Dividend Signaling and Information Shocks

Luzi Hail
The Wharton School, University of Pennsylvania

Ahmed Tahoun
London Business School

Clare Wang
Kellogg School of Management, Northwestern University

September 15th, 2012

PRELIMINARY
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Abstract

This paper examines changes in firms' dividend signaling following an exogenous shock to the information environment. Traditional signaling models predict that if it becomes easier for investors to distinguish between good and bad type firms, managers of good type firms will lower their signaling efforts. To test this prediction, we analyze the dividend payment behavior for a global sample of firms around the mandatory adoption of IFRS and around the initial enforcement of new insider trading laws. Both events have the potential to improve the general information environment in the economy. We find that following the two events firms are less likely to pay (or increase) cash dividends, but more likely to cut (or stop) such payments. The changes in dividend policy occur around the time of the informational shock and only in countries subject to the regulatory change. In further analyses we also find that the information content of dividends, measured as three-day absolute announcement returns, are lower after the informational events. The findings underscore that costs of dividend signaling, among other things, depend on the extent of information about the other firms in the economy.

JEL classification: G14, G15, G35, K22, M41

Key Words: *Dividend policy, Payout policy, Signaling, International accounting, Information environment, IFRS, Insider trading laws*

1. Introduction

In perfect and complete financial markets a firm's value is not affected by its dividend policy (Miller and Modigliani 1961). However, if markets are less than perfect, for instance, in the presence of taxes, asymmetric information, or incomplete contracts, dividend payouts are economically meaningful. In this study, we focus on the role of cash dividends as a means for managers to convey information about their type, firm profitability, risk, or other value relevant items to corporate outsiders.[1] The basic idea behind such dividend signaling models is that managers adjust dividend payments to signal their private information about the prospects of the firm to outside investors in a way that is too costly for lower quality firms to replicate (e.g., Bhattacharya 1979; Miller and Rock 1985; John and Williams 1985). Thus, dividends serve as a costly mechanism that helps management credibly overcome the adverse selection problem.

While most empirical studies of dividend signaling examine the relation between today's signal and future realizations of firm performance (e.g., Benartzi, Michaely, and Thaler 1997; Nissim and Ziv 2001; Grullon, Michaely, and Swaminathan 2002), we study the relative costs of dividend payouts as a signal and how firms' cost tolerance varies as a function of the extent of the adverse selection problem between corporate insiders and outsiders. More specifically, we examine changes to firms' dividend signaling behavior when they experience an exogenous shock to the information environment. The intuition is that a richer information environment with more useful and transparent accounting information should mitigate part of the adverse selection problem between managers and investors, thereby decreasing the propensity of managers to communicate private information through dividend signaling. Such a prediction

[1] We note that the use of dividends for signaling purposes is not uncontested in the literature (see e.g., Allen and Michaely 2003 for an overview). However, we assume that signaling plays at least some role in determining firms' payout policy (e.g., Bernheim and Wantz 1995; Nissim and Ziv 2001; Braggion and Moore 2011).

follows from the general setup of the signaling models. With a good type and a bad type firm, the good type firm tries to distinguish itself by issuing a signal as long as the costs associated with the signal fall below the additional valuation premium from escaping the pooling equilibrium. If the firms' information environment improves, for instance, because firms are required to adopt a more transparent set of accounting standards or existing reporting and disclosure rules are more tightly enforced, outside investors should be better able to assess each individual firm's type a priori. As a result, the expected valuation premium for the good type firm becomes lower, and (assuming the costs of signaling remain the same) the firm is less likely to issue a dividend signal. Hence, among other things, a firm's dividend signaling behavior should reflect changes in the extent of the adverse selection problem over time.[2]

We empirically test these predictions in a large global dataset with dividend payment information for firms from 38 countries over the 1993 to 2008 period. Using international data allows us to exploit the larger variation in adverse selection across countries and increases the likelihood of identifying firms that use dividend payouts for signaling purposes.[3] 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.

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[2] We can derive the same empirical predictions from the disclosure literature in that we interpret dividends as a voluntary disclosure about the risky assets of the firm (e.g., Jung and Kwon 1988; Verrecchia 1990). See Section 2 for details.

[3] It has been shown that dividend signaling is prevalent in countries like the U.K. (Braggion and Moore 2011) or informative with regard to current earnings in countries like Germany (Amihud and Murgia 1997). At the same time, the U.S. evidence on dividend signaling is rather mixed (e.g., DeAngelo, DeAngelo, and Skinner 2000; Nissim and Ziv 2001; Grullon, Michaely, and Swaminathan 2002). One explanation for these weaker findings is that there exist several (less costly) alternatives to dividend signaling. For instance, share repurchases are very popular in the U.S. (Fama and French 2001). Yet, we find that in our global sample the proportion of firms with share repurchases consistently hovers below the ten percent mark, and that share repurchases rather behave as complements than substitutes for dividend signaling.

Specifically, we utilize two separate country-level events that both have the potential to improve the general information environment for a large portion of the firms in an economy. First, we consider the mandatory adoption of International Financial Reporting Standards (IFRS) that took place in the mid 2000's around the globe. Compared to local GAAP in many countries, IFRS is more capital-market oriented and provides more extensive measurement and disclosure rules (e.g., Ding et al. 2007; Bae, Tan, and Welker 2008). Consistent with this notion, several studies have shown capital-market benefits, improvements of accounting properties, and positive effects on financial analysts' ability to forecast future performance around the mandatory adoption of IFRS (e.g., Barth, Landsman, and Lang 2008; Daske et al. 2008; Byard, Li, and Yu 2011).[4] 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 rather the first prosecution than the introduction of IT laws that matter for capital market participants to update their priors. Consistently, evidence suggests that analyst following increases, analysts forecast a broader set of measures, and financial reporting quality improves upon the restriction of insider trading (Bushman, Piotroski, and Smith 2005; Hail 2007; Zhang and Zhang 2012). Thus, both events are associated with a general improvement of the information environment. Moreover, because the events occur at the country level, they are largely exogenous for the individual firm.[5]

We start our analyses with providing descriptive evidence on firms' payout policies. For our global sample of firms contained in the Worldscope universe we find that the proportion of

[4] Note that we do not require or 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; e.g., Daske et al. 2012; Christensen, Hail, and Leuz 2012). We rather use mandatory IFRS adoption as a proxy for changes in firms' information environment due to various (undefined) reasons. Furthermore, the effects of IFRS adoption do not have to apply to each and every firm in the economy. As long as at least some bad type firms are affected, or management ex ante expects a leveling of the playing field, the firm might adjust its dividend policy.

[5] Unless a firm avoids IFRS reporting or IT enforcement by going private or moving the trading of its shares to an unregulated market.

dividend paying firms decreases from about 73% to 57% over the 1993 to 2008 period. At the same time, the proportion of firms with share repurchases, which in the U.S. have been shown to act as a substitute (Grullon and Michaely 2002), never exceeds 10%. Yet, when we zoom in on the two informational events and distinguish between treatment and benchmark firms, different trends appear. For instance, while the proportion of dividend paying firms after the IFRS mandate remains flat or decreases, the same number increases in countries with no change in the accounting standards.

