistent with both the outcome model (i.e., the marginal value of each additional dollar disbursed declines) and the substitute model (i.e., the benefits of paying dividends are larger with weak investor protection). Similarly, it has been shown that a firm's dividend policy can attract specific clienteles like institutional investors (e.g., Allen, Bernardo, and Welch [2000]) and proxies for superior earnings quality (Skinner and Soltes [2011]). Thus, it possesses some of the key features of a voluntary commitment device as stipulated under the substitute model.

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[11] Large firms are less likely to suffer from information asymmetries because they tend to be more transparent to begin with. However, in line with Denis and Osobov [2008], we find that the proportion of dividend-paying firms (outside the United States) is sufficiently large to allow for ample variation in information asymmetries and agency costs of FCF. Moreover, the *level* of information asymmetries likely varies substantially across our international sample (e.g., Leuz, Nanda, and Wysocki [2003]) thereby adding to the power of our tests.

3. Research Design and Data

In this section, we describe our empirical identification strategy and develop the regression models to test our main predictions regarding a firm's frequency and information content of dividend payouts. We then discuss the sample selection and variable construction and provide descriptive statistics on payout policies in our global sample.

3.1 EMPIRICAL MODEL AND IDENTIFICATION STRATEGY

We examine the impact of an informational shock on dividend payouts using a large panel data set with yearly firm-level observations from 49 countries around the world. Specifically, we investigate whether (1) the propensity of firms to pay dividends, and (2) the information content of dividend announcements *change* surrounding significant improvements in the information environment for the average firm in the economy. For the propensity analyses, we estimate the following logit regression model:

$$Pr(\textit{Dividend Payments}) = \beta_0 + \beta_1\, \textit{InfoEvent} + \sum \beta_j\, \textit{Controls}_j + \sum \beta_i\, \textit{Fixed Effects}_i + \varepsilon. \quad (1)$$

The dependent variable, *Dividend Payments*, is a binary indicator variable marking positive dividends per share (set equal to "1"). In years without dividend payments or in case of missing data, we set this variable to "0."[12] In some of the analyses, we replace the dividend payments variable with indicators for annual increases (decreases) in dividends, measured as the year-to-year change in the dividends per share item in Worldscope (field 05101).

Our main variable of interest is the difference-in-differences estimator *InfoEvent*. This variable takes on the value of "1" for all firm-years subjected to the informational shock and "0" otherwise. We use two exogenous country-level events to proxy for a general improvement of the information environment in an economy and hence a reduction in the information asymmetry problem, namely the mandatory adoption of IFRS and the first prosecution under newly introduced IT laws.[13] The first event led to harmonized accounting standards that, compared to many local GAAPs, are more capital-market oriented and provide more extensive measurement and disclosure rules (e.g., Ding et al. [2007], Bae, Tan, and Welker [2008]). Consistent

[12] To assure that this research design choice does not bias our data, we re-estimate the analyses after dropping firm-years without dividend data. The results are largely the same and none of our inferences change.

[13] Note that we do not stipulate that either IFRS adoption or IT enforcement per se leads to an improvement in the information environment, but, rather, that these events serve as proxies for country-level (regulatory) changes in the information environment and corporate governance structure at around the time the two events took place.

with this notion, several studies have shown that mandatory IFRS adoption is associated with capital-market benefits, improvements of accounting properties, and positive effects on analysts' ability to forecast future earnings (e.g., Daske et al. [2008], Byard, Li, and Yu [2011], Landsman, Maydew, and Thornock [2012]). These effects are particularly pronounced in the European Union, around changes in enforcement (Christensen, Hail, and Leuz [2013]), and for firms with strong incentives to improve reporting transparency (Daske et al. [2013]). The second event follows from the finding in Bhattacharya and Daouk [2002] that it is the first prosecution, rather than the introduction of IT laws, that matters for capital market participants updating their priors. Consistently, evidence suggests that analyst following increases, analysts start forecasting a broader set of measures, financial reporting quality improves, and share prices become more informative upon the restriction of IT (Bushman, Piotroski, and Smith [2005], Hail [2007], Fernandes and Ferreira [2009], Jayaraman [2012], Zhang and Zhang [2012]).[14] For both informational events, we predict that they are followed by a change in the frequency of dividend payouts ($\beta_1 \neq 0$). The change is predicted to be negative ($\beta_1 < 0$) under the substitute model and positive ($\beta_1 > 0$) under the outcome model of agency.[15]

The model in equation (1) includes a comprehensive set of firm-level $Controls_j$ (see section 3.2) and $Fixed\ Effects_i$. These variables are important because a firm's dividend policy also reflects such factors as cash constraints, investment opportunities, accounting profitability, stock price performance, payout history, or alternative payout mechanisms. In our main specification, we include country, one-digit SIC industry, and year-fixed effects, which control for time-invariant unobserved correlated variables along those three dimensions (e.g., country-specific payout restrictions or general trends in dividend payouts over time). As both mandatory IFRS adoption and IT enforcement are regulatory initiatives on the country level, we draw statistical inferences based on standard errors clustered by country.[16]

For our tests of whether the information content of dividends changes after the two events, we build on equation (1) and estimate the following

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[14] IT by itself can be informative to the market and, hence, stricter limits on IT could lead to less (and not more) informative stock prices. Consistent with this idea, Fernandes and Ferreira [2009] show that, in emerging markets, stock price informativeness does not change after the first prosecution of IT laws while it improves in developed markets. Yet, they still find an overall improvement of the general information environment in emerging markets because formerly private information entered the public domain.

[15] We address concerns that our informational events are systematically linked to firms' payout policy (e.g., via IFRS restrictions on dividend payouts) in section 4.2. See also table A1 in the appendix.

[16] We also provide results using firm-fixed effects in the robustness tests. Furthermore, the results remain largely unaffected and none of the inferences change if we double-cluster the standard errors by country and year.

OLS regression model:

$$CAR(Div.\ Announcement) = \alpha_0 + \alpha_1\, InfoEvent + \sum \alpha_j\, Controls_j + \sum \alpha_i\, Fixed\ Effects_i + \nu. \quad (2)$$

We use three-day *Dividend Announcement Returns* as the dependent variable, and compute them as the absolute value of the cumulative abnormal returns around the declaration date of firms' annual dividend per share. Abnormal returns are equal to the daily raw returns of a firm's share minus the returns on the local market index.[17] The definition of *InfoEvent* remains the same. We expect that, if the information shock affects payout policy, it should also have an effect on the information content of dividends ($\alpha_1 \neq 0$). Specifically, dividend announcements should become less informative ($\alpha_1 < 0$) when the agency costs of FCF go down. We use a different set of firm-level $Controls_j$ in the information content analysis (see section 3.2) because the main concern here is the effect of confounding events like earnings announcements or the magnitude of the change in dividends and earnings. The model in equation (2) again includes country, industry, and year $Fixed\ Effects_i$, and we employ country-clustered standard errors.

3.2 SAMPLE AND VARIABLE DESCRIPTION

Our total sample comprises all firm-year observations between 1993 and 2008 for which we have sufficient Worldscope and Datastream data to estimate our base regressions in equation (1). We start in 1993 because, before that year, no reliable dividend data are available in Worldscope. We limit the sample to countries with at least 10 dividend-per-share observations and firms with total assets larger than US $10 million.[18] This selection procedure leaves us with a maximum of 222,766 firm-year observations from 49 countries. For our analyses, we split the overall sample into

[17] Even though our predictions conceptually are not tied to absolute announcement returns but also apply to signed returns, the former likely offer better identification and more powerful tests. First, empirically, good news announcements and bad news announcements offset each other, leading to opposing predictions for the α_1 coefficient on *InfoEvent*. Second, the distinction between good news and bad news announcements is not straightforward and does not map one-to-one into dividend increases and decreases. For instance, a dividend cut resulting from an increase in investment opportunities might be perceived as good instead of bad news. In line with these arguments, we find that, in the pre and post periods around our two events, mean signed returns are always smaller than mean absolute returns (consistent with good and bad news offsetting each other), and mean signed returns are generally positive around both the announcement of dividend increases and decreases (consistent with the two events, on average, conveying good news to the markets).

[18] We further exclude firms that voluntarily adopted IFRS before the mandate or whose shares are cross-listed on a U.S. exchange from the base sample, but use them as counterfactual firms (i.e., firms that are not directly affected by the two information events) in the robustness tests.

two (partially overlapping) subsamples, one for each informational event. That is, we test for the effects around mandatory IFRS adoption employing all firm-years over the 2001 to 2008 period (N_{max} = 147,430). In the IT enforcement analyses we consider the 1993–2004 firm-years (N_{max} = 143,957), and hence explicitly exclude observations following the IFRS mandate.

Table 1 provides a breakdown of the total sample and shows the number of unique firms and firm-years by country and year. It also contains information on the number of dividend payments, increases, and decreases. The latter two numbers include the initiation and cessation of dividend payouts. As panel A shows, dividend payments are fairly common around the globe. In 62% of the years, firms paid out a dividend ranging from a high of 85% in Chile to a low of 30% in Poland. In all but one country (China), firms are more likely to raise than to cut dividends per share, confirming managers' reluctance to cut dividends, in particular in the United States (e.g., Brav et al. [2005], DeAngelo, DeAngelo, and Skinner [2008]), and suggesting that a firm's payout history is an important determinant of dividend policy.[19] Panel A also lists the year of the IFRS mandate (Daske et al. [2008]) and when the first IT enforcement took place (Bhattacharya and Daouk [2002]).[20]

Panel B shows the general trend in dividend payments over time. The number of dividend payments, dividend increases, or dividend decreases goes down over the sample period. Even so, more than half of the firms continue to pay dividends at the end of the sample period. This is remarkable because 2008 coincides with the beginning of the global financial crisis, which likely contributed to the unusually low number of dividend increases and the unusually high number of dividend cuts in that year. The negative time trend becomes even more obvious in figure 1, panel A, in which we plot the proportion of dividend-paying firms from 1993 to 2008. From 2002 on, the downward trend came to a halt, and there was no further reduction in firms that paid a dividend. The graph also shows that,

[19] The reluctance to cut dividends has the following implications for our tests: (1) the perceived benefits of cutting dividends have to be substantive enough to outweigh the implied costs. (2) The benefits can stem from different channels, for example, from lower agency costs of FCF or expanded growth prospects following a reduction in cost of capital. (3) The reluctance to cut dividends could be more pronounced in the United States than elsewhere (see also table 1, panel A). This special role of the United States implies that other reasons for cutting dividends (like expanded growth prospects) are not or are only weakly related to dividend cuts. Consistently, in sensitivity analyses not tabulated, we find no association between growth prospects (measured by Tobin's *q*) and dividend cuts (measured by negative values of Δ *Dividend per Share*) in the United States, but do find a significantly negative relation in our non-U.S. data. Thus, while this observed management behavior might make it harder for us to find results, it seems to be less of a concern in a cross-country setting.

[20] When coding the *InfoEvent* indicator, we use December 31 of the mandatory IFRS year as a cutoff for firms' fiscal year end. For IT enforcement, we assign it to "1" in the year the first prosecution took place in a country. Because we do not have the exact enforcement date, we assess this research design choice in section 4.2.

TABLE 1

Sample Composition by Country and Year

Panel A: Number of observations, dividend payment behavior, and institutional variables by country

Country	Unique Firms	Firm-Years	Dividend Payments		Dividend Increases		Dividend Decreases		Mandatory IFRS Adoption	Insider Trading Enforcement
			N	%	*N*	%	*N*	%		
Argentina	63	476	198	41.6	133	27.9	100	21.0	n.a.	1995
Australia	1,410	6,627	3,949	59.6	2,966	44.8	1,169	17.6	2005	1996
Austria	49	213	158	74.2	107	50.2	59	27.7	2005	n.a.
Belgium	138	732	543	74.2	424	57.9	147	20.1	2005	1994
Bermuda	54	226	146	64.6	96	42.5	47	20.8	n.a.	n.a.
Brazil	283	1,578	1,102	69.8	655	41.5	501	31.7	n.a.	Before 1993
Canada	1,544	7,356	2,874	39.1	1,945	26.4	946	12.9	n.a.	Before 1993
Chile	166	1,308	1,117	85.4	688	52.6	451	34.5	n.a.	1996
China	1,517	7,482	3,502	46.8	2,098	28.0	2,240	29.9	n.a.	n.a.
Colombia	37	230	177	77.0	137	59.6	35	15.2	n.a.	n.a.
Czech Republic	49	164	73	44.5	42	25.6	33	20.1	2005	1993
Denmark	206	1,929	1,374	71.2	757	39.2	359	18.6	2005	1996
Egypt	58	266	175	65.8	110	41.4	55	20.7	n.a.	n.a.
Finland	129	879	689	78.4	425	48.4	296	33.7	2005	1993
France	830	4,338	2,819	65.0	1,952	45.0	961	22.2	2005	Before 1993
Germany	611	2,686	1,379	51.3	857	31.9	621	23.1	2005	1995
Greece	330	1,987	1,202	60.5	759	38.2	607	30.5	2005	1996
Hong Kong	916	6,651	4,093	61.5	2,625	39.5	1,807	27.2	2005	1994
Hungary	26	96	43	44.8	27	28.1	18	18.8	2005	1995
India	886	4,715	3,829	81.2	2,373	50.3	842	17.9	n.a.	1998
Indonesia	330	2,238	1,156	51.7	700	31.3	552	24.7	n.a.	1996
Ireland	73	356	212	59.6	175	49.2	50	14.0	2005	n.a.
Israel	182	1,003	384	38.3	251	25.0	186	18.5	2008	Before 1993
Italy	123	607	384	63.3	253	41.7	173	28.5	2005	1996

(*Continued*)

TABLE 1—*Continued*

Panel A: Number of observations, dividend payment behavior, and institutional variables by country

Country	Unique Firms	Firm-Years	Dividend Payments		Dividend Increases		Dividend Decreases		Mandatory IFRS Adoption	Insider Trading Enforcement
			N	%	*N*	%	*N*	%		
Japan	4,404	44,048	37,283	84.6	12,803	29.1	5,638	12.8	n.a.	Before 1993
Korea (South)	1,170	7,200	4,476	62.2	2,336	32.4	1,558	21.6	n.a.	Before 1993
Luxembourg	24	136	102	75.0	85	62.5	20	14.7	2005	n.a.
Malaysia	1,044	7,910	5,304	67.1	3,261	41.2	2,466	31.2	n.a.	1996
Mexico	114	769	365	47.5	270	35.1	125	16.3	n.a.	n.a.
The Netherlands	173	1,020	712	69.8	480	47.1	254	24.9	2005	1994
New Zealand	134	820	639	77.9	431	52.6	222	27.1	2007	n.a.
Norway	241	1,592	923	58.0	599	37.6	314	19.7	2005	Before 1993
Pakistan	112	782	507	64.8	333	42.6	190	24.3	2007	n.a.
Peru	67	256	115	44.9	79	30.9	56	21.9	n.a.	1994
Philippines	186	1,275	555	43.5	376	29.5	235	18.4	2005	n.a.
Poland	243	1,006	306	30.4	198	19.7	162	16.1	2005	1993
Portugal	62	349	192	55.0	127	36.4	79	22.6	2005	n.a.
Russian Federation	89	237	143	60.3	108	45.6	41	17.3	n.a.	n.a.
Singapore	631	4,311	3,134	72.7	1,880	43.6	1,485	34.4	2003	Before 1993
South Africa	445	2,640	1,904	72.1	1,505	57.0	499	18.9	2005	n.a.
Spain	167	1,037	756	72.9	573	55.3	220	21.2	2005	1998
Sri Lanka	34	252	212	84.1	153	60.7	54	21.4	n.a.	1996
Sweden	376	2,585	1,653	63.9	1,222	47.3	364	14.1	2005	Before 1993
Switzerland	132	1,187	933	78.6	543	45.7	214	18.0	2005	1995
Taiwan	1,283	7,897	4,453	56.4	2,878	36.4	2,008	25.4	n.a.	Before 1993
Thailand	524	3,965	2,665	67.2	1,481	37.4	1,234	31.1	n.a.	1993
Turkey	159	1,020	375	36.8	226	22.2	220	21.6	2006	1996
United Kingdom	2,178	14,329	10,693	74.6	8,701	60.7	2,372	16.6	2005	Before 1993
United States	8,529	62,000	27,422	44.2	21,310	34.4	6,004	9.7	n.a.	Before 1993
Total	32,531	222,766	137,400	61.7	82,513	37.0	38,289	17.2		

(*Continued*)

TABLE 1—*Continued*

Panel B: Number of observations and dividend payment behavior by year

		Dividend Payments		Dividend Increases		Dividend Decreases	
Year	Firm-Years	*N*	%	*N*	%	*N*	%
1993	5,642	4,383	77.7	2,392	42.4	1,164	20.6
1994	6,358	4,859	76.4	2,823	44.4	1,173	18.4
1995	7,620	5,394	70.8	3,248	42.6	1,225	16.1
1996	8,978	6,142	68.4	3,711	41.3	1,506	16.8
1997	9,704	6,353	65.5	3,771	38.9	1,701	17.5
1998	10,562	6,611	62.6	3,712	35.1	1,979	18.7
1999	12,550	7,598	60.5	4,256	33.9	2,190	17.5
2000	13,922	8,686	62.4	5,057	36.3	2,393	17.2
2001	15,288	9,039	59.1	5,002	32.7	3,039	19.9
2002	17,244	9,818	56.9	5,445	31.6	3,554	20.6
2003	17,734	10,344	58.3	6,412	36.2	2,764	15.6
2004	18,355	11,248	61.3	7,474	40.7	2,514	13.7
2005	18,976	11,759	62.0	7,741	40.8	2,943	15.5
2006	20,241	12,234	60.4	8,076	39.9	3,009	14.9
2007	21,119	12,657	59.9	8,155	38.6	3,139	14.9
2008	18,473	10,275	55.6	5,238	28.4	3,996	21.6
Total	222,766	137,400	61.7	82,513	37.0	38,289	17.2

The sample comprises a maximum of 222,766 firm-year observations from 49 countries between 1993 and 2008, for which we have sufficient Worldscope and Datastream data to estimate our base regressions (see table 3). We require firms to have total assets of US $10 million, and limit the sample to countries with at least 10 dividend-per-share observations. We further eliminate firms that voluntarily adopted IFRS before the mandate, or whose shares are cross-listed on a U.S. exchange. The table reports the total number of unique firms as well as the number of firm-years and percentages by country (panel A) and year (panel B) for the following cases: (1) firm-years with dividend payments measured using the dividends-per-share item in Worldscope (field 05101), (2) firm-years with increases in dividends per share relative to the prior period (including the initiation of dividend payments), and (3) firm-years with decreases in dividends per share relative to the prior period (including the cessation of dividend payments). Panel A also lists the year of the significant changes in firms' information environment: (1) when IFRS reporting became mandatory in a country (Daske et al. [2008]), and (2) when the first prosecution under insider trading laws took place in a country (Bhattacharya and Daouk [2002]). In those two columns "n.a." denotes that the informational event does not apply during our sample period.

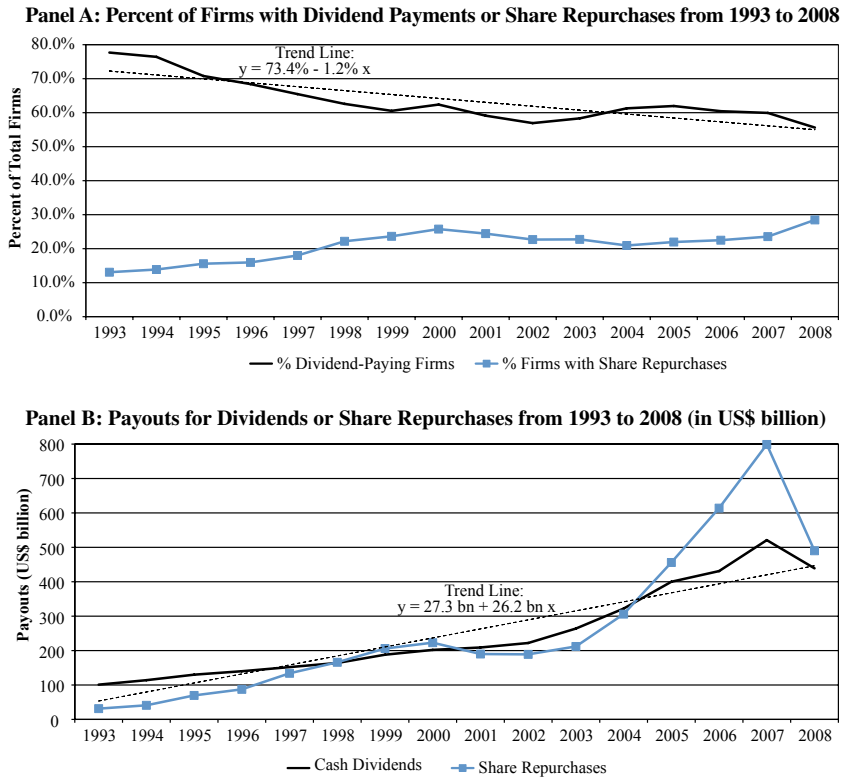

FIG. 1.—Proportion of dividend-paying firms and dividend payouts over time. The figure plots the time-series of the percentage of firms with dividend payments or share repurchases (panel A) and the corresponding aggregate U.S. dollars amounts (panel B). The sample comprises all firm-year observations from 49 countries over the 1993–2008 period with dividend and control variable data available (see table 1). We also plot a linear trend line for the dividend payments. We measure dividend payments using the dividends-per-share item (field 05101), and use the common dividend declared (field 18192) to measure the aggregate amounts. We compute share repurchases as the (positive) amount of funds used to decrease the number of shares outstanding (field 04751), net of any yearly changes in preferred stock (field 03451). All data are from Worldscope.

internationally, share repurchases became more popular over time, but never reached the same level as in the United States (Fama and French [2001]).[21] The proportion of firms with share repurchases increases from

[21] Our dividend and share repurchase data are from Worldscope (see notes to figure 1). To gauge the data quality, we compare our numbers in the United States to other studies using data from Compustat (e.g., Floyd, Li, and Skinner [2013]). We find that coverage in the United States is more extensive in Compustat than Worldscope, leading to different levels of the proportion of firms with dividends and share repurchases (higher in Worldscope, and more so for repurchases). However, both data sources display almost identical time trends. When we repeat the analyses with share repurchase data from (1) SDC Platinum,

13% to 28% by the end of the sample period. In terms of nominal amounts, a different picture appears. As panel B of figure 1 illustrates, both aggregate dividend payments and share repurchases surged substantially over time. The two graphs taken together suggest that relatively fewer firms disbursed increasingly larger cash amounts to shareholders (DeAngelo, DeAngelo, and Skinner [2004]). These time-series trends in the data underscore the importance of our difference-in-differences design.

In table 2, we present descriptive statistics for the variables used in the regression analyses. In equation (1), the propensity model, we include various control variables for size, growth, and profitability (e.g., Fama and French [2001], Grullon and Michaely [2002], DeAngelo, DeAngelo, and Stulz [2006]): *Total Assets* is a proxy for firm size and maturity. Larger, more mature firms are more likely to pay dividends. The *Market-to-Book* ratio serves as a proxy for growth opportunities and indicates the need for firms to retain cash. We expect a negative sign. We expect more profitable firms, measured with *Return on Assets*, to be more likely to pay dividends. The annual buy-and-hold *Stock Return* measures market performance, and we expect a positive sign. *Negative Earnings* stands for an operating loss in a given year, rendering the payment of dividends less likely. We further include financial *Leverage* as a proxy for a firm's capital structure and interest payments, but also for potential agency conflicts. Both suggest a negative sign. In line with Chay and Suh [2009], we include *Return Variability*, measured as the annual standard deviation of daily stock returns, as a proxy for firms' cash-flow uncertainty. Firms with higher stock volatility are less likely to pay dividends, fearing future cash shortfalls. Finally, we account for a firm's payout history and include the lagged *Dividend Payments* indicator as well as a binary indicator for *Share Repurchases* in the model. For both variables, we expect a positive sign. Dividend payouts are sticky and share repurchases often serve to complement dividend payments (Fama and French [2001], Skinner [2008]).

In equation (2), the information content model, the following control variables are included (e.g., Yoon and Starks [1995], Braggion and Moore [2011]): an *Overlap with Earnings Announcement* indicator, which takes on the value of "1" if the earnings announcement occurs within five days of the dividend announcement. If so, the coefficient should be positive. Δ *Dividend per Share* and Δ *Earnings per Share* are the year-to-year changes in dividends and earnings per share, and capture the news effect.[22] We also

(2) Compustat, or (3) using the change in treasury stock from Worldscope (Fama and French [2001]), the results are very similar and none of the inferences change.

[22] We scale Δ *Dividend per Share* and Δ *Earnings per Share* by price at the end of the fiscal year, but obtain very similar results when using percentage changes or assets per share as a deflator. Furthermore, when we condition the information content analyses on the magnitude of the change in dividends (i.e., add an interaction term of *InfoEvent* with Δ *Dividend per Share* to the model), the results remain largely unaffected.