To formally test these differential time-series patterns, we next conduct a difference-in-differences analysis, and estimate changes in the propensity of dividend payments following the two informational events using logit regression analysis. We find that after the mandatory adoption of IFRS and after the first enforcement of IT laws firms are less likely to pay cash dividends and, in particular for IT enforcement, undertake fewer dividend per share increases but more frequent dividend per share decreases (including the cessation of dividend payments). This finding holds in the full sample and, more to the point, in a sample for which we predict a dividend payment based on a dividend-signaling model calibrated with data from the U.K.[6] 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 signaling to begin with, namely firms whose shares were cross-listed on a U.S. exchange. At the same time, we do find fewer dividend payments for

[6] That is, following Braggion and Moore (2011), we estimate the dividend-signaling model in the U.K., and then apply the estimated coefficients to the full sample to identify firm-years in which the payment of dividends is likely to occur for signaling purposes (see Section 3 for details).

firms that voluntarily switched to IFRS before the mandate. Overall, the findings suggest a reduced propensity to issue dividend signals after a shock to the information environment.

In a second series of tests, we examine changes to the information content of dividend announcements following our two informational events. If dividend signaling becomes less valuable, we expect investors to make smaller revisions to their priors upon the release of the signal. We measure the information content of dividend signals with the three-day absolute abnormal announcement returns. Results from an OLS regression analysis indicate that dividend announcement returns are lower following the mandatory adoption of IFRS and the first enforcement of IT laws, not only compared to the firms' own history but also relative to the benchmark firms. This finding applies to all dividend payments, and separately for dividend per share increases and reductions. Again, we do not find lower dividend announcement returns for the subset of firms with a cross listing on a U.S. exchange, as one would expect if these firms already have more transparent reporting and rely less on dividend signaling. Similarly, there is no significant reduction in announcement returns for voluntary IFRS firms. Thus, in line with the propensity results, the information content analysis suggests that dividend signaling has become a less useful tool for managers to overcome the adverse selection problem after an information shock to the firms in the economy.

Finally, we extend our logic to a firm-specific instead of a country-wide informational event. That is, we center our analyses around the voluntary adoption of IFRS reporting and around the (voluntary) cross-listing on a U.S. exchange. Both firm events have been shown, under certain circumstances, to go along with an improvement of the information environment (e.g., Barth, Landsman, and Lang 2008; Daske et al. 2012; Bailey, Karolyi, and Salva 2006; Hail and Leuz 2009), and therefore have the potential to affect the relative costs of dividend signaling. Yet, in

this case the firm does not react to an exogenous information shock, but to its own disclosure choices.[7] Consistent with this idea, we find that the likelihood of dividend payments is lower after firms have voluntarily switched to IFRS reporting or listed their shares on a U.S. exchange.

Our study contributes to the literature in at least two ways. First, we show that an exogenous shock to the information environment affects firms' demand for and choice of dividends as a signaling device. This adds a new explanation for changes in payout policies for signaling purposes aside from taxes (Bernheim and Wantz 1995) or the availability of less costly substitutes (Grullon and Michaely 2002; DeAngelo, DeAngelo, and Skinner 2000). It also expands on the commonly found assumption in signaling models that to be effective, signaling has to be costly, and empirically shows that firms' cost tolerance of issuing a signal, among other things, depends on the extent of information about the other firms in the economy. Hence, dividend signaling might reflect a country's mandatory disclosure and reporting rules and regulatory environment. On a more basic level, our evidence provides support for the use of dividends as signaling device in a global sample.

Second, 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 affect firms' voluntary disclosure choices (if we interpret dividends as a signal about future performance) or have real consequences in terms of reducing the cash payouts to investors. This latter 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 just mitigates under-investment via relaxing financing constraints, but also by

[7] Similar to our main analyses, we do not require to identify the exact reasons for the change in the information environment or that all firms are equally affected for our predictions to apply. However, because by definition voluntary IFRS adoption and U.S. cross-listings are endogenous (with other factors also potentially affecting firms' dividend policy), we see this as a weaker power test.

increasing the availability of cash (from dividends). Finally, our evidence highlights the role that regulatory changes to the disclosure environment might play in reducing the deadweight costs of signaling (Miller and Rock 1985).

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 and information content analyses of dividend payments. Section 5 concludes.

2. Hypothesis Development and Related Literature

In this section, we discuss the general relation between the information environment and dividend signaling, and develop a simple expository model to derive our main hypotheses. We then review the empirical evidence on dividend signaling to place our predictions in context.

2.1. Information Environment and Dividend Signaling

Spence (1973, 1974) formalizes a theory of signaling, in which (privately informed) sellers in a marketplace emit a signal about a commodity and buyers without inside information respond to that signal. While Spence's primary focus was on the labor market, his theory has also been applied to financial markets in which there is an adverse selection problem with shareholders unable to distinguish (*a priori*) the 'quality' of a cross-section of firms (e.g., Bhattacharya 1979; Miller and Rock 1985). These signaling models build on the idea that managers (with private information about the prospects of the firm) can send a 'signal of quality' to outside investors which 'lower quality firms' find too costly to replicate (see Allen and Michaely 2003 for an overview). Many authors suggest that dividend announcements or payouts serve to convey such

inside information to corporate outsiders, and do so at a sensible cost. Hence, they consider dividends an ideal signaling device.

Most empirical studies of dividend signaling examine the relation between today's signal and future realizations of firm performance or focus on the tax-induced costs of signaling (see Section 2.2). At the same time, relatively little is known about the direct relation between the magnitude of the adverse selection problem and a firm's signaling behavior.[8] We contribute to filling this void by investigating whether an exogenous change in the information environment impacts the frequency and information content of firms' dividend signaling. Our primary hypotheses relate to a change in the information environment for the average firm in the economy, for instance, due to new disclosure and reporting regulation. The intuition is that a richer information environment with more useful accounting information should mitigate part of the adverse selection problem between managers and investors. This in turn decreases managers' incentives to communicate private information through financial signaling.

A simple theoretical characterization aids the exposition of the above intuition and serves as basis for our empirical predictions. There are two types of firms in the universe – good and bad. α represents the fraction of the good type, and $1-\alpha$ is the fraction of the bad type. The good type firm has a value of V_G, the bad type firm has a value of V_B, and $V_G > V_B$. The cost of signaling for the good type is K, and the cost of signaling for the bad type is $2K$. While investors do not know whether a specific firm (e.g., Firm$_i$) is the good or bad type, the fraction of the good type firms in the economy (i.e., α) is common knowledge.

In the base case with no information or very poor information, investors price every firm at $\alpha V_G + (1-\alpha)V_B$, which is the weighted average value and is less than V_G. In order to avoid being

[8] One exception is Dewenter and Warther (1998).

under-valued, the good type firm issues a signal to distinguish itself, but only if $V_G - K > \alpha V_G + (1-\alpha)V_B$. This implies that the upper bound of the signaling cost the good type firm is willing to bear equals $K = (1-\alpha)(V_G - V_B)$.