TABLE 2

Descriptive Statistics for Variables Used in the Regression Analyses

	N	Mean	Std. Dev.	P1	P25	Median	P75	P99
Dependent Variables:								
Dividend Payments (Indicator)	222,766	0.617	0.486					
Dividend Increases (Indicator)	222,766	0.370	0.483					
Dividend Decreases (Indicator)	222,766	0.172	0.377					
Dividend Announcement Returns (3 Days)	97,196	0.036	0.037	0.000	0.010	0.024	0.048	0.176
Control Variables:								
Share Repurchases (Indicator)	222,766	0.222	0.415					
Log *(Total Assets)* (US$ thousand)	222,766	12.564	1.834	9.389	11.238	12.364	13.637	17.614
Market-to-Book (Ratio)	222,766	2.093	2.380	0.297	0.861	1.433	2.403	13.503
Leverage (Ratio)	222,766	0.227	0.190	0.000	0.055	0.200	0.357	0.727
Return on Assets (Ratio)	222,766	0.043	0.102	−0.367	0.010	0.043	0.093	0.266
Return Variability (Std. Dev.)	222,766	2.649	1.136	0.767	1.802	2.465	3.328	5.912
Stock Return (Ratio)	222,766	0.174	0.628	−0.754	−0.190	0.055	0.366	2.753
Negative Earnings (Indicator)	222,766	0.184	0.388					
Overlap with Earnings Announcement (Indicator)	97,196	0.220	0.414					
Δ *Dividend per Share* (Ratio)	97,196	0.002	0.014	−0.051	0.000	0.001	0.004	0.049
Δ *Earnings per Share* (Ratio)	97,196	0.000	0.146	−0.410	−0.013	0.005	0.021	0.357

The sample comprises a maximum of 222,766 firm-year observations from 49 countries between 1993 and 2008 for which sufficient Worldscope financial data and Datastream stock price data exist (see table 1). The table presents descriptive statistics for the variables used in the regression analyses. We employ the following dependent variables: *Dividend Payments* is a binary indicator marking firm-years with positive dividends per share (set equal to "1"). In firm-years with no dividend data or zero dividends we set this variable to "0." *Dividend Increases* (*Decreases*) is a binary indicator marking firm-years with a year-to-year increase (decrease) in dividends per share. We measure *Dividend Announcement Returns* as the absolute value of the cumulative abnormal returns over the three days surrounding the declaration date of the annual dividends per share (field 05913). We compute abnormal returns as daily raw returns minus local market returns. We use the following control variables: We define a binary indicator marking firm-years with *Share Repurchases*, measured as the (positive) amount of funds used to decrease the number of shares outstanding (field 04751), net of any yearly changes in preferred stock (field 03451). *Total Assets* are denominated in US$ thousand. *Market-to-Book* is the ratio of market value of equity divided by book value of equity. *Leverage* is the ratio of total debt divided by total assets. *Return on Assets* is the ratio of operating income divided by average total assets. We measure *Return Variability* as the annual standard deviation of daily stock returns over a firm's fiscal year (multiplied by 100). *Stock Return* is the annual buy-and-hold return, including dividends over the prior calendar year. *Negative Earnings* is a binary indicator marking firm-years with an operating loss. *Overlap with Earnings Announcement* is a binary indicator marking dividend announcements within five days of the annual earnings per share report date (field 05904). Δ *Dividend per Share* and Δ *Earnings per Share* are the year-to-year changes in dividends and earnings per share scaled by price per share at the end of the fiscalyear. Accounting data and market values are measured as of the fiscal year end. Except for variables with natural lower or upper bounds, we truncate all variables at the 1st and 99th percentile, and we use the natural log of the raw values where indicated.

include size, market-to-book, leverage, and profitability. For more details on data sources and variable measurement, see the notes to table 2.

4. *Empirical Results*

In this section, we first describe the results of the propensity analyses of paying dividends. We then assess the identification strategy we employ to capture changes in the information environment, and conduct various robustness tests. Next, we discuss the results of the changes in the information content of dividend announcements. We conclude with some cross-sectional analyses to strengthen our main findings of a reduced propensity to pay dividends.

4.1 ANALYSES OF THE PROPENSITY TO PAY DIVIDENDS

We start our analysis with graphically plotting the percentage of dividend-paying firms as well as the aggregate dividend payouts (in billion dollars) over time. We do so separately for firms in the treatment countries and the benchmark countries, centered on the informational events (i.e., in the event year $t = 0$). Figure 2 contains the graphs for mandatory IFRS adoption for the three years before and after the informational event. Panel A shows that the proportion of dividend-paying firms follows a different trend across the two groups. While the proportion of dividend-paying firms subject to the IFRS mandate decreases sharply following the regulatory change, the same number remains fairly stable in countries that did not require a switch in accounting standards. Thus, there are relatively fewer IFRS firms paying dividends, and the change coincides with the introduction of the new accounting rules. We can draw similar conclusions from the aggregate dividend payouts in panel B. While firms in non-IFRS countries pay a substantially higher total dividend in the event year, the same number remains almost flat in IFRS countries before it follows the general trend and also increases. Thus, in a relative sense, IFRS firms pay fewer aggregate dividends after the mandate. Figure 3 shows the same two graphs for IT enforcement beginning in year $t - 3$ through year $t + 5$. In panel A, we again observe that the percentage of dividend-paying firms drops at a faster pace (and beginning in the event year) in the treatment countries relative to the benchmark countries (i.e., countries with no IT laws, or where the IT laws had already been enforced earlier). Panel B shows a widening gap in aggregate dividend amounts between the two groups, which accelerates in the event year.

To more formally test these differential trends, we next conduct a simple difference-in-differences analysis of the percentage of dividend-paying firms and present results in panel A of table 3. Such a comparison across the cells of a two-by-two matrix is a straightforward way to account for unobserved differences between treatment and benchmark firms and to control

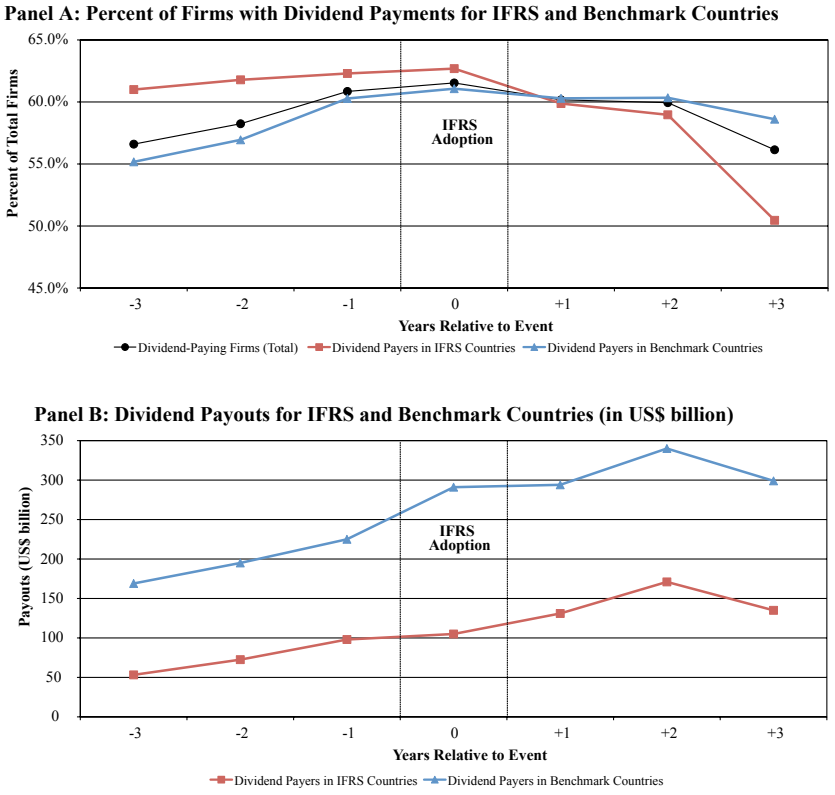

FIG. 2.—Proportion of dividend-paying firms and dividend payouts around mandatory IFRS adoption. The figure plots the time-series of the percentage of firms with dividend payments (panel A) and the corresponding aggregate U.S. dollars amounts (panel B) in the years surrounding a significant change in firms' information environment, that is, the mandatory introduction of IFRS reporting. The sample comprises the subset of applicable observations from our base sample as described in table 1. We align the firm-years in event time, and plot separate lines for the total sample (panel A only), the treatment sample countries, and the benchmark countries. We measure dividend payments using the dividends-per-share item in Worldscope (field 05101), and use the common dividend declared (field 18192) to measure the aggregate amounts.

for general trends in the data.[23] We report results for the full sample and a constant sample, for which we require at least eight firm-year observations per firm.[24] Throughout the panel, the tenor of the results is the same.

[23] To allow for a true difference-in-differences comparison we split the benchmark firms into a pre and post period using December 31, 2005 (IFRS setting), and the year 1996 (IT setting) as a cutoff value.

[24] For the IFRS setting, the constant sample requires firms to have data in each year. For the IT setting, due to its length and because it dates back to 1993, we require firms to be present in two-thirds of the 12 years possible.

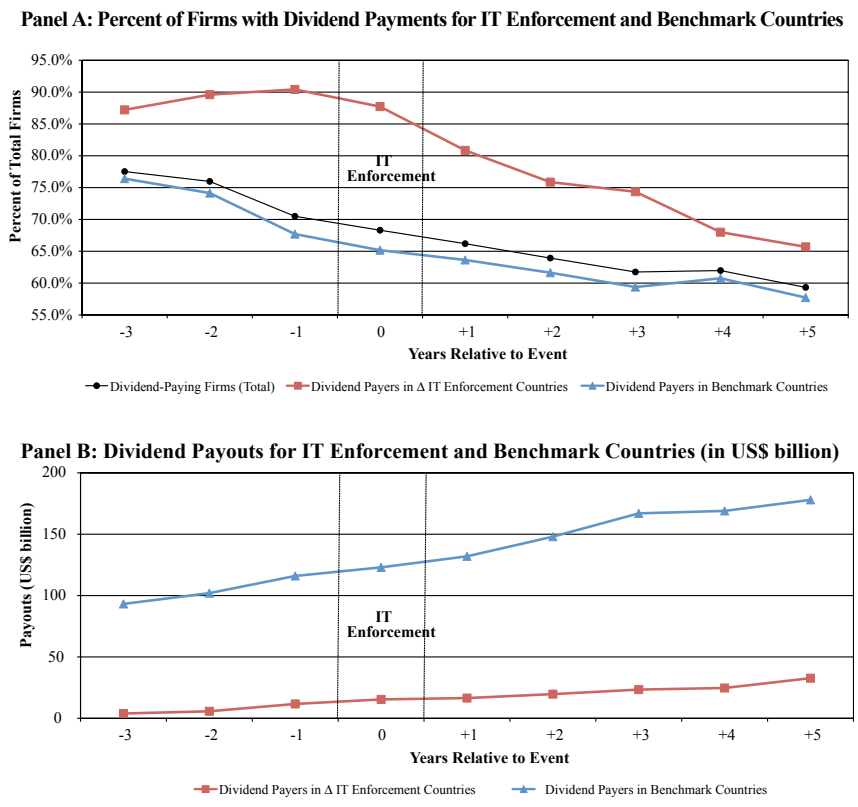

FIG. 3.—Proportion of dividend-paying firms and dividend payouts around IT enforcement. The figure plots the time-series of the percentage of firms with dividend payments (panel A) and the corresponding aggregate U.S. dollars amounts (panel B) in the years surrounding a significant change in firms' information environment, that is, the first enforcement of insider trading (IT) laws. The sample comprises the subset of applicable observations from our base sample as described in table 1. We align the firm-years in event time, and plot separate lines for the total sample (panel A only), the treatment sample countries, and the benchmark countries. We measure dividend payments using the dividends-per-share item in Worldscope (field 05101), and use the common dividend declared (field 18192) to measure the aggregate amounts.

The difference-in-differences is always negative and highly significant, indicating that the proportion of dividend-paying firms decreased more after IFRS adoption and after the first IT enforcement relative to the benchmark firms. For example, in the upper-left panel the percentage of dividend-paying firms decreases by 4.75 percentage points following the IFRS mandate. At the same time, the proportion of dividend payers *increases* by 2.82 percentage points in countries without regulatory change. The resulting difference-in-differences is −7.57% and significant.

In panel B of table 3, we explicitly account for other confounding factors, and report the coefficients from estimating equation (1) using logit

regression. We tabulate results for the full sample (Models 1, 3, and 4) and the constant sample (Model 2). Our main variable of interest, *InfoEvent*, always has the expected sign (negative for dividend payments and increases; positive for dividend decreases) and is highly significant. These results suggest that firms are less likely to pay dividends or announce dividend increases, and more likely to cut dividends per share or stop dividend payments following the two informational events. In terms of magnitude, the *InfoEvent* coefficients in Model 1 suggest a reduction in the probability of paying dividends of 9% and 11% for the IFRS setting and the IT enforcement, respectively (evaluated at the means of the other variables). These numbers are clearly economically significant, but not too large to be implausible. The control variables behave as expected and are generally highly significant. Large, profitable, and better performing firms with a history of paying dividends continue to do so, while highly levered firms with growth prospects, volatile stock returns, and operating losses are less likely to disburse cash dividends. In line with findings in the United States (Fama and French [2001], Skinner [2008]), share repurchases act as complements to dividend payouts as shown by the significantly positive share repurchase indicator.[25] Overall, the results suggest that an exogenous information shock affects firms' dividend policy and, more specifically, induces firms to make fewer dividend payments, consistent with a lesser need to mitigate the agency costs of FCF.

4.2 ASSESSING IDENTIFICATION AND ROBUSTNESS TESTS

The inferences we draw from the above analyses rely on the assumption that our difference-in-differences approach is able to separate the effects of an informational shock from other factors potentially affecting firms' dividend policies, in particular a general tendency toward fewer dividend payments over time (as seen in panel A of figure 1). We therefore conduct a series of robustness and falsification tests to assess the validity of our empirical identification strategy. If not mentioned otherwise, all tests build on our base specification for the full sample (i.e., Model 1 in panel B of table 3).

First, we assess the timing of the informational shock and report results in panel A of table 4. Instead of estimating a single event, we break up the entire sample period into four subperiods by including three separate indicator variables for the two years leading up to the event (years $t-2$ and $t-1$), the two years around the event (years t and $t+1$), and the remaining years ($t \geq +2$). The years before $t-2$ serve as the base period. If the change to the information environment occurs around the "true" event year, we expect the first of the three indicator variables to be insignificant, the second

[25] Note that, when using *Dividend Decreases* as the dependent variable, the expected sign on all the control variables reverses. Furthermore, because by definition the lagged *Dividend Payments* variable takes on a value of "1" for all dividend decreases, we do not include it in the model.

TABLE 3

Changes in Dividend Payment Behavior Around Informational Events

Panel A: Difference-in-differences analysis of dividend payments around mandatory IFRS adoption and insider trading enforcement

		Full Sample				Constant Sample		
Mandatory IFRS Adoption		2001–2004 Pre-Adoption Period (a)	2005–2008 Post-Adoption Period (b)	(b) − (a)		2001–2004 Pre-Adoption Period (a)	2005–2008 Post-Adoption Period (b)	(b) − (a)
Mandatory IFRS Adopters	(i)	62.53% $N = 20{,}113$	57.78% $N = 21{,}463$	−4.75%***	(i)	75.41% $N = 9{,}682$	77.15% $N = 8{,}270$	1.74%***
Non-IFRS Adopters	(ii)	57.47% $N = 50{,}499$	60.29% $N = 55{,}355$	2.82%***	(ii)	70.28% $N = 23{,}260$	75.40% $N = 23{,}260$	5.12%***
	(i) − (ii)	5.06%***	−2.51%***	−7.57%***	(i) − (ii)	5.13%***	1.75%***	−3.38%***
		Full Sample				Constant Sample		
Insider Trading Enforcement		Pre-Enforcement Period (a)	Post-Enforcement Period (b)	(b) − (a)		Pre-Enforcement Period (a)	Post-Enforcement Period (b)	(b) − (a)
Δ Enforcement Countries	(i)	89.19% $N = 2{,}396$	66.17% $N = 25{,}898$	−23.02%***	(i)	89.50% $N = 1{,}933$	80.23% $N = 6{,}286$	−9.27%***
Nonenforcement/ Always Enforcement Countries	(ii)	72.30% $N = 16{,}862$	59.73% $N = 98{,}801$	−12.57%***	(ii)	76.00% $N = 14{,}052$	70.65% $N = 44{,}796$	−5.35%***
	(i) − (ii)	16.89%***	6.44%***	−10.45%***	(i) − (ii)	13.50%***	9.58%***	−3.92%***

(*Continued*)

TABLE 3—*Continued*

Panel B: Logit regression analysis of dividend payments around mandatory IFRS adoption and insider trading enforcement

	Mandatory IFRS Adoption				Insider Trading Enforcement			
	(1) Dividend Payments (Full Sample)	(2) Dividend Payments (Constant Sample)	(3) Dividend Increases (Full Sample)	(4) Dividend Decreases (Full Sample)	(1) Dividend Payments (Full Sample)	(2) Dividend Payments (Constant Sample)	(3) Dividend Increases (Full Sample)	(4) Dividend Decreases (Full Sample)
Informational Events:								
IFRS Adoption	−0.397***	−0.540***	−0.301**	0.146**	–	–	–	–
	(−3.37)	(−2.69)	(−2.12)	(1.97)				
IT Enforcement	–	–	–	–	−0.532***	−0.668***	−0.299**	0.413***
					(−2.90)	(−3.48)	(−2.52)	(2.88)
Control Variables:								
Dividend Payments$_{t-1}$	4.191***	4.622***	2.005***		4.318***	4.999***	2.095***	
	(8.92)	(8.10)	(3.69)		(7.34)	(7.19)	(3.18)	
Share Repurchases	0.187***	0.171***	0.188**	−0.133	0.250***	0.239**	0.262***	-0.193***
	(2.72)	(3.41)	(2.02)	(−1.60)	(3.46)	(2.21)	(3.78)	(−2.84)
Log *(Total Assets)*	0.197***	0.150***	0.146***	−0.139***	0.149***	0.143***	0.093***	−0.108***
	(8.67)	(11.95)	(7.97)	(−8.12)	(5.91)	(5.44)	(2.66)	(−3.80)
Market-to-Book	−0.071***	−0.096***	−0.002	−0.020	−0.075***	−0.095***	−0.001	−0.021*
	(−4.77)	(−3.07)	(−0.31)	(−0.79)	(−4.53)	(−3.18)	(−0.13)	(−1.68)
Leverage	−1.303***	−1.579***	−0.345***	0.735***	−1.885***	−2.159***	−0.445**	1.087***
	(−3.72)	(−3.48)	(−3.96)	(5.82)	(−4.26)	(−3.45)	(−2.27)	(11.95)
Return on Assets	5.834***	5.672***	6.842***	−5.724***	4.669***	3.713**	6.650***	−6.608***
	(5.63)	(3.84)	(4.57)	(−9.76)	(2.92)	(2.12)	(4.04)	(−6.75)

(*Continued*)

TABLE 3—*Continued*

Panel B: Logit regression analysis of dividend payments around mandatory IFRS adoption and insider trading enforcement

	Mandatory IFRS Adoption				Insider Trading Enforcement			
	(1) Dividend Payments (Full Sample)	(2) Dividend Payments (Constant Sample)	(3) Dividend Increases (Full Sample)	(4) Dividend Decreases (Full Sample)	(1) Dividend Payments (Full Sample)	(2) Dividend Payments (Constant Sample)	(3) Dividend Increases (Full Sample)	(4) Dividend Decreases (Full Sample)
Return Variability	−0.420***	−0.486***	−0.159**	0.302***	−0.596***	−0.705***	−0.292***	0.335***
	(−8.50)	(−5.89)	(−2.39)	(6.61)	(−19.50)	(−17.00)	(−4.52)	(10.80)
Stock Return	0.150***	0.174**	0.230***	−0.347***	0.207***	0.344***	0.293***	−0.416***
	(4.19)	(2.52)	(4.00)	(−4.47)	(4.65)	(6.69)	(5.80)	(−5.44)
Negative Earnings	−1.388***	−1.636***	−0.730***	0.773***	−1.784***	−2.214***	−0.829***	1.042***
	(−9.57)	(−8.88)	(−8.96)	(3.90)	(−7.26)	(−7.37)	(−7.68)	(3.39)
Country-, Industry-, and Year-Fixed Effects	Included	Included	Included	Included	Included	Included	Included	Included
Pseudo-R^2	65.8%	67.6%	28.1%	16.2%	68.4%	71.8%	30.1%	16.0%
N	147,430	64,472	147,430	87,811	143,957	67,067	143,957	90,946
N Treatment Firm-Years	21,463	8,270	8,605	4,332	25,898	6,286	10,679	7,046
N Treatment Firms	7,812	2,244	4,060	2,914	5,666	764	3,732	3,385

The table reports changes in firms' dividend payment behavior following a significant change in the information environment. We consider two informational events: (1) the mandatory introduction of IFRS reporting (from 2001 to 2008), and (2) the first enforcement of insider trading (IT) laws (from 1993 to 2004). We report results for the full sample (see table 1) and a "constant" sample for which we require at least eight observations per firm. In panel A, we report the number of observations and the percentage of dividend-paying firms across treatment and benchmark sample countries before and after the informational event. For mandatory IFRS, we use December 31, 2005, and for IT enforcement the year 1996 as a cutoff for the benchmark firms. We indicate statistical significance of differences across cells with *t*-tests. In panel B, we report logit coefficient estimates and (in parentheses) *z*-statistics based on robust standard errors clustered by country from regressing *Dividend Payments* (or *Dividend Increases* and *Decreases*) on an informational event indicator plus controls. The *IFRS Adoption* variable takes on the value of "1" for fiscal years ending on or after December 31 of the year of the IFRS mandate; the *IT Enforcement* variable takes on the value of "1" for all fiscal years ending in or after the year of the first IT prosecution. For details on the remaining variables, see tables 1 and 2. We use the natural log of the raw values and lag the variables by one year where indicated. We include country-, industry-, and year-fixed effects in the regressions, but do not report the coefficients.

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

TABLE 4

Assessing Identification of the Changes in Dividend Payment Behavior Around Informational Events

Panel A: Analysis of years leading up to and following the informational events

	IFRS Adoption			IT Enforcement	
Dividend Payments as Dependent Variable	(1) Dividend Payments (Full Sample)	(2) Dividend Payments (Constant Sample)	(3) Dividend Payments (Constant Sample, No United States)	(1) Dividend Payments (Full Sample)	(2) Dividend Payments (Constant Sample)
Years Relative to Event Year ($t = 0$):					
Years $t-2$ *and* $t-1$	0.182	0.079	−0.028	−0.159	−0.346
	(1.30)	(0.43)	(−0.21)	(−0.61)	(−0.96)
Years t *and* $t+1$	−0.104	−0.119	−0.238*	−0.735**	−1.018***
	(−0.67)	(−0.66)	(−1.71)	(−2.13)	(−2.63)
Years $t \geq +2$	−0.449**	−0.801**	−0.503	−0.615**	−0.868***
	(−2.19)	(−2.41)	(−1.55)	(−2.54)	(−2.72)
F-Test for Difference Across Coefficients [*p*-value]					
$Year_{t-2,\,t-1} = Year_{t,\,t+1}$	[0.000]	[0.070]	[0.025]	[0.103]	[0.010]
$Year_{t,\,t+1} = Year_{t\geq +2}$	[0.061]	[0.053]	[0.347]	[0.700]	[0.685]
Control Variables	Included	Included	Included	Included	Included
Fixed Effects	Included	Included	Included	Included	Included
N	147,430	64,472	47,584	143,957	67,067

(*Continued*)

TABLE 4—*Continued*

Panel B: Counterfactually assigning event years to benchmark countries

Dividend Payments as Dependent Variable	IFRS Adoption	Insider Trading Enforcement		
"True" Event:				
IFRS Adoption	−0.376***	–	–	–
	(−3.80)			
IT Enforcement	–	−0.563**	−0.566**	−0.530***
		(−2.33)	(−2.40)	(−2.86)
Counterfactual Event:				
Non-IFRS Adoption Countries	0.147	–	–	–
	(1.27)			
Non-IT Enforcement Countries	–	−0.064	–	–
		(−0.37)		
Always-IT Enforcement Countries	–	–	−0.072	–
			(−0.44)	
Never-IT Enforcement Countries	–	–	–	0.081
				(0.37)
F-Test for Difference Across Coefficients [*p*-value]	[0.000]	[0.002]	[0.002]	[0.012]
Control Variables	Included	Included	Included	Included
Fixed Effects	Included	Included	Included	Included
N	147,430	143,957	143,957	143,957

(*Continued*)

TABLE 4—*Continued*

Panel C: Changes in dividend payments for firms not directly affected by the informational event

	Around Mandatory IFRS Adoption			Around Insider Trading Enforcement	
Dividend Payments as Dependent Variable	(1) Voluntary IFRS Firms (All Adopters)	(2) Voluntary IFRS Firms (Serious Adopters)	(3) U.S. Cross-Listed Firms	(1) Voluntary IFRS Firms (All Adopters)	(2) U.S. Cross-Listed Firms
Counterfactual Firms:					
Voluntary IFRS Firms	−0.402***	0.265	–	0.256	–
	(−2.68)	(0.87)		(0.43)	
U.S. Cross-Listed Firms	–	–	−0.005	–	0.036
			(−0.02)		(0.05)
Informational Event Firms:					
IFRS Adoption	−0.387***	−0.394***	−0.378***	–	–
	(−3.33)	(−3.37)	(−3.22)		
IT Enforcement	–	–	–	−0.526***	−0.531***
				(−2.86)	(−2.88)
F-Test for Difference Across Coefficients [*p*-value]	[0.885]	[0.043]	[0.124]	[0.242]	[0.426]
Indicator for Counterfactual Firms	Included	Included	Included	Included	Included
Control Variables	Included	Included	Included	Included	Included
Fixed Effects	Included	Included	Included	Included	Included
N	153,603	149,207	149,242	144,383	144,259

The table assesses the identification of changes in firms' dividend payment behavior following a significant change in the information environment. We consider two informational events: (1) the mandatory introduction of IFRS reporting, and (2) the first enforcement of insider trading (IT) laws. If not indicated otherwise, we build on our base specification for the full sample (see Model 1 in panel B of table 3), and use *Dividend Payments* as the dependent variable. In panel A, instead of estimating a single event indicator, we include three separate indicator variables for the two years leading up to the event (years $t-2$ and $t-1$), the two years around the event (years t and $t+1$), and the remaining years ($t \geq +2$). In panel B, we report the "true" informational event indicators together with indicators for counterfactual events for the benchmark firms. That is, for each benchmark sample country we randomly assign a "true" event date and set the counterfactual event indicator to "1" beginning on that date. For IT enforcement, we do this separately for all benchmark countries (*Non-IT Enforcement*), countries in which the first IT prosecution took place before the start of our sample (*Always IT-Enforcement*), and countries without IT prosecution over the sample period (*Never-IT Enforcement*). In panel C, we use firms that voluntarily switched to IFRS reporting before it became mandatory (Daske et al. [2013]) and foreign firms whose shares are listed on a U.S. exchange (Hail and Leuz [2009]) as an additional benchmark group. That is, we add a separate binary indicator for these counterfactual firms to the model (*Voluntary IFRS Firms* and *U.S. Cross-Listed Firms*), and code it as "1" beginning on the informational event date. Around mandatory IFRS adoption, we do this separately for all voluntary IFRS firms and only for those voluntary IFRS firms that showed a serious commitment to more transparency around the change in accounting standards under any of the three classifications in Daske et al. [2013], that is, based on a firm's changes in its reporting behavior, reporting environment, and reporting incentives. To capture selection effects, we also include a binary indicator variable that takes on the value of "1" for all firm-years of the counterfactual firms. We require the voluntary IFRS and U.S. cross-listed firms to have at least one observation pre and post the informational event. The table reports logit coefficient estimates and (in parentheses) *z*-statistics based on robust standard errors clustered by country. We also report *p*-values (in brackets) from *F*-tests comparing coefficients.