Now we introduce the effect of better information for the average firm. The critical assumption is that when the information environment improves, investors can assess the type of a specific firm (good or bad) more precisely *a priori*. For example, suppose Firm$_i$ is the good type. With better information, investors' updated priors for Firm$_i$ being the good type is larger than the unconditional probability (i.e., $\alpha_i > \alpha$). Consequently, the upper bound of the signaling cost the good type firm is willing to bear changes to $K' = (1-\alpha_i)(V_G - V_B)$. Under the assumption that $\alpha_i > \alpha$, we have $K' < K$. It follows that for the good type firm, the cost tolerance level of signaling has become lower in the richer information environment. Assuming that the absolute cost of signaling remains the same (e.g., K_i for Firm$_i$), more good type firms will hit the threshold level and not issue a signal any longer. With regard to dividends as a signaling device, this leads to the following hypothesis (in alternative form):[9]

H_1: After an exogenous improvement of the general information environment, there occur fewer dividend payments for signaling purposes.

Empirically, we expect to observe a lower propensity to pay dividends for firms subjected to an informational shock that improves financial reporting transparency. At the same time, these firms should be less likely to initiate or increase dividend per share payouts, and more likely to cease or cut such payments.

[9] We can also derive hypothesis H_1 from the voluntary disclosure literature. For instance, Jung and Kwon (1988, Proposition 3) and Verrecchia (1990, Corollary 2) show that the more is known about a set of risky assets a priori (or commonly), the less pressure the market exerts on a manger to reveal what he or she knows privately. If we interpret dividends as disclosure about the risky assets (e.g., confirming that earnings information is backed up by cash; see Amihud and Murgia 1997 for a sample of German firms), then an improvement in the general knowledge about the risky assets leads to fewer dividend payments.

Our second hypothesis deals with the market reaction to the signal. It follows from the above characterization. With better information the good type firm faces a lower valuation premium to be gained from signaling. That is, in a richer information environment (and without signaling), investors price the good type firm at the weighted average value of $\alpha_i V_G + (1-\alpha_i)V_B$, which is greater than the average value of $\alpha V_G + (1-\alpha)V_B$ with poor information. Thus, when better informed (and holding the absolute cost of the signal K_i constant), the average market reaction by investors should be lower upon the release of the signal. This leads to the following hypothesis regarding the information content of dividend signaling (in alternative form):

H_2: After an exogenous improvement of the general information environment, the information content of dividend payments for signaling purposes is lower.

Empirically, we expect to observe a reduced market reaction for all dividend payments regardless whether they mark an increase or decrease in dividends per share.

Finally, we briefly discuss the consequences that an information shock might have on firms that use signaling devices other than dividends or that do not rely on signaling. We distinguish two cases. First, if investors can already infer V_G from the firms' financial reports because their disclosures are transparent enough to avoid pooling, no dividend signaling is needed and the exogenous change in the information environment should have 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 market benefits due to lower information asymmetries (e.g., Doidge, Karolyi, and Stulz 2004; Hail and Leuz 2009). For these firms, a general improvement of the information environment likely has no effect at all. Second, there might be firms for which the information shock cancels out an existing signal. That is, the

good type firm uses a signaling device other than dividends whose effect on investors' priors is similar to the information shock. In that case, the good type firm likely has to adjust its signaling strategy and even initiate or increase dividend signaling. For instance, the voluntary adoption of IFRS has been shown, under certain circumstances, to improve a firm's transparency (e.g., Barth, Landsman, and Lang 2008; Daske et al. 2012), and hence could serve for signaling purposes. However, once IFRS reporting is mandatory, the value of the signal becomes moot, and firms might have to look for alternative ways to signal their type.[10]

2.2. Payout Policy as a Signaling Device

In this section, we briefly summarize the empirical evidence on dividend payout policy as a signaling device. For our study, we assume that signaling plays at least some role in determining a firm's payout policy.[11] The majority of dividend signaling studies focuses on U.S. firms, and we can classify them into three categories: (1) studies that examine the relation between dividend changes and subsequent earnings changes, (2) studies on the stock market reaction to unexpected dividend changes, and (3) studies on tax-based dividend signaling. The first two categories center on the necessary conditions for dividend signaling; the third category relies on the sufficient conditions for dividends to act as a costly signal.

Studies in the first category follow the argument that if managers' private information affects their decisions about dividend payouts, then dividend changes should be followed by subsequent earnings changes in the same direction. Consequently, forecasts of future earnings

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[10] Note that it is not clear whether voluntary IFRS adoption is an effective signaling tool because not all voluntary IFRS adopting firms necessarily improve the transparency of their financial reporting (Daske et al. 2012). In that case, we would expect H_1 and H_2 to apply when the general information environment improves (i.e., voluntary IFRS adopters should see fewer dividend payouts and a reduction in information content).

[11] Aside from signaling, several other explanations exist for firms' dividend policy such as agency conflicts (e.g., Lang and Litzenberger 1989; DeAngelo, DeAngelo, and Stulz 2006) or clientele effects (e.g., Dhaliwal, Erickson, and Trezevant 1999; Graham and Kumar 2006; Dahlquist, Robertsson, and Rydqvist 2007).

that include dividend information should be superior to those without dividend information. Many studies find only weak or no evidence of a systematic association between current dividend changes and future changes in earnings (e.g., Gonedes 1978; DeAngelo, DeAngelo, and Skinner 1996; Benartzi, Michaely, and Thaler 1997; Grullon, Michaely, and Swaminathan 2002). However, there are exceptions. For instance, Nissim and Ziv (2001) provide strong evidence that dividend changes are positively related to future earnings changes, profitability, and abnormal earnings. Similarly, for a sample of U.K firms at the turn of the 19th century (and therefore in a setting with little interference by taxation and other institutional constraints), Braggion and More (2011) find that contemporaneous dividend changes predict future earnings changes. Finally, Yoon and Starks (1995) extend the analysis of dividend payouts' predictive power to future capital expenditures and analyst earnings forecast revisions. All these latter studies provide support for the dividend-signaling hypothesis.

Studies in the second category argue that if dividends act as a signaling device about firms' future prospects, then changes in dividends should convey information to the market and lead to a reaction by investors. A number of studies report significant excess returns around the announcement of dividend changes: positive (negative) announcement returns are associated with positive (negative) changes in dividends (e.g., Petit 1972; Aharony and Swary 1980; Healy and Palepu 1988). This finding is consistent with dividend signaling.

Studies in the third category focus on a tax-based explanation of dividend signaling. All else equal, a dividend change of a given size should convey more information in periods when the tax differential between dividends and capital gains is higher. Consistent with this idea and hence dividend signaling, Bernheim and Wantz (1995) show that the share price reaction to dividend changes is larger in periods following an increase in dividend tax rates. Amihud and

Murgia (1997) study the market reaction to dividend changes in Germany where dividends are favorably taxed relative to capital gains. Contrary to the prediction from the tax-based signaling models, they find a similar market reaction to dividend changes as in the U.S.