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

(containing the "true" event year) to be negative and smaller than the preceding period, and the third still negative but no different from the middle coefficient. This pattern is what we observe in the IT setting. Only after the first IT enforcement took place, the propensity to pay dividends went down, and stayed at lower levels afterwards. In the IFRS setting (columns 1 and 2), the middle-period coefficient is insignificantly negative (but, as indicated by the *F*-test, significantly smaller than in the preceding two years). The coefficient becomes significantly negative in period $t \geq +2$. Once we drop the U.S. observations from the analyses (i.e., the country hit by the financial crisis in 2008), the event period coefficient becomes significantly negative, more negative than in the preperiod, and is not distinguishable from period $t \geq +2$ (column 3). This pattern is consistent with the effect beginning around IFRS adoption. Overall, we find for both events that the change in dividend payout behavior started at about the time of the change in information environment.

Second, we counterfactually assign event years to the benchmark countries. That is, we introduce a separate *InfoEvent* indicator for firms in countries that did not adopt IFRS or did not initiate the enforcement of IT laws during the sample period. In the IFRS setting, the counterfactual event indicator is set to "1" for fiscal years ending on or after December 31, 2005; in the IT setting, we randomly assign the "true" event dates to the benchmark countries, and do so for all benchmark countries and separately for countries in which the first prosecution took place before our sample period and countries without IT laws.[26] There should be no effect around these artificial events for benchmark firms. In panel B of table 4, we report the "true" and the counterfactual event indicators together with *p*-values from an *F*-test comparing the two. As expected, none of the counterfactual event indicators are statistically significant, and in all four cases the coefficient is significantly larger than the "true" event variable.

Third, we contrast the treatment effects to a set of firms for which ex ante it is not obvious whether the informational shock should have any effect because they presumable already follow a transparent reporting and disclosure regime (i.e., counterfactual firms). More specifically, we include firms that voluntarily switched to IFRS reporting before it became mandatory and non-U.S. firms whose shares are cross-listed on a U.S. exchange as additional benchmark groups.[27] That is, we add these firms to the sample and include a separate *InfoEvent* indicator for them in the model that takes on the value of "1" after the informational shock. Table 4, panel C, presents the results of the analyses, which yield three main insights. First,

[26] We repeat this random assignment 10 times and each time the results are very similar to those reported.

[27] We identify voluntary IFRS adopters based on Daske et al. [2013], and U.S. exchange–listed firms based on Hail and Leuz [2009]. We require each firm to have at least one observation pre and post the informational events (i.e., the mandatory adoption of IFRS and the first enforcement of IT laws).

the treatment effect is largely unaffected by the inclusion of the counterfactual firms. Second, in the IFRS setting, we find a significant decrease in dividend payouts for the counterfactual firms, but only if we consider all voluntary IFRS firms together. Once we limit the voluntary IFRS firms to those with a substantive change in transparency around the voluntary switch (as measured by any of the three "serious" vs. "label" classifications in Daske et al. [2013]), the negative effect goes away and becomes statistically different from the treatment effect. This pattern is what one would expect for firms that were already more transparent to begin with. Third, we do not find any change in dividend policy, neither in terms of magnitude nor statistical significance, for cross-listed firms after the informational events.[28] The findings suggest that "true" counterfactual firms are not affected by the change in the information environment, because presumably investors can already effectively monitor managers regardless of dividend payouts.

Fourth, we conduct a series of robustness tests to assess various research design choices and report results in table 5. Panel A contains the results for the IFRS setting. In the first three models, we separately add three controls: net cash flows from operations divided by total assets as a proxy for cash constraints, retained earnings divided by the book value of total equity as a proxy for firm maturity and earnings power (DeAngelo, DeAngelo, and Stulz [2006], Denis and Osobov [2008]), and the wedge between yearly dividend and capital gains tax rates for individuals, which captures the relative disadvantage of dividend payouts compared to share repurchases.[29] As expected, the first two additional control variables are significantly positive; the tax wedge is significantly negative. In the next two models, we replace the country- and industry-fixed effects with firm-fixed effects using the full and constant sample. This accounts for time-invariant firm attributes, but also substantially reduces the number of observations due to lack of variation in the dependent variable. Finally, we exclude firm-years from the United States, the largest sample country (and also strongly affected by the financial crisis), and in the last model further drop the year 2008, which, as seen in table 1, likely was unusual. Throughout the panel, all the *IFRS Adoption* coefficients are significantly negative.

Panel B of table 5 contains the sensitivity analyses for the IT setting. We again include the three additional control variables in the model (i.e., net cash flows, retained earnings, and tax rate wedge), estimate two firm-fixed effects specifications, and exclude the U.S. observations. Moreover, we estimate a model in which we drop the IT enforcement year from the analysis.

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[28] The coefficients across treatment and counterfactual firms are significantly different in only one of the five cases, which is likely a power issue because we only have very few voluntary IFRS and U.S. cross-listed firms (hence, we are not able to separately analyze the serious IFRS adopters in the IT setting).

[29] To avoid measurement issues from the change in accounting standards, we use the last *Retained Earnings* value under local GAAP in firm-years with IFRS reporting. However, similar results obtain when we use actual values as reported under IFRS instead.

TABLE 5

Sensitivity Analyses of the Changes in Dividend Payment Behavior Around Informational Events

Panel A: Mandatory IFRS adoption as informational event

Dividend Payments as Dependent Variable	(1) Plus CFO over Total Assets as Control	(2) Plus Retained Earnings as Control	(3) Plus Tax Rate Wedge as Control	(4) Firm-Fixed Effects (Full Sample)	(5) Firm-Fixed Effects (Constant Sample)	(6) No U.S. Observations	(7) No U.S. Observations & No Year 2008
Informational Events:							
IFRS Adoption	−0.387***	−0.298**	−0.356***	−0.562***	−0.712***	−0.349**	−0.288**
	(−3.27)	(−2.47)	(−3.02)	(−2.65)	(−2.78)	(−2.49)	(−2.44)
Control Variables:							
Dividend Payments$_{t-1}$	4.186***	4.080***	4.192***	1.154***	1.644***	3.638***	3.600***
	(8.82)	(8.38)	(8.92)	(4.52)	(6.79)	(16.80)	(16.96)
Share Repurchases	0.177***	0.157**	0.188***	0.276***	0.305**	0.089**	0.080**
	(2.64)	(2.18)	(2.74)	(2.86)	(2.36)	(2.32)	(2.04)
Log*(Total Assets)*	0.194***	0.195***	0.197***	0.963***	0.768***	0.225***	0.217***
	(8.71)	(6.94)	(8.74)	(6.44)	(3.49)	(8.72)	(7.78)
Market-to-Book	−0.075***	−0.058***	−0.072***	−0.040**	−0.023	−0.074***	−0.076***
	(−5.11)	(−3.58)	(−4.67)	(−2.13)	(−0.62)	(−3.66)	(−3.60)
Leverage	−1.230***	−1.389***	−1.300***	−4.699***	−5.148***	−1.721***	−1.738***
	(−3.46)	(−3.71)	(−3.72)	(−6.47)	(−4.47)	(−8.01)	(−7.80)
Return on Assets	5.201***	5.810***	5.837***	10.802***	10.407***	7.562***	7.832***
	(4.74)	(4.79)	(5.61)	(6.04)	(4.20)	(8.47)	(8.45)
Return Variability	−0.418***	−0.436***	−0.418***	−0.359***	−0.387***	−0.453***	−0.507***
	(−8.64)	(−8.51)	(−8.65)	(−5.75)	(−4.47)	(−8.61)	(−8.01)

(*Continued*)

TABLE 5—*Continued*

Panel A: Mandatory IFRS adoption as informational event

Dividend Payments as Dependent Variable	(1) Plus CFO over Total Assets as Control	(2) Plus Retained Earnings as Control	(3) Plus Tax Rate Wedge as Control	(4) Firm-Fixed Effects (Full Sample)	(5) Firm-Fixed Effects (Constant Sample)	(6) No U.S. Observations	(7) No U.S. Observations & No Year 2008
Stock Return	0.153***	0.154***	0.149***	0.092***	0.104**	0.164***	0.168***
	(4.38)	(4.30)	(4.23)	(2.78)	(2.06)	(5.11)	(4.15)
Negative Earnings	−1.409***	−1.453***	−1.389***	−1.006***	−1.227***	−1.255***	−1.297***
	(−9.82)	(−8.77)	(−9.57)	(−10.22)	(−9.22)	(−9.44)	(−9.62)
CFO over Total Assets	1.417***	–	–	–	–	–	–
	(5.08)						
Retained Earnings	–	0.206***	–	–	–	–	–
		(3.84)					
Tax Rate Wedge	–	–	−0.006*	–	–	–	–
			(−1.76)				
Country-, Industry-, and Year-Fixed Effects	Included	Included	Included	Year- & Firm-Fixed Effects	Year- & Firm-Fixed Effects	Included	Included
Pseudo-R^2	66.0%	66.9%	65.8%	29.7%	36.1%	61.1%	61.6%
N	145,310	129,625	147,430	41,241	18,464	112,838	98,087

(*Continued*)

TABLE 5—*Continued*

Panel B: Insider trading enforcement as informational event

Dividend Payments as Dependent Variable	(1) Plus CFO over Total Assets as Control	(2) Plus Retained Earnings as Control	(3) Plus Tax Rate Wedge as Control	(4) Firm-Fixed Effects (Full Sample)	(5) Firm-Fixed Effects (Constant Sample)	(6) No U.S. Observations	(7) Without Year of Δ IT Enforcement
Informational Events:							
IT Enforcement	−0.581***	−0.536**	−0.525***	−0.631*	−0.666**	−0.552***	−0.545***
	(−3.07)	(−2.21)	(−2.77)	(−1.79)	(−2.10)	(−2.89)	(−2.78)
Control Variables:							
Dividend Payments$_{t-1}$	4.340***	4.299***	4.332***	1.480***	2.253***	3.503***	4.319***
	(7.31)	(6.86)	(7.36)	(5.14)	(8.82)	(14.54)	(7.30)
Share Repurchases	0.236***	0.218***	0.244***	0.356***	0.343**	0.144***	0.247***
	(3.30)	(2.77)	(3.41)	(3.17)	(2.33)	(3.26)	(3.35)
Log*(Total Assets)*	0.151***	0.134***	0.148***	1.122***	0.894***	0.178***	0.148***
	(6.66)	(4.96)	(5.95)	(8.78)	(5.32)	(5.39)	(5.95)
Market-to-Book	−0.079***	−0.032*	−0.074***	−0.002	−0.050	−0.078***	−0.076***
	(−4.75)	(−1.86)	(−4.49)	(−0.08)	(−1.49)	(−3.32)	(−4.54)
Leverage	−1.824***	−1.559***	−1.883***	−5.205***	−5.042***	−2.508***	−1.887***
	(−3.86)	(−3.75)	(−4.27)	(−6.91)	(−4.87)	(−9.64)	(−4.25)
Return on Assets	3.882**	3.713**	4.644***	9.467***	9.364**	8.520***	4.640***
	(2.31)	(2.45)	(2.90)	(3.79)	(2.57)	(7.90)	(2.91)
Return Variability	−0.595***	−0.550***	−0.598***	−0.488***	−0.603***	−0.562***	−0.596***
	(−20.51)	(−17.22)	(−19.32)	(−9.26)	(−9.50)	(−12.79)	(−19.62)

(*Continued*)

TABLE 5—*Continued*

Panel B: Insider trading enforcement as informational event

Dividend Payments as Dependent Variable	(1) Plus CFO over Total Assets as Control	(2) Plus Retained Earnings as Control	(3) Plus Tax Rate Wedge as Control	(4) Firm-Fixed Effects (Full Sample)	(5) Firm-Fixed Effects (Constant Sample)	(6) No U.S. Observations	(7) Without Year of Δ IT Enforcement
Stock Return	0.208***	0.171***	0.208***	0.128***	0.193***	0.210***	0.205***
	(4.76)	(3.44)	(4.63)	(2.85)	(2.66)	(3.97)	(4.63)
Negative Earnings	−1.771***	−1.845***	−1.786***	−1.188***	−1.543***	−1.414***	−1.786***
	(−7.48)	(−6.80)	(−7.27)	(−6.89)	(−6.77)	(−6.66)	(−7.24)
CFO over Total Assets	1.978***	–	–	–	–	–	–
	(10.10)						
Retained Earnings	–	0.453**	–	–	–	–	–
		(2.52)					
Tax Rate Wedge	–	–	0.001	–	–	–	–
			(0.19)				
Country-, Industry-, and Year-Fixed Effects	Included	Included	Included	Year- & Firm-Fixed Effects	Year- & Firm-Fixed Effects	Included	Included
Pseudo-R^2	68.7%	69.8%	68.5%	35.7%	44.6%	60.4%	68.4%
N	140,147	130,704	143,418	40,768	21,072	98,608	142,743

The table reports sensitivity analyses of our base specification (see Model 1 in panel B of table 3), examining changes in firms' dividend payment behavior around (1) the mandatory introduction of IFRS reporting (panel A), and (2) the first enforcement of insider trading (IT) laws (panel B). We use *Dividend Payments* as the dependent variable. In panel A, we report results for the following models: (1) we add net cash flows from operations divided by total assets (*CFO over Total Assets*) as a control. (2) We include *Retained Earnings* divided by the book value of total equity. To avoid measurement issues, we take the last value under local GAAP in firm-years with IFRS reporting. (3) We add the yearly *Tax Rate Wedge* as a control, that is, the difference between the dividend tax rate and the capital gains tax rate for individuals in a country. We collect tax rate information from the OECD and from publications by the big audit firms. Next, we replace the country- and industry-fixed effects with firm-fixed effects for either the full sample (4) or the constant sample (5). (6) We exclude the largest sample country from the analysis (i.e., the United States). (7) We further exclude the year of the financial crisis (i.e., 2008). In panel B, we replace model (7) with a model that omits the year in which the first IT prosecution took place in a country. The table reports logit coefficient estimates and (in parentheses) z-statistics based on robust standard errors clustered by country.

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

This helps avoid the misclassification of firm-years due to the unknown exact date of the initial prosecution under the new IT laws. Across all models, the results of the *IT Enforcement* variable are negative and significant, consistent with the findings reported earlier.

Fifth, we run a series of robustness tests to examine alternative explanations for our results and address institutional concerns and concerns specific to each of the two informational events (results not tabulated). First, in light of prior literature showing a reduction in cost of capital following our two events (e.g., Bhattacharya and Daouk [2002], Daske et al. [2008]), it is quite possible that the lower cost of capital generates new investment opportunities for firms by turning previously negative NPV projects into positive ones. These growth prospects render dividend payouts less attractive. Even though it is conceptually and empirically difficult to fully separate the information shock–induced expansion of growth prospects from a direct reduction in the agency costs of FCF, we conduct two analyses to separate the two channels: We explicitly control for aggregate country-level or firm-level growth prospects and cost of capital in equation (1), and we run cross-sectional analyses, in which we allow the coefficient on *InfoEvent* to vary depending on whether the firm or country experiences an increase or decrease in (aggregate) growth prospects and cost of capital.[30] If lower cost of capital increases the investment opportunity set and triggers more investments, we should observe a negative (positive) relation between future growth prospects (cost of capital) and the propensity to pay dividends. We only find very limited evidence of such a relation (for market-to-book). More importantly, the main effect of the two information events is never mitigated. Furthermore, the cross-sectional tests do not reveal a differential relation among firms with positive or negative shocks to growth or cost of capital, suggesting that the indirect channel is not enough to explain our main results.

Next, we look into the well-documented finding that managers are reluctant to cut or stop dividend payments (e.g., Brav et al. [2005], DeAngelo, DeAngelo, and Skinner [2008]; see also footnote 19). To examine this issue in our setting, we collect detailed background information from annual reports, press releases, and media articles on 108 randomly selected dividend

[30] We measure aggregate growth prospects by the country-year median market-to-book ratio or the log of the total inflows and outflows of foreign direct investments in a country and year (source: World Bank). We measure cost of capital as the country-year median or firm-specific implied cost of capital computed from the average of four accounting-based valuation models (see Hail and Leuz [2006]) and estimated using the Hou, van Dijk, and Zhang [2012] approach. We separately include each of these four proxies as additional control variables in the model. In the cross-sectional tests we create binary partitioning variables based on year-to-year changes in the four proxies (i.e., set to "1" for increases in growth and decreases in cost of capital) and interact them with the *InfoEvent* variable (similar in structure to our tests in section 4.4).

cuts as indicated in Worldscope (54 pre-IFRS and 54 post-IFRS adoption).[31] Managers often refer to performance problems (27%), future growth and investment projects (17%), and debt-related issues (4%) when justifying lower dividend payments. These explanations seem informative because we find that firms referring to future growth indeed have higher Tobin's *q* and market-to-book ratios and firms referring to performance problems indeed have lower returns on equity than the rest. However, in a large number of cases, management remains mum or nonspecific when announcing dividend cuts (50%). Interestingly, the proportion of "no comment" announcements is significantly larger after the IFRS mandate (assessed with a chi-squared test). This communication behavior is consistent with a reduction in information asymmetry, and hence a lesser need to provide additional information.

In an additional series of tests, we address whether institutional features like an explicit link between IFRS reporting and firms' ability to pay dividends, restrictions on share repurchases, or changes in capital gains and dividend tax rates around the event might have affected our findings. Table A1 in the appendix provides institutional background information on these potentially confounding factors. When we rerun our main analyses after dropping (1) countries with institutional ties between IFRS and dividend payouts (e.g., Denmark, Italy), (2) years before share repurchases were allowed in a country, and (3) countries where there was a change in tax rates and/or the tax regime around the event (e.g., Finland or Norway in 2005), the results remain largely the same and none of the inference changes.

We then examine the potential endogeneity of the two informational events, that is, whether local market conditions and other economic forces might have affected the implementation timing of IFRS adoption or IT enforcement. In the spirit of Altonji, Elder, and Taber [2005], we first predict firms' propensity to pay dividends based on GDP, growth in GDP, inflation, and aggregate stock market capitalization (plus all the control variables from our base specification in table 3). These factors capture local market conditions and have the potential to be correlated with dividend payouts. We then use the predicted values from this first stage regression to code a binary indicator of predicted dividend payments ("1" if predicted propensity ≥ 0.5) and use it as a dependent variable in our base model. Under the alternative explanation that local market conditions and forces induce our results, we should find similar coefficient estimates as before. However, both the *IFRS Adoption* and *IT Enforcement* variables are insignificantly

[31] The purpose of this hand-collection was also to validate our dividend data. That is, we checked whether (1) firms reduced dividend payments as indicated in Worldscope, (2) the amount of the change in dividend payouts is the same across the two sources, and (3) the announcement dates correspond. We did not find any problems with our data as, in 103 out of 108 cases, Worldscope corresponds with what firms report.

positive, suggesting that local market and economic forces do not explain our findings.

Finally, we examine two alternative informational events. One completely unrelated to IFRS adoption and IT enforcement (i.e., the introduction of the Sarbanes-Oxley Act, SOX, in the United States) and one closely aligned in time with IFRS adoption (i.e., the implementation of the Market Abuse Directive, MAD, in the European Union).[32] When we rerun our base specification with either a *SOX* or *MAD* indicator, the coefficients on these variables are negative and highly significant, suggesting a reduction in the propensity to pay dividends after the respective informational shock. This effect is consistent with our main findings, and should help alleviate concerns that unobserved institutional factors in the cross-country setting might drive our results. Moreover, it illustrates that IFRS adoption serves as a mere proxy for an information shock (not its causal source), but that the ultimate causes underlying the change in the information environment can be manifold.

4.3 ANALYSES OF THE INFORMATION CONTENT OF DIVIDEND PAYMENTS

In this section, we turn to the tests of information content following the two events. We present results of estimating equation (2) using OLS regression for all dividend announcements (full and constant sample), and separately for the announcement of dividend increases and dividend decreases in table 6, panel A. The three-day absolute *Dividend Announcement Returns* serve as a proxy for information content. Because we need dividend (and earnings) announcement dates from Worldscope, the sample is substantially smaller than in the propensity analyses. Throughout the panel, our main variable of interest, the *InfoEvent* coefficient, is negative and, with one exception, significant. This pattern indicates that markets react less to the announcement of dividend payments, increases, and decreases following the mandatory adoption of IFRS or the first prosecution of IT laws. A smaller market reaction is indicative of lower information content of dividend payouts after an information shock.

The relative magnitude of the coefficients on dividend increases and dividend decreases suggests an asymmetric reaction to the information events, even though they are not statistically different from each other. This pattern is consistent with a Bayesian perspective, under which dividend increases conform with investors' priors about their role in mitigating the agency problem in a weak information environment (e.g., in the period before IFRS adoption or IT enforcement). At the same time, dividend de-

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[32] For the analysis of SOX, we limit the sample to U.S. observations in the six years surrounding the passage of the act, that is, we code the *InfoEvent* indicator in equation (1) as "1" for fiscal-year ends after September 2002. For the MAD analyses, we use the IFRS sample and code the *InfoEvent* indicator as "1" based on the MAD entry-into-force dates in Christensen, Hail, and Leuz [2011]. Note that for 21 out of 29 countries MAD became effective in 2005 and therefore is not distinguishable from IFRS adoption in our research design.

TABLE 6

Changes in the Information Content of Dividend Announcements Around Informational Events

Panel A: OLS regression analysis of dividend announcement returns around mandatory IFRS adoption and insider trading enforcement

	Mandatory IFRS Adoption				Insider Trading Enforcement			
Three-Day Absolute Dividend Announcement Returns as Dependent Variable	(1) Dividend Payments (Full Sample)	(2) Dividend Payments (Constant Sample)	(3) Dividend Increases (Full Sample)	(4) Dividend Decreases (Full Sample)	(1) Dividend Payments (Full Sample)	(2) Dividend Payments (Constant Sample)	(3) Dividend Increases (Full Sample)	(4) Dividend Decreases (Full Sample)
Informational Events:								
IFRS Adoption	−0.004**	−0.004***	−0.004*	−0.006**	–	–	–	–
	(−2.16)	(−2.91)	(−1.87)	(−2.46)				
IT Enforcement	–	–	–	–	−0.005**	−0.004**	−0.005	−0.005***
					(−2.40)	(−2.40)	(−1.58)	(−4.12)
Control Variables:								
Overlap with Earnings Announcement	0.005***	0.004**	0.006***	0.002	0.002***	0.001**	0.002**	0.002**
	(3.78)	(2.20)	(5.16)	(1.35)	(2.95)	(2.09)	(2.03)	(2.20)
Δ *Dividend per Share*	0.054***	0.050**	0.206***	−0.081**	0.005	−0.002	0.198***	−0.113***
	(3.52)	(2.48)	(5.94)	(−2.51)	(0.24)	(−0.10)	(6.38)	(−3.69)
Δ *Earnings per Share*	−0.002	−0.001	0.001	−0.004**	0.003*	0.004*	0.006***	0.001
	(−1.08)	(−0.26)	(0.60)	(−2.02)	(1.80)	(2.02)	(3.52)	(0.46)
Log*(Total Assets)*	−0.002***	−0.002***	−0.003***	−0.002***	−0.002***	−0.002***	−0.002***	−0.002***
	(−8.35)	(−10.19)	(−6.93)	(−4.84)	(−10.83)	(−9.48)	(−8.12)	(−7.91)
Market-to-Book	−0.000	−0.000	0.000	−0.000	0.000	−0.000	0.000	0.000
	(−0.11)	(−0.37)	(0.04)	(−1.63)	(0.56)	(−0.31)	(1.24)	(0.08)
Leverage	0.008**	0.008	0.007*	0.001	0.004*	0.005**	0.001	0.002
	(2.10)	(1.67)	(1.77)	(0.67)	(1.77)	(2.21)	(0.59)	(1.14)
Return on Assets	0.012	0.012	0.005	0.011	0.002	−0.009	0.002	−0.002
	(1.08)	(0.74)	(0.73)	(1.45)	(0.20)	(−0.78)	(0.19)	(−0.18)
Country-, Industry-, and Year-Fixed Effects	Included	Included	Included	Included	Included	Included	Included	Included
Adjusted R^2	7.2%	7.0%	9.1%	8.3%	8.1%	8.7%	9.8%	8.0%
N	61,257	33,119	38,746	11,972	61,306	35,491	37,179	12,682

(*Continued*)

TABLE 6—*Continued*

Panel B: Sensitivity analyses of the dividend announcement returns around mandatory IFRS adoption and insider trading enforcement

	Mandatory IFRS Adoption				Insider Trading Enforcement			
Three-Day Absolute Dividend Announcement Returns as Dependent Variable	(1) Firm-Fixed Effects (Full Sample)	(2) Firm-Fixed Effects (Constant Sample)	(3) No U.S. Observations	(4) No U.S. Observations & No Year 2008	(1) Firm-Fixed Effects (Full Sample)	(2) Firm-Fixed Effects (Constant Sample)	(3) No U.S. Observations	(4) Without Year of Δ IT Enforcement
Informational Events:								
IFRS Adoption	−0.003*	−0.004***	−0.004*	−0.004*	–	–	–	–
	(−1.78)	(−2.92)	(−1.82)	(−1.99)				
IT Enforcement	–	–	–	–	−0.003	−0.004*	−0.006***	−0.005**
					(−1.59)	(−2.05)	(−2.91)	(−2.47)
Control Variables:								
Overlap with Earnings Announcement	0.004**	0.003	0.004***	0.005***	0.002***	0.002**	0.002***	0.002***
	(2.35)	(1.37)	(3.64)	(3.75)	(3.85)	(2.07)	(2.96)	(2.74)
Δ *Dividend per Share*	0.035***	0.024	0.060***	0.063***	−0.007	−0.007	0.014	0.005
	(2.80)	(1.22)	(3.82)	(3.21)	(−0.30)	(−0.29)	(0.60)	(0.24)
Δ *Earnings per Share*	−0.002	−0.000	−0.000	0.002	0.004**	0.005**	0.004**	0.003
	(−1.07)	(−0.15)	(−0.05)	(1.63)	(2.42)	(2.43)	(2.39)	(1.63)
Log*(Total Assets)*	−0.001	−0.001	−0.003***	−0.003***	−0.002***	−0.001	−0.002***	−0.002***
	(−0.57)	(−0.71)	(−11.89)	(−9.24)	(−2.76)	(−0.95)	(−10.44)	(−10.74)
Market-to-Book	−0.001**	−0.001	0.000	0.000	−0.001**	−0.000	0.000	0.000
	(−2.25)	(−1.12)	(0.54)	(0.58)	(−2.07)	(−1.68)	(0.15)	(0.48)
Leverage	0.005	0.004	0.009**	0.009**	0.003	0.001	0.005***	0.004*
	(1.18)	(0.75)	(2.50)	(2.38)	(0.78)	(0.37)	(2.70)	(1.71)
Return on Assets	0.009	0.005	0.011	0.009	−0.001	−0.006	0.008	0.002
	(0.78)	(0.38)	(0.93)	(0.87)	(−0.12)	(−0.45)	(0.76)	(0.21)
Country-, Industry-, and Year-Fixed Effects	Year- & Firm-Fixed Effects	Year- & Firm-Fixed Effects	Included	Included	Year- & Firm-Fixed Effects	Year- & Firm-Fixed Effects	Included	Included
Adjusted R^2	35.8%	28.2%	6.3%	6.6%	33.4%	23.7%	7.4%	8.1%
N	61,257	33,119	51,420	46,555	61,306	35,491	46,268	60,621