Finally, there are two more studies, both in an international setting, adding to the debate on dividend signaling. First, Denis and Osobov (2008) examine dividend payout policies in the U.S., Canada, U.K., Germany, France, and Japan. They find little evidence of a systematic relation between the relative prices of dividend paying and non-paying firms and the propensity to pay dividends. Moreover, in each country 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 not the firms most likely in need of a costly signal to convey private information to the markets. Second, and probably most related in spirit to our study, Dewenter and Warther (1998) compare dividend policies in the U.S. and Japan. They show that Japanese firms, particularly members of a keiretsu, face less adverse selection and 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. This is in line with information asymmetries having an effect on dividend policy.

3. Research Design and Data

In this section, we describe our empirical identification strategy and develop the regression models to test our two main hypotheses. 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 signaling using a large panel dataset with yearly firm-level observations from 38 countries around the world. Specifically, we investigate whether (i) the propensity of firms to pay dividends, and (ii) the information content of dividend announcements change surrounding significant improvements in the information environment for the average firm in the economy. That is, we examine the effects of changes in the adverse selection problem on dividend signaling from both the perspective of the firm and the market. To test for changes in the propensity of paying dividends following an informational event (H_1), we estimate the following logit regression model:

$$Pr(Dividend\ Payments) = \beta_0 + \beta_1\ InfoEvent + \sum \beta_j\ Controls_j + \sum \beta_i\ Fixed\ Effects_i + \varepsilon. \quad (1)$$

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'. In some of the analyses, we replace the dividend payments variable with indicators for year-to-year increases (decreases) in dividends per share.

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 reduction in the adverse selection problem in an economy, namely the mandatory adoption of IFRS in many countries around the world and the first prosecution under newly introduced insider trading (IT) laws.[12] The first event led to accounting standards that compared to many local GAAPs are more capital-market oriented and provide more extensive measurement and disclosure rules (e.g.,

[12] Note that we do not stipulate that either IFRS adoption or IT enforcement *per se* lead to an improvement in the information environment, but rather these events proxy for changes in the disclosure and reporting policies of some firms around the time they took place.

Ding et al. 2007; Bae, Tan, and Welker 2008). Consistent 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 for at least some firms in the economy (e.g., Daske et al. 2008; Byard, Li, and Yu 2011; Landsman, Maydew, and Thornock 2012). The second event follows from the finding in Bhattacharya and Daouk (2002) who show that it is rather the first prosecution than the introduction of IT laws that matter for capital market participants to update their priors. Consistently, evidence suggests that analyst following increases, analysts forecast a broader set of measures, and financial reporting quality improves upon the restriction of insider trading (Bushman, Piotroski, and Smith 2005; Hail 2007; Zhang and Zhang 2012). For both informational events, H_1 predicts that $\beta_1 < 0$, consistent with a reduction in the propensity to pay dividends.

The model in Eq. (1) also 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 not only reflects the signaling motives of management, but also other factors such as cash constraints, investment opportunities, profitability, payout history, or alternative payout mechanisms. In our main specification, we include country, one-digit SIC industry, and year fixed effects, which account for time-invariant unobserved correlated variables along those dimensions (e.g., country-specific restrictions or general trends in dividend payouts over time).[13] 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.

To test hypothesis H_2 (i.e., whether the information content of dividends changes after an informational event), we build on Eq. (1) and estimate the following OLS regression model:

[13] We also provide results using firm fixed effects in the robustness tests.

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

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 return of a firm's share minus the return on the local market index. We use the same definition and coding of *InfoEvent* in the analysis and hence, under H_2 expect $\alpha_1 < 0$, suggesting a reduction in information content of dividend announcements. 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 as well as firm attributes related to the announcement of dividend payouts. The model includes country, industry, and year $Fixed\ Effects_i$, and we again assess the statistical significance of the coefficients with standard errors clustered by country.

As discussed in Section 2.2, dividend signaling is just one of several explanations for a firm's payout policy. In an attempt to sharpen the power of our tests, we estimate the models in Eq. (1) and (2) in the full sample using all available observations as well as in a sample for which ex ante we predict a dividend payment for signaling purposes. That is, based on the finding in Braggion and Moore (2011) that signaling is prevalent in their sample of U.K. firms, we estimate the logit model in Eq. (1) using our U.K. sample observations.[14] We then apply the estimated coefficients from this dividend-signaling model to predict the likelihood of dividend payments for the entire sample. We classify all firm-years with a predicted probability greater than 0.5 as

[14] Braggion and Moore (2011) examine the main drivers of dividend policy for a sample of U.K. firms operating in an environment with very low taxation and essentially free of institutional constraints. They find no effects of measures for firm maturity on the stock price reaction to dividend announcements, positive abnormal returns to the announcement of dividend increases, and explanatory power of contemporaneous dividend changes for future earnings changes. All this evidence is consistent with dividend signaling. The authors also conclude that their results should be relevant for today's markets, as many similarities in payout policies exist.

being prone to dividend signaling, and include them in the reduced sample (regardless whether the firm paid a dividend in a given year or not). By limiting our analyses to firm-years with an ex ante higher likelihood of dividend signaling, we hope to reduce the confounding effects of alternative dividend payout theories.

3.2. Sample and Variable Description

Our 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 Eq. (1). We start in 1993 because before that no reliable dividend data is available in Worldscope. We require firms to have total assets of 10 US$ million or more, and limit the sample to countries with at least 10 observations with dividend information.[15] This leaves us with a maximum of 295,025 firm-year observations from 38 countries. Table 1 provides a sample breakdown of unique firms and firm-years by country and year. It also contains information on the number of actual dividend payments, predicted dividend payments derived from our dividend-signaling model, as well as dividend per share increases and decreases. The latter two numbers include the initiation and the cessation of dividend payments.

As Panel A shows, dividend payments are fairly common around the globe. In 59% of the years, firms paid out a dividend, ranging from a high of 84% in Japan to a low of 37% in Canada. The percentage of actual dividend payments is relatively close to what we predict it should be for signaling purposes. Not surprisingly, there is no difference between the actual and predicted dividend payments in the U.K. On the other end of the spectrum, we only have two countries, Mexico and the U.S., in which the predicted payments exceed the actual payments by

[15] We also 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 will use them in separate analyses later (see Section 4.4).

more than 10 percentage points. This is in line with the rather weak evidence of dividend signaling for U.S. firms. For most other countries, the difference lies within 5 percentage points, increasing our confidence in the dividend-signaling model. In all countries, firms are more likely to increase their dividend payments than to cut dividends per share, suggesting that a firm's payout history is an important determinant of dividend policy. Panel A also lists the year when IFRS reporting became mandatory (Daske et al. 2008) and when the first IT enforcement took place in a country (Bhattacharya and Daouk 2002).[16]

Panel B shows the general trend in dividend payments over time. The number of dividend payments, increases, or 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 in 2008. 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 2001 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 internationally share repurchases never gained the same popularity as in the U.S. (Fama and French 2001). They consistently hover below the 10 percent mark. These 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 Eq. (1), the propensity model, we use the following control variables: the binary indicator *Share Repurchases* stands for an alternative payout mechanism to dividends. A negative sign

[16] When coding the *InfoEvent* indicator we use December 31st of the mandatory IFRS year as the cutoff value. For IT enforcement, because we do not have the exact date of the first prosecution in a country and want to avoid measurement error, we assign it to '1' beginning in the next year. We assess this research design choice in the robustness test section.

suggests that the two ways of disbursing cash to shareholders act as substitutes; a positive sign indicates that they are complements. *Total Assets* are 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. Financial *Leverage* is a proxy for a firm's capital structure and interest payments, but also for potential agency conflicts. Both suggest a negative sign. We expect more profitable firms, measured with *Return on Assets*, to be more likely to payout dividends. Finally, we include a lagged *Dividend Payments* indicator in the model to capture a firm's payout history.