(*Continued*)

TABLE 6—*Continued*

Panel C: Dividend announcement returns for firms not directly affected by the informational event

	Around Mandatory IFRS Adoption			Around Insider Trading Enforcement	
Three-Day Absolute Dividend Announcement Returns as Dependent Variable	(1) Voluntary IFRS Firms (All Adopters)	(2) Voluntary IFRS Firms (Serious Adopters)	(3) U.S. Cross-Listed Firms	(1) Voluntary IFRS Firms (All Adopters)	(2) U.S. Cross-Listed Firms
Counterfactual Firms:					
Voluntary IFRS Firms	−0.003	−0.001	–	−0.008	–
	(−1.36)	(−0.18)		(−0.40)	
U.S. Cross-Listed Firms	–	–	−0.000	–	0.008***
			(−0.13)		(4.46)
Informational Event Firms:					
IFRS Adoption	−0.004**	−0.004**	−0.004**	–	–
	(−2.16)	(−2.15)	(−2.18)		
IT Enforcement	–	–	–	−0.005**	−0.005**
				(−2.40)	(−2.40)
F-Test for Difference Across Coefficients [*p*-value]	[0.670]	[0.394]	[0.317]	[0.875]	[0.000]
Indicator for Counterfactual Firms	Included	Included	Included	Included	Included
Control Variables	Included	Included	Included	Included	Included
Fixed Effects	Included	Included	Included	Included	Included
N	63,042	61,762	62,023	61,335	61,410

The table reports changes in the information content of firms' dividend announcements following a significant change in the information environment. We consider two informational events: (1) the mandatory introduction of IFRS reporting (from 2001 to 2008), and (2) the first enforcement of insider trading (IT) laws (from 1993 to 2004). We report results for the full sample (see table 1) and, where indicated, a "constant" sample for which we require at least eight observations per firm. The table reports OLS coefficient estimates and (in parentheses) *t*-statistics based on robust standard errors clustered by country from regressing the absolute values of the three-day *Dividend Announcement Returns* on an informational event indicator plus controls. The *IFRS Adoption* variable takes on the value of "1" for fiscal years ending on or after December 31 of the year of the IFRS mandate; the *IT Enforcement* variable takes on the value of "1" for all fiscal years ending in or after the year of the first IT prosecution. For details on the remaining variables, see tables 1 and 2. In panel A, we report results for (1) all announcements of dividend payments, (2) the announcement of dividend per share increases only, and (3) the announcement of dividend per share decreases only. In panel B, we report the following sensitivity analyses: we replace the country- and industry-fixed effects with firm-fixed effects for either the full sample (1) or the constant sample (2). (3) We exclude the largest sample country from the analysis (i.e., the United States). (4) We further exclude the year of the financial crisis (i.e., 2008) or, in the IT setting, omit the year in which the first IT prosecution took place in a country. In panel C, we use firms that voluntarily switched to IFRS reporting before it became mandatory (Daske et al. [2013]) and foreign firms whose shares are listed on a U.S. exchange (Hail and Leuz [2009]) as an additional benchmark group. That is, we add a separate binary indicator for these counterfactual firms to the model (*Voluntary IFRS Firms* and *U.S. Cross-Listed Firms*), and code it as "1" beginning on the informational event date. Around mandatory IFRS adoption, we do this separately for all voluntary IFRS firms and only for those voluntary IFRS firms that showed a serious commitment to more transparency around the change in accounting standards under any of the three classifications in Daske et al. [2013], that is, based on a firm's changes in its reporting behavior, reporting environment, and reporting incentives. To capture selection effects, we also include a binary indicator variable that takes on the value of "1" for all firm-years of the counterfactual firms. We require the voluntary IFRS and U.S. cross-listed firms to have at least one observation pre and post the informational event. Panel C also reports *p*-values (in brackets) from *F*-tests comparing coefficients. Throughout the table, we include country-, industry-, and year-fixed effects in the regressions, but do not report the coefficients.

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

creases conform with investors' priors about dividends serving less of a role as a commitment device once the information environment has improved. Consequently, we expect a higher reduction in information content for dividend decreases (from relatively more information content in the pre period to relatively less in the post period) than dividend increases (from relatively less information content in the pre period to relatively more in the post period). The control variables in the models behave largely as expected. In particular, the closeness of an earnings announcement has positive spillover effects, and the magnitude of the dividend-per-share change matters. Moreover, large firms with a generally richer information environment convey less information during the days of the dividend announcements.

Next, we repeat some of the robustness tests for the information content analysis, and report results in panel B of table 6. We replace country- and industry-fixed effects with firm-fixed effects (Models 1 and 2), eliminate the U.S. observations from the sample (Model 3), and, in the IFRS setting, also drop the year 2008 or, in the IT setting, drop the year of the initial prosecution of the new laws (Model 4). Corroborating our earlier results, the coefficient on *IFRS Adoption* and *IT Enforcement* is always negative and, with the exception of one of the firm-fixed effects specifications, significant at the 10% level or better (two-tailed).

Finally, in panel C of table 6, we contrast the treatment effects with the change in information content for voluntary IFRS adopting firms and firms with a U.S. cross-listing around the two informational events. That is, we add these counterfactual firms to the sample and include a separate binary indicator for them in the model (coded as "1" beginning at the informational event date).[33] The table allows the following insights: first, when we include the additional benchmark firms, the treatment effect of mandatory IFRS adoption and IT enforcement is largely unaffected. Second, neither voluntary IFRS firms (all or just the serious adopters) nor U.S. cross-listed firms experience a significant decline in information content around the two events. The latter result suggests that these firms presumably were already transparent enough so that investors did not have to rely on dividend payouts to mitigate information asymmetry. Overall, the information content findings align with the propensity tests, and, taken together, suggest that, after an improvement of the common information in the economy, managers *as well as* investors rely less on dividend payouts.

[33] We use the same data sources to identify the counterfactual firms as in table 4, panel C, and require voluntary IFRS and U.S. cross-listed firms to have at least one observation pre and post the informational event. Because of the earlier event period for IT enforcement, the number of counterfactual firms (with data available) is relatively small so that the results have to be interpreted cautiously.

4.4 CROSS-SECTIONAL ANALYSES OF THE PROPENSITY TO PAY DIVIDENDS

In this section, we provide cross-sectional evidence along the two dimensions "extent of the agency problem" and "strength of the information shock" to corroborate our main findings of a lower propensity to pay dividends following a shock to the information environment. We expect firms suffering from more severe agency problems, due to institutional or firm-specific reasons, to benefit more from a reduction in information asymmetry between managers and investors. Similarly, the reduction in information asymmetry should be greater the stronger the information shock. In both cases we expect to find a more pronounced decline in dividend payouts after the event. To test these predictions, we conduct cross-sectional analyses by estimating the following extension of the logit model in equation (1):

$$\begin{aligned} Pr(\textit{Dividend Payments}) = {} & \beta_0 + \beta_1 \textit{InfoEvent} + \beta_2 \textit{InfoEvent} \times \textit{PART} \\ & + \beta_3 \textit{PART} + \sum \beta_j \textit{Controls}_j \\ & + \sum \beta_i \textit{Fixed Effects}_i + \varepsilon. \end{aligned} \tag{3}$$

PART stands for a (binary or continuous) partitioning variable that lets us examine whether the propensity of dividend payouts systematically differs across various subsets of sample firms. We include the partitioning variable as a separate main effect as well as interaction term with the *InfoEvent* indicator. Consequently, in the case of a binary *PART* variable, the model in equation (3) estimates the propensity relation separately for each cell of a two-by-two matrix along the treatment effect (e.g., mandatory IFRS adoption yes or no) and the partitioning dimension (e.g., investor protection strong or weak). The remaining variables in equation (3) are the same as before.

In table 7, panel A, we report results of estimating equation (3) partitioning by the extent of the presumed agency problem.[34] We only report the main variables of interest together with an *F*-test for the joint significance of the sum of two coefficients, but the full set of controls is included. First, in line with La Porta et al. [2000], we use a country's *Legal Origin* as a proxy for its investor protection. The rights of minority shareholders are arguably better protected in common law countries than in code law countries; consequently a more serious information asymmetry problem should exist in the latter countries. Consistent with this argument and the substitute model of agency, the reduction in dividend payouts is more pronounced where investor protection is weak. That is, while the main effect of the *InfoEvent* variable representing code law countries is always significantly negative, the

[34] We exclude the U.S. observations in our cross-sectional tests of the IFRS setting to reduce the potential effects of the financial crisis. Including those observations produces very similar but slightly weaker results.

TABLE 7

Cross-Sectional Analyses of the Changes in Dividend Payouts Around Informational Events

Panel A: Partitions based on the extent of the agency problem

	Mandatory IFRS Adoption (No United States)			Insider Trading Enforcement		
Dividend Payments as Dependent Variable	(1) Legal Origin	(2) Inside Ownership	(3) Equity Financing	(1) Legal Origin	(2) Inside Ownership	(3) Equity Financing
Informational Event Across Partitions:						
(1) *InfoEvent*	−0.445***	−0.295	−0.335**	−0.675**	−0.244	−0.516***
	(−2.78)	(−1.27)	(−2.44)	(−2.57)	(−0.66)	(−2.85)
(2) *InfoEvent* × *PART*	0.185*	−0.005	−0.010	0.244	−0.021**	−0.317**
	(1.75)	(−1.48)	(−0.96)	(0.83)	(−2.42)	(−2.09)
(3) *PART*	–	0.006**	−0.080	–	0.021**	−0.002
		(2.37)	(−1.57)		(2.49)	(−0.02)
F-Test for Sum of (1) + (2) [*p*-value]	[0.060]	[0.193]	[0.014]	[0.036]	[0.463]	[0.001]
Control Variables	Included	Included	Included	Included	Included	Included
Fixed Effects	Included	Included	Included	Included	Included	Included
N	112,838	38,311	112,838	143,957	64,641	143,957

(*Continued*)

TABLE 7—*Continued*

Panel B: Partitions based on the strength of the information shock

	Mandatory IFRS Adoption (No United States)			Insider Trading Enforcement		
Dividend Payments as Dependent Variable	(1) EU Countries	(2) Δ Enforcement	(3) Serious Adopters	(4) Emerging Markets	(5) Δ Analyst Following	(6) Δ Stock Liquidity
Informational Event Across Partitions:						
(1) *InfoEvent*	−0.227	−0.218	−0.298*	−0.257	−0.413**	−0.245
	(−1.60)	(−1.46)	(−2.17)	(−1.00)	(−2.08)	(−0.83)
(2) *InfoEvent* × *PART*	−0.212**	−0.269**	−0.183**	−0.478	−0.407*	−0.656**
	(−1.96)	(−2.40)	(−2.27)	(−1.46)	(−1.75)	(−2.30)
(3) *PART*	–	0.100	0.126**	–	0.461**	0.864***
		(0.96)	(2.02)		(2.09)	(3.47)
F-Test for Sum of (1) + (2) [*p*-value]	[0.005]	[0.002]	[0.001]	[0.003]	[0.000]	[0.000]
Partitioning Variable (raw values)	–	–	Included	–	Included	Included
Control Variables	Included	Included	Included	Included	Included	Included
Fixed Effects	Included	Included	Included	Included	Included	Included
N	112,838	112,838	88,571	143,957	143,957	126,549

The table presents cross-sectional analyses of changes in firms' dividend payment behavior following a significant change in the information environment. In panel A, we divide the sample based on the extent of the presumed agency problem and use the following partitioning variables (*PART*): (1) We distinguish between countries of common law *Legal Origin* ("1") and code law legal origin ("0"). For countries with missing coding in La Porta et al. [1998], we assign them with what fits best. (2) *Inside Ownership* measured as the percentage of closely held shares for a firm in a given year (Worldscope field 08021). Because of nonlinearities in firms' ownership structure, we truncate this continuous variable above the country mean values. (3) We set the *Equity Financing* variable to "1" for firms with a history of equity financing, that is, if at any point over the sample period prior to the informational event the firm externally raised equity capital. Data on equity issues are from SDC Platinum. In panel B, we divide the sample based on the presumed strength of the informational event and use the following partitioning variables (*PART*): (1) We distinguish between *EU Countries* ("1") and others ("0"). (2) We partition the treatment firm-years into those with an increase in *Enforcement* ("1") and the rest ("0"), captured by the year-to-year change (Δ) in the rule of law index from Kaufmann, Kraay, and Mastruzzi [2009]. (3) We distinguish between *Serious Adopters* ("1"), that is, firms that showed an above median change in their reporting incentives around mandatory IFRS adoption as measured in Daske et al. [2013], and label adopters with a below median change ("0"). (4) We distinguish between countries from *Emerging Markets* ("1") and developed market countries ("0"). The classification is from the Morgan Stanley Capital International database. (5) We set the Δ *Analyst Following* variable to "1" for firm-years with positive year-to-year changes in the number of analysts following the firm as indicated in I/B/E/S. (6) Δ *Stock Liquidity* takes on the value of "1" for firm-years with positive year-to-year changes in market liquidity. We measure liquidity as the yearly median of the Amihud [2002] illiquidity metric (i.e., daily absolute stock returns divided by US$ trading volume). The table reports results from regressing the *Dividend Payments* indicator on the main effects and the interaction term of the respective partitioning variable with the *IFRS Adoption* variable or *IT Enforcement* variable. In the IFRS setting, we exclude the U.S. observations from the analyses. The panel only reports the logit coefficient estimates and (in parentheses) *z*-statistics of the main variables of interest, but includes the full set of controls and fixed effects (see Model 1 in panel B of table 3). In the *Serious Adopters*, Δ *Analyst Following*, and Δ *Stock Liquidity* regressions we include the raw values of the partitioning variables as additional controls. We also report *p*-values (in brackets) from *F*-tests assessing the statistical significance of the sum of two coefficients.