In Eq. (2), the information content model, the following control variables are included: 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. We also include size, market-to-book, leverage, and profitability. For more details on the 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 adverse selection problem in an economy, and conduct various robustness tests. Next, we discuss the results of the tests on the changes in the information content of dividend announcements. We conclude with an extension of our analyses to firm-level shocks in the information environment.

4.1. Analyses of the Propensity to Pay Dividends

We start examining hypothesis H_1 with graphically plotting the percentage of dividend paying firms separately for firms in the treatment countries and the benchmark countries around the informational events. In Figure 1, Panel B, we show the graph for mandatory IFRS adoption from 2001 to 2008 (i.e., the same period we use later in the regression analyses). For reference purposes we also include the total percentage of dividend payers. It turns out that the trend across the two groups of firms is quite different. While the proportion of dividend paying firms subject to the IFRS mandate remains flat or decreases following the regulatory change, the same number increases in countries that did not require a switch in accounting standards. Thus, in a relative sense, IFRS firms have become less likely to pay dividends, and the change coincides with the introduction of the new accounting rules. Panel C of Figure 1 shows the same graph for IT enforcement over the 1993 to 2004 period.[17] The interpretation is less straightforward than in the IFRS case because the event took place at different points in time. At first, more firms in the treatment countries pay dividends. However, from 1996 on, the percentage of dividend paying firms drops quicker in the treatment countries than in the benchmark countries (i.e., countries with no IT laws, or where the IT laws had already been enforced earlier).

Next, we conduct a simple difference-in-differences analysis of the percentage of dividend payments around the two informational events and present results in Panel A of Table 3. This is a straightforward way to account for unobserved differences between treatment and benchmark firms and to control for general trends in the data.[18] We report results for the full sample and the sample with predicted dividend payments based on the signaling model. Throughout the panel,

[17] We end the IT enforcement analyses in 2004 to avoid overlap with the mandatory IFRS adoption setting.

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

the tenor of the results is the same. 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 prosecution took place relative to the benchmark countries. For example, considering the upper-right two-by-two matrix of the panel, the percentage of dividend paying firms decreases by 1.39 percentage points following the IFRS mandate. At the same time, the proportion of dividend payers *increases* by 2.59 percentage points in countries without regulatory change. The resulting difference-in-differences is -3.98 and significant. These results are consistent with a change in the information environment affecting firms' propensity to pay dividends, at least in a univariate setting.

In Panel B of Table 3 we explicitly account for other confounding factors, and report the coefficients from estimating Eq. (1) using logit regression. We tabulate results for the full sample (Model 1) and the dividend-signaling sample (Models 2 to 4). Our main variable of interest, the coefficient on the *InfoEvent* indicator, has always the expected sign (negative for dividend payments and increases; positive for dividend decreases). In the IFRS setting, it is significant at the one percent level when using *Dividend Payments* as the dependent variable, suggesting that firms are less likely to pay dividends after the IFRS mandate. The coefficient is not significant for dividend increases and decreases. In the IT setting, the *InfoEvent* coefficient is always significant when we estimate the model in the dividend-signaling sample. Firms are less likely to pay dividends or announce dividend increases, and more likely to cut dividends per share following the first IT enforcement in a country. The control variables behave as expected and are generally highly significant. Large, profitable firms with a history of paying dividends continue to do so, while highly levered firms with many growth prospects are less likely to payout cash for dividends. We find no evidence that share repurchases serve as substitutes for

dividend payments. If anything, they act as complements as shown by the significantly positive coefficient in the IT setting.[19] Overall, we interpret the above results as consistent with a lower propensity of dividend signaling after an informational shock that improves financial reporting transparency and reduces the adverse selection problem.

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 dividend-signaling sample (i.e., Model 2 in Panel B of Table 3).

First, we assess the timing of the informational shock. We do so by counterfactually varying the event year. Specifically, for each of the two events we shift the 'true' informational event dates ($t = 0$) to a different year, beginning in year t–2 and ending in year t+2. We then re-estimate our regression model and tabulate the *InfoEvent* coefficients from the five separate regressions in Panel A of Table 4. We also report p-values from an F-test comparing the year-to-year changes in the event indicator. If the shock to the information environment occurs during the 'true' event year, we expect the *InfoEvent* coefficient to peak in that year because any other assignment wrongly classifies at least some of the firm-years. This is what we observe in the IT setting. The coefficient of -0.501 in year $t = 0$ is largest in magnitude and statistical significance.

[19] Note that when using *Dividend Decreases* as 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 dividend decreases, we do not include it in the model.

Most notably, it is significantly more negative than the $t-1$ assignment, suggesting that the informational shock coincides with the first IT enforcement. Similarly, the difference between the *InfoEvent* coefficients in years $t-1$ and $t = 0$ is significant in the IFRS setting, but the coefficients continue to grow over the next two years. It seems that around mandatory IFRS the information environment took longer to adapt, consistent with learning or uneven IFRS implementation during the early years. Overall the time-series pattern around both events is indicative of a change in the information environment at about the same time.

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 years ending on or after December 31st, 2005; in the IT setting, we randomly assign the 'true' event dates to the benchmark countries, and do so separately for countries without IT laws and countries in which the first prosecution took place before our sample.[20] 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 predicted, none of the counterfactual event indicators is statistically significant, and in two of the three cases the coefficient is significantly smaller than the 'true' event variable (using one-sided p-values). Only when comparing to the countries with a long tradition of IT enforcement, the two coefficients are not distinguishable.

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

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

include firms that voluntarily switched to IFRS reporting before it became mandatory and foreign firms whose shares are listed on a U.S. exchange as additional benchmark group.[21] That is, we add a separate *InfoEvent* indicator for these firms to the model that takes on the value of '1' after the informational shock. Table 4, Panel C, presents the results of the analyses. We make three observations: (i) the treatment effect is largely unaffected by the inclusion of the additional firms; (ii) we do not find any change in dividend policy for cross-listed firms; and (iii) voluntary IFRS adopting firms become less likely to pay dividends after the IFRS mandate and IT enforcement. As discussed in Section 2.1, this leaves us with the following interpretations. U.S. cross-listed firms act as truly counterfactual firms, and because presumably investors can already infer their type regardless of dividend signaling, they are not affected by the change in the information environment. Voluntary IRFS adopters, on the other hand, act as if the change in the information environment renders dividend signaling less attractive, and pay fewer dividends. This suggests that voluntary IFRS adoption by itself was not enough of a signal, and hence other mechanisms like dividends were needed to signal a firm's type.[22]

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 two models, we add two controls: net cash flows from operations divided by total assets as a proxy for cash constraints, and retained earnings divided by the book value of total equity as a proxy for firm maturity and earnings power. As expected, both variables are significantly positive. In the third model, we replace the country and industry-fixed effects with firm-fixed effects. This

[21] We identify voluntary IFRS adopters based on Daske et al. (2012), 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).

[22] We do not find evidence that mandatory IFRS adoption or IT enforcement cancel out an existing signal and require firms to re-differentiate, for instance, by increasing the propensity of dividend signaling. We examine voluntary IFRS adoption and U.S. cross-listings as standalone informational events in Section 4.4.

accounts for time-invariant firm attributes, but also substantially reduces the number of observations due to lack of variation in the dependent variable. Next, we limit the sample to firm-years from mandatory IFRS adoption countries or exclude observations from the U.S., the largest sample country. In both cases, we estimate the models with and without 2008, the year of the financial crisis, which according to Table 1 likely was unusual. Throughout the panel, the coefficient on *IFRS Adoption* is negative and, with the exception of Model 4, significant.

Panel B of Table 5 contains the sensitivity analyses for the IT setting. We again include the two additional control variables in the model (i.e., net cash flows and retained earnings), estimate a firm-fixed effects specification, limit the analysis to countries with an initial IT enforcement over the sample period, and exclude the U.S. observations. Moreover, we estimate a model in which we drop the IT enforcement year from the analysis. This helps avoid the misclassification of firm-years due to the unknown exact date of the initial prosecution. Finally, because the *IT Enforcement* coefficient in the firm-fixed effect specification is only borderline significant, we re-estimate this model with an extended time-series through 2008 (but excluding firm-years subject to the IFRS mandate). Except for Models 3 and 5, the results are consistent with those reported earlier and support our main prediction.

4.3. Analyses of the Information Content of Dividend Payments

In this section, we turn to hypothesis H_2 stipulating that after an exogenous improvement to the information environment, the information content of dividend payments decreases. We present results of estimating Eq. (2) using OLS regression in Table 6, Panel A. We only report results for the dividend-signaling model, but they look essentially the same when using the full model. 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 highly significant. This indicates that markets react less to the announcement of dividend payments, dividend increases, and dividend decreases following the mandatory adoption of IFRS or the first prosecution of IT laws. A smaller market reaction is indicative of lower information content, and hence a reduced usefulness of dividend signaling after an information shock. The control variables behave largely as expected. In particular, the closeness of an earnings announcement seems to produce positive spillover effects, and the magnitude of the announced dividend change matters. Moreover, for large firms with a generally richer information environment to begin with dividend announcements contain less information.[23]

Next, in Panel B of Table 6, we again contrast the treatment effects to 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 a separate binary indicator for these counterfactual firms to the model, and code it as '1' beginning at the informational event date.[24] The table allows the following insights: (i) when we include the additional benchmark firms, the treatment effect of mandatory IFRS adoption and IT enforcement is largely unaffected; and (ii) neither voluntary IFRS firms nor U.S. cross-listed firms experience a significant decline in information content around the two informational events. The latter result suggests that these firms presumably were already transparent enough so that investors did not have to rely on dividend signaling.[25] Overall, the information content findings align with the propensity tests, and taken

[23] The results are very similar using firm-fixed effects instead of country and industry-fixed effects.

[24] 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.

[25] While the information content findings are consistent with our propensity analysis in Table 4, Panel C, for the U.S. cross-listed firms, we did find that voluntary IFRS adopters are less likely to pay dividends following the

together suggest that after a reduction in the adverse selection problem in the economy, firms *as well as* investors rely less on dividend signaling.

4.4. Extending the Analysis to Firm-Level Informational Shocks

In this section, we extend the logic of our tests to two firm-specific (instead of country-level) informational events, namely the voluntary adoption of IFRS before it became mandatory (from 1993 to 2004), and the cross listing of shares on a U.S. exchange (from 1993 to 2008). Both events have been shown, under certain circumstances, to go along with an improvement of the information environment (e.g., Barth, Landsman, and Lang 2008; Daske et al. 2012; Bailey, Karolyi, and Salva 2006; Hail and Leuz 2009), and have the potential to affect firms' dividend policies. The two firm-level events address concerns regarding the time-clustering of regulatory changes, in particular mandatory IFRS, and offer some corroborating evidence.[26]

In Table 7, we present the results from replicating the propensity tests, but now centered around the firm-specific informational events. To do so, we code the *InfoEvent* indicator as '1' for fiscal years with reporting under the new accounting standards (as identified by Daske et al. 2012) or following the initiation of the U.S. cross-listing program (as identified by Hail and Leuz 2009). We require the treatment firms to have at least one observation pre and post voluntary IFRS adoption or the U.S. exchange listing. In the voluntary IFRS setting, we find a negative and significant *InfoEvent* coefficient in the full sample and the dividend-signaling sample, using *Dividend Payments* as the dependent variable. This suggests that voluntary IFRS adopters are less likely to payout dividends. We do not find significant results for dividend increases or

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informational shocks. However, these tests might suffer from relatively low power, because we only have a maximum of 110 cross-listed firms and 298 voluntary IFRS firms with sufficient data.

[26] At the same time, the firm-specific events likely suffer from endogeneity issues. However, because we are not interested in identifying the exact source of the change in the information environment (but rather use the events as a proxy for such a change), our analyses should be less affected.

decreases. For U.S. cross-listed firms, we find a reduced propensity to pay dividends in the full sample as well as a higher likelihood to increase dividends per share in the signaling sample, but not for the other specifications. Overall, the results are generally consistent with, but weaker than in our main analyses. We conclude that a change in the information environment is associated with the use of dividends for signaling purposes, but this relation is likely mitigated in a voluntary disclosure setting.

5. Conclusion

This paper examines changes in firms' propensity to signal *and* changes in the information content of signals following an exogenous shock to the information environment. Thus, we analyze dividend signaling from the firm's and the market's perspective. We argue that a more transparent information environment reduces the adverse selection problem between managers and investors, and makes it easier for investors to distinguish between good and bad type firms. To test this argument, we examine the dividend payment behavior for a global sample of firms around two events, namely the mandatory adoption of IFRS and the initial enforcement of new IT laws. Both events have the potential to enhance the underling information structure in the economy, thereby reducing the demand for and the value of signaling.

Consistent with our predictions, we find that following our two informational events firms are less likely to pay (or increase) cash dividends, but more likely to cut (or stop) such payments. The changes in dividend policy occur around the time of the informational shock and only in countries subject to the regulatory change. In further analyses we also find that the information content of dividends, measured as three-day absolute announcement returns, is lower after the informational events. Finally, we extend our analysis to firm-specific instead of country-wide informational events, and find that the likelihood to pay dividends is lower for voluntary IFRS

adopters and firms with their shares cross-listed on a U.S. exchange. In sum, our findings show that enhancing the information environment significantly affects firms' demand for *and* the perceived value of dividend payments as a signaling device. They also suggest that regulatory changes to the disclosure environment have real consequences in terms of reducing the cash payouts to investors and the deadweight costs of signaling.

An important caveat of our study is that the analysis focuses only on dividend payments. This leaves room for interesting extensions. First, since good type firms will gain less of an expected valuation premium from costly signaling in an improved information environment, they might choose to substitute dividend payments with other, less costly financial signaling devices. While we control for share repurchases in our tests, this is still a plausible scenario. Second, regulatory changes to the disclosure environment could enhance the credibility of financial reports, which in turn makes it possible for managers to rely more on non-financial signals such as voluntary disclosures (e.g., management forecasts, conference presentations, firm-initiated media coverage) and less on financial signaling. We leave these issues to future research.

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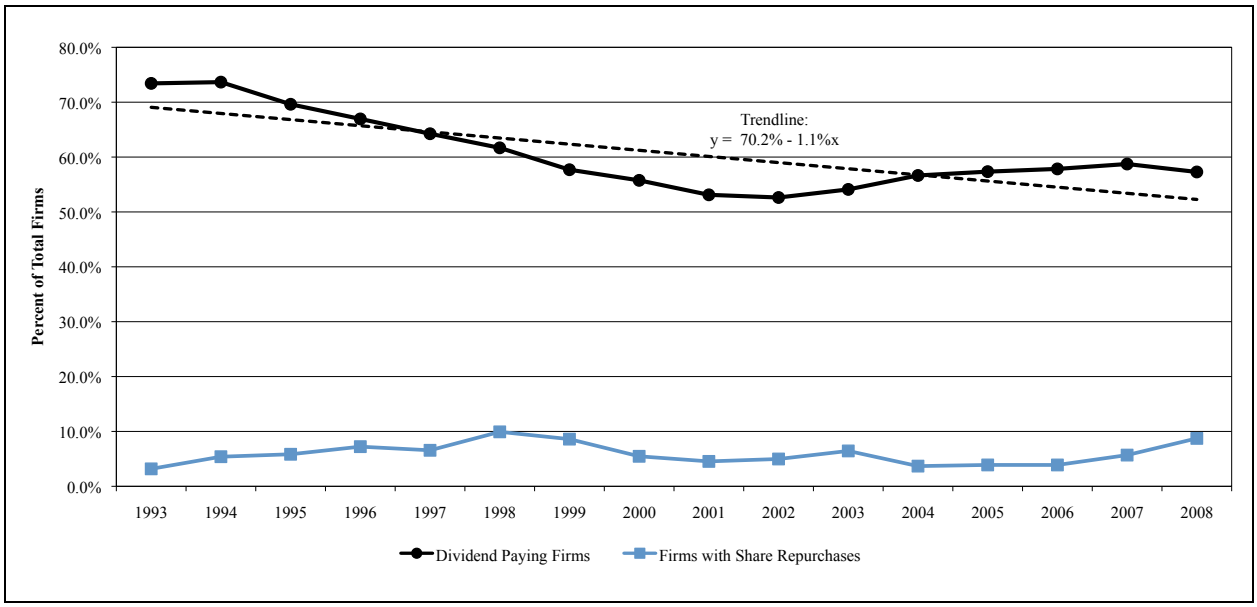
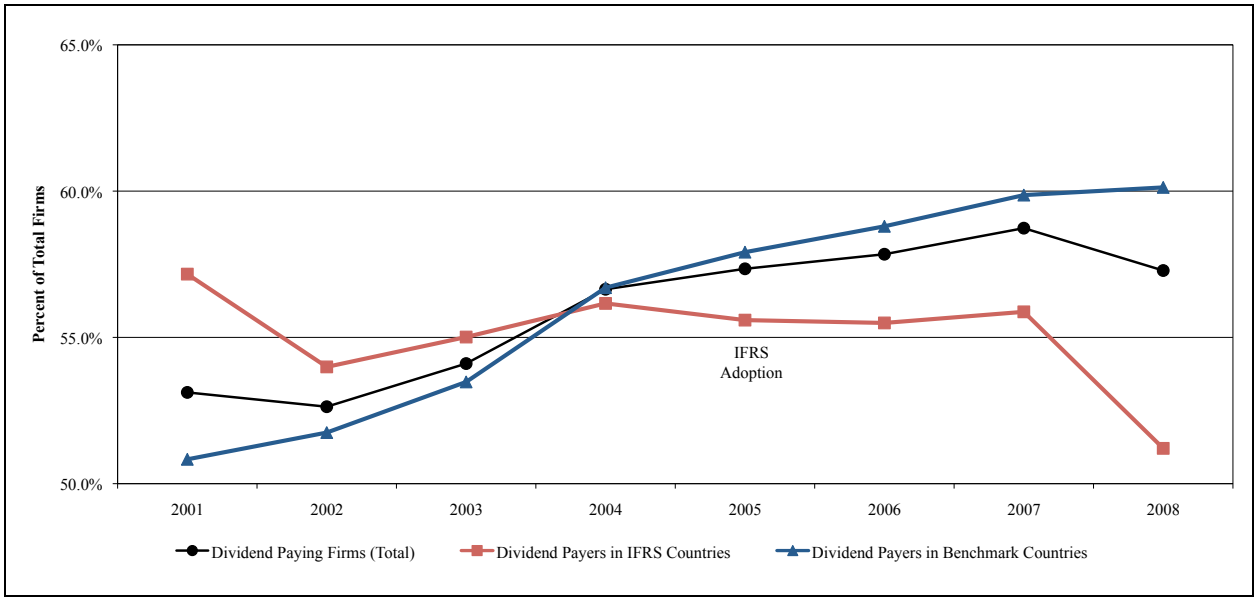
Figure 1: Proportion of Dividend Paying Firms over Time and by Informational Event

Panel A: Percent of Firms with Dividend Payments or Share Repurchases from 1993 to 2008



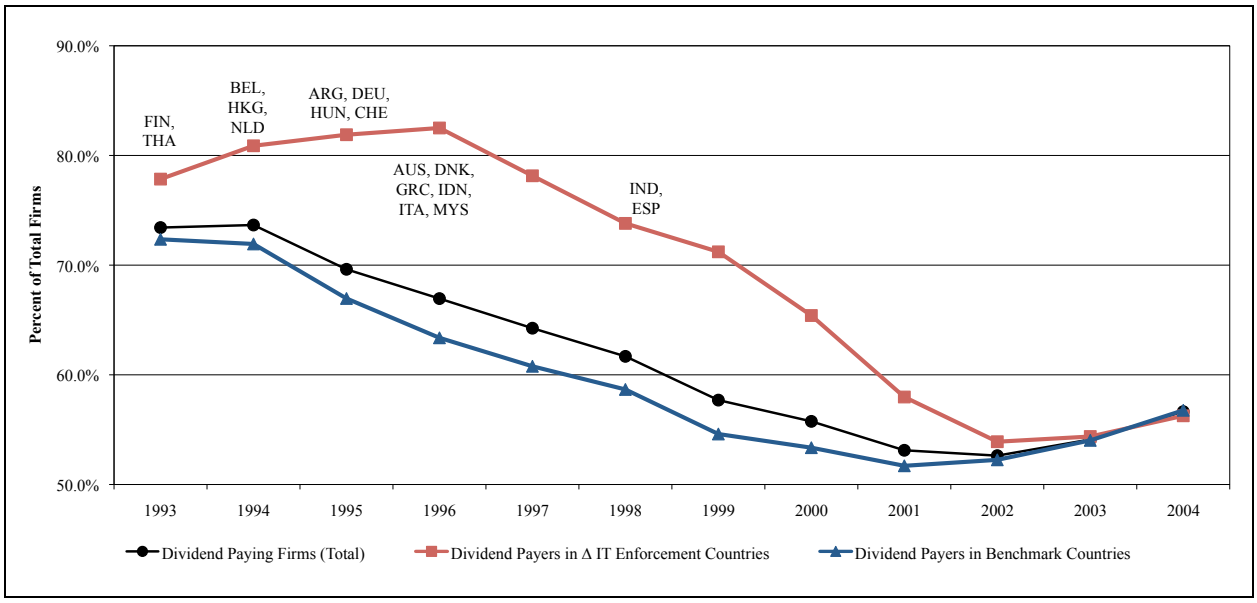
Panel B: Percent of Firms with Dividend Payments around Mandatory IFRS Adoption



(continued)

Figure 1 (continued)

Panel C: Percent of Firms with Dividend Payments around Insider Trading Enforcement



The figure plots the percentage of firms with dividend payments over time. In Panel A, the sample comprises all firm-year observations from 38 countries over the 1993 to 2008 period with dividend and control variable data available (see Table 1). The panel also reports a linear trend line and the percentage of firms with share repurchases. In Panels B and C, we focus on two subsets of the full sample in the years surrounding significant changes in firms' information environment, namely the mandatory introduction of IFRS reporting (Panel B; years 2001 to 2008) and the first enforcement of insider trading (IT) laws (Panel C; years 1993 to 2004). In each panel we plot the total percentage of dividend paying firms as well as the percentages for firms from treatment sample countries (with IFRS adoption or changes in IT enforcement) and benchmark countries (without IFRS adoption or with no changes in IT enforcement). We measure dividend payments using the dividends per share item in Worldscope (field 05101). Share repurchase data is from SDC Platinum.

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*	*Firm-Years with Dividend Payments*								*Mandatory IFRS Adoption*	*Insider Trading Enforcement*
			Actual		*Predicted*		*Div. Increases*		*Div. Decreases*			
			N	*%*	*N*	*%*	*N*	*%*	*N*	*%*		
Argentina	83	734	330	45.0	390	53.1	189	25.7	155	21.1	n.a.	1995
Australia	1,880	10,809	4,823	44.6	4,707	43.5	3,254	30.1	1,294	12.0	2005	1996
Austria	158	1,234	912	73.9	904	73.3	589	47.7	280	22.7	2005	n.a.
Belgium	220	1,806	1,348	74.6	1,381	76.5	1,004	55.6	331	18.3	2005	1994
Bermuda	70	375	238	63.5	238	63.5	152	40.5	63	16.8	n.a.	n.a.
Brazil	361	2,458	1,774	72.2	1,854	75.4	1,000	40.7	727	29.6	n.a.	Before 1993
Canada	1,997	11,849	4,323	36.5	4,955	41.8	2,773	23.4	1,362	11.5	n.a.	Before 1993
China	1,459	8,342	4,348	52.1	4,491	53.8	1,799	21.6	2,570	30.8	n.a.	n.a.
Denmark	254	2,604	1,814	69.7	1,922	73.8	937	36.0	449	17.2	2005	1996
Finland	179	1,704	1,370	80.4	1,372	80.5	841	49.4	480	28.2	2005	1993
France	1,340	10,060	6,824	67.8	7,113	70.7	4,529	45.0	2,213	22.0	2005	Before 1993
Germany	1,184	9,512	5,542	58.3	5,669	59.6	3,283	34.5	2,044	21.5	2005	1995
Greece	355	3,131	2,117	67.6	2,246	71.7	1,210	38.6	964	30.8	2005	1996
Hong Kong	1,055	8,047	4,651	57.8	4,759	59.1	2,626	32.6	1,952	24.3	2005	1994
Hungary	42	358	197	55.0	214	59.8	105	29.3	64	17.9	2005	1995
India	861	5,162	4,285	83.0	4,266	82.6	2,512	48.7	919	17.8	n.a.	1998
Indonesia	366	2,846	1,446	50.8	1,585	55.7	689	24.2	661	23.2	n.a.	1996
Ireland	121	921	553	60.0	586	63.6	462	50.2	96	10.4	2005	n.a.
Israel	184	1,242	519	41.8	598	48.1	280	22.5	239	19.2	2008	Before 1993
Italy	421	3,576	2,489	69.6	2,622	73.3	1,575	44.0	931	26.0	2005	1996
Japan	4,561	48,025	40,526	84.4	40,854	85.1	13,125	27.3	6,087	12.7	n.a.	Before 1993
Korea (South)	1,053	7,603	4,915	64.6	5,143	67.6	2,251	29.6	1,685	22.2	n.a.	Before 1993
Luxembourg	40	328	234	71.3	245	74.7	178	54.3	56	17.1	2005	n.a.
Malaysia	1,130	8,921	5,894	66.1	6,008	67.3	3,251	36.4	2,649	29.7	n.a.	1996
Mexico	164	1,342	652	48.6	891	66.4	450	33.5	229	17.1	n.a.	n.a.
The Netherlands	282	2,587	1,884	72.8	1,986	76.8	1,336	51.6	529	20.4	2005	1994
New Zealand	150	1,037	791	76.3	793	76.5	489	47.2	280	27.0	2007	n.a.
Norway	308	2,138	1,154	54.0	1,216	56.9	640	29.9	384	18.0	2005	Before 1993
Philippines	227	1,704	663	38.9	713	41.8	359	21.1	276	16.2	2005	n.a.
Singapore	695	5,246	3,666	69.9	3,644	69.5	1,923	36.7	1,632	31.1	2003	Before 1993
South Africa	649	3,955	2,616	66.1	2,779	70.3	1,875	47.4	731	18.5	2005	n.a.
Spain	234	2,240	1,617	72.2	1,724	77.0	1,144	51.1	465	20.8	2005	1998
Sweden	455	3,602	2,208	61.3	2,226	61.8	1,480	41.1	452	12.5	2005	Before 1993
Switzerland	323	3,171	2,401	75.7	2,500	78.8	1,346	42.4	524	16.5	2005	1995
Taiwan	1,482	9,669	5,540	57.3	5,645	58.4	2,865	29.6	2,282	23.6	n.a.	Before 1993
Thailand	584	4,752	3,190	67.1	3,253	68.5	1,472	31.0	1,424	30.0	n.a.	1993
United Kingdom	3,238	21,085	14,478	68.7	14,492	68.7	11,022	52.3	3,143	14.9	2005	Before 1993
United States	11,723	80,850	32,438	40.1	43,107	53.3	24,333	30.1	6,961	8.6	n.a.	Before 1993
Total	39,888	295,025	174,770	59.2	189,091	64.1	99,348	33.7	47,583	16.1		

(continued)

Table 1 (continued)

Panel B: Number of Observations, and Dividend Payment Behavior by Year

Year	*Firm-Years*	*Firm-Years with Dividend Payments