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

interaction term representing the marginal effect for common law countries is positive (and significant in the IFRS setting).[35]

Next, we examine two firm-level proxies of potential agency problems. *Inside Ownership* stands for the proportion of holdings by management and controlling shareholders; *Equity Financing* represents firms' history of tapping into the equity markets.[36] More concentrated ownership makes it more likely for managers to exploit their relative position of strength via misappropriation of FCF, and hence these firms suffer from more severe agency problems, while firms regularly relying on external capital markets should reap larger benefits from a reduction in information asymmetry. In line with these arguments, we find that the interaction term is always negative (but only significant in the IT setting). These findings suggest that firms with higher perceived agency costs and benefits from lowering them, display a stronger reduction in dividend payouts following the informational events.

In panel B of table 7, we report results estimating equation (3) for partitions by the strength of the presumed information shock. For details on the variable measurement, see the notes to the table. First, we consider mandatory IFRS adoption. Prior literature documents substantial heterogeneity of the capital-market and transparency effects around the switch in accounting standards. For instance, it has been shown that liquidity effects are stronger in the European Union (Daske et al. [2008]) when combined with changes in enforcement (Christensen, Hail, and Leuz [2013]) and for firms with a substantial change in reporting incentives around the mandate (Daske et al. [2013]). Consistent with these results, we find that the reduction in dividend payouts is significantly larger in EU countries, in years with an improvement in the general enforcement infrastructure (measured as positive changes in the rule of law index from Kaufmann, Kraay, and Mastruzzi [2009]), and for "serious" mandatory IFRS adopters (based on a change in the reporting incentive factor around the switch as computed by Daske et al. [2013]).

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[35] The results do not square with La Porta et al. [2000], who find evidence in support of the outcome model. Using their institutional variables, sample selection criteria, and estimation technique, we are able to replicate their findings for the year 1994 with our data (but only after limiting the Japanese observations to the 100 largest firms). However, when we expand the sample, apply panel estimation, and use either the *Legal Origin* or the Kaufmann, Kraay, and Mastruzzi [2009] *Rule of Law* variables, the main effect of investor protection as well as the interaction term with growth (measured by market-to-book) are hardly ever significant and often have the opposite sign. At the same time, the main effect for growth is always significantly negative.

[36] The relation between ownership and (equity) agency issues is likely nonlinear, suggesting that, above a certain threshold, inside ownership actually increases instead of decreases alignment with investor interests (e.g., Ang, Cole, and Lin [2000]). To reflect this trade-off, we only use the lower part of the distribution of closely held shares in our cross-sectional tests (with the respective country means as cutoff values).

For the IT setting, Bushman, Piotroski, and Smith [2005] show that analyst following increases more in emerging markets, suggesting a larger improvement in publicly available information. Consistent with this argument, we find a negative (but insignificant) coefficient on the interaction term in our model (column 4), representing the marginal effect for emerging markets. When we partition the IT sample using binary indicator variables for firm-years with positive changes in analyst following or market liquidity (measured using the Amihud [2002] price impact metric), we find that firms with improvements in analyst coverage and liquidity exhibit stronger reductions in dividend payouts following IT enforcement. These results are consistent with stronger informational changes leading to larger adjustments in firms' dividend policies.

5. *Conclusion*

This paper examines changes in firms' propensity to pay dividends and the information content of dividend announcements following a positive exogenous shock to the information asymmetry problem between managers and investors. Thus, we analyze the value of dividend payments as a voluntary commitment device to mitigate the agency costs of FCF from the firm's and the market's perspective. We argue that more precise common information ex ante reduces adverse selection and makes it easier ex post for minority investors to monitor corporate insiders. This improvement in information asymmetry can result from an increase in transparency, but also from better monitoring and enforcement of extant disclosure regulation. All these forces should reduce the demand for and the value of dividend payouts as a commitment device. Conversely, minority shareholders might exert legal and market pressures to extract more cash from the firm via dividends. We test these predictions for a global sample of firms around two events that serve as proxies for a general improvement of the information environment, namely mandatory IFRS adoption and initial enforcement of new IT laws.

We find that, following the two events, firms are less likely to pay (or increase) dividends, but more likely to cut (or stop) such payments. The changes in dividend policy occur around the time of the informational shock, do not apply to firms with an arguably better information environment to begin with, and are more pronounced when the agency problem is larger and the informational shock stronger. We further find that the information content of dividends, measured as three-day absolute announcement returns, is lower after the two events. In sum, our findings lend support to the FCF-centric theories of dividend policy, specifically the substitute (but not the outcome) model of agency (La Porta et al. [2000]), in that they show that enhancing the information environment significantly lowers investors' and managers' demand for *and* the perceived value of dividend payouts. They also suggest that regulatory changes to the disclosure environment have real consequences in terms of reducing the cash

disbursements to investors (relative to an unaffected group of benchmark firms).

Several caveats apply to our study. First, we only focus on dividend payments. However, alternative (less costly) ways of disbursing cash to shareholders than dividend payments exist. While we control for share repurchases in our tests, the informational shock might also affect the way in which the two instruments interrelate. Second, regulatory changes to the disclosure environment could enhance the credibility of financial reports, which in turn makes it possible for managers to move away from cash dividends with no or little discretion to more subjective (but less costly) means of conveying their commitment to avoid overinvestment (e.g., management forecasts, conference presentations, firm-initiated media coverage). Third, our research design is more or less agnostic about the specific channels that lead to a reduction of the agency problem (e.g., better firm disclosures, financial analyst information acquisition and dissemination, more informative stock prices, and corporate governance). We also cannot preclude that alternative channels contribute to our findings (e.g., via expanded growth opportunities from lower cost of capital following the information shock). We do, however, conduct sensitivity analyses to ensure that our main results prevail in light of several competing explanations. That said, all these channels originate from a reduction in information asymmetries between corporate insiders and outsiders, which is at the core of our conceptual argument and ultimately what our empirical evidence entails.

APPENDIX

TABLE A1

Institutional Details Relevant for Firms' Dividend Policy Around Mandatory IFRS Adoption and Insider Trading Enforcement

Country	(1) Informational Event (IFRS / IT Enforcement)	(2) Are IFRS Required/ Permitted for Single Entity Accounts of Listed Firms?	(3) Is Profit Distribution Based on IFRS Accounts Possible (Mandatory)?	(4) Are Share Repurchases Allowed (If Yes, Since When)?	(5) Are There Significant Tax Changes Around IFRS Adoption?	(6) Are There Significant Tax Changes Around IT Enforcement?
Argentina	– / IT Enfor.	–	–	Yes	–	No
Australia	IFRS / IT Enfor.	N.a.	N.a.	Yes [<1993]	No	No
Austria	IFRS / –	No	No	Yes	No	–
Belgium	IFRS / IT Enfor.	No[a]	No	Yes	No	Yes[k]
Chile	– / IT Enfor	–	–	Yes	–	No
Czech Republic	IFRS / IT Enfor.	No	Yes	Yes	Yes[h]	No
Denmark	IFRS / IT Enfor.	Required/permitted[b]	Yes	Yes [2000]	Yes[i]	No
Finland	IFRS / IT Enfor.	Permitted[c]	Yes	Yes [1997]	Yes[j]	Yes[l]
France	IFRS / –	No	No	Yes [1998]	Yes	–
Germany	IFRS / IT Enfor.	No	No	Yes [1998]	No	No
Greece	IFRS / IT Enfor.	Required	Yes	Yes [<1993]	No	No
Hong Kong	IFRS / IT Enfor.	N.a.	N.a.	Yes	No	No
Hungary	IFRS / IT Enfor.	No	No	Yes	No	Yes[h]
India	– / IT Enfor.	–	–	Yes [1999]	–	No
Indonesia	– / IT Enfor.	–	–	Yes	–	No
Ireland	IFRS / –	Permitted	Yes	Yes	No	–
Israel	IFRS / –	N.a.	N.a.	Yes	No	–
Italy	IFRS / IT Enfor.	Required[d]	Yes	Yes [<1993]	No	No
Luxembourg	IFRS / –	Permitted	No	Yes [<1993]	No	–
Malaysia	– / IT Enfor.	–	–	Yes [1997]	–	No
Netherlands	IFRS / IT Enfor.	Permitted	Yes	Yes [<1993]	No	No
New Zealand	IFRS / –	N.a.	N.a.	Yes	No	–
Norway	IFRS / –	Permitted[e]	N.a.	Yes [1999]	Yes[j]	–
Pakistan	IFRS / –	N.a	N.a.	Yes	No	–

(*Continued*)

TABLE A1—*Continued*

Country	(1) Informational Event (IFRS / IT Enforcement)	(2) Are IFRS Required/ Permitted for Single Entity Accounts of Listed Firms?	(3) Is Profit Distribution Based on IFRS Accounts Possible (Mandatory)?	(4) Are Share Repurchases Allowed (If Yes, Since When)?	(5) Are There Significant Tax Changes Around IFRS Adoption?	(6) Are There Significant Tax Changes Around IT Enforcement?
Peru	– / IT Enfor.	–	–	Yes [1997]	–	Yes[k]
Philippines	IFRS / –	N.a.	N.a.	Yes	No	–
Poland	IFRS / IT Enfor.	Permitted[f]	Yes	Yes [1998]	No	Yes[h]
Portugal	IFRS / –	Permitted[g]	Yes	Yes	No	–
Singapore	IFRS / –	N.a.	N.a.	Yes [1998]	No	–
South Africa	IFRS / –	N.a.	N.a.	Yes [1999]	No	–
Spain	IFRS / IT Enfor.	No	No	Yes [<1993]	No	Yes[k]
Sri Lanka	– / IT Enfor.	–	–	N.a	–	No
Sweden	IFRS / –	No	No	Yes [2000]	No	–
Switzerland	IFRS / IT Enfor.	Permitted	No	Yes [1992]	No	No
Thailand	– / IT Enfor.	–	–	Yes	–	No
Turkey	IFRS / IT Enfor.	N.a.	N.a.	Yes	No	No
United Kingdom	IFRS / –	Permitted	Yes	Yes [<1993]	No	–

Additional explanations: (a) Belgium: required for real estate investment firms. (b) Denmark: required for nonfinancial firms without consolidated accounts; permitted for all other firms. (c) Finland: except for insurance firms and requiring a certified auditor. (d) Italy: except for insurance firms. (e) Norway: required for firms without consolidated accounts. (f) Poland: permitted for publicly traded firms or whose parent uses IFRS. (g) Portugal: permitted for firms whose parent uses IFRS, except for financial institutions. (h) Czech Republic, Hungary, and Poland: change in capital gains tax rate. (i) Denmark: change in tax regime. (j) Finland and Norway: change in tax regime and dividend tax rate. (k) Belgium, Peru, and Spain: change in dividend tax rate. (l) Finland: change in tax regime and capital gains tax rate.

The table summarizes institutional characteristics of countries that experienced our two informational events (i.e., IFRS adoption and/or IT enforcement) as indicated in column (1). We draw the information for column (2) from a report by the European Commission on the "Implementation of the IAS Regulation (1606/2002) in the EU and EEA" (February 7, 2012). The information in column (3) is from KPMG's "Feasibility Study on Capital Maintenance," January 2008, commissioned by the European Commission (contract ETD/2006/IM/F2/71). Data in column (4) are from Lasfer [2002], Sabri [2003], McLean, Pontiff, and Watanabe [2009], and Web sites of local supervisory authorities and exchanges. Note that almost all countries have some restrictions on share repurchases (e.g., they limit share repurchases to 10% of shares outstanding). The information in columns (5) and (6) is from the OECD tax database and various tax surveys and summaries published by the big audit firms. We consider tax rate changes in the three years surrounding the event as significant if they exceed an increase or decrease of 5% in dividend or capital gains tax rates. "N.a." denotes that the information is not available in the indicated data sources.

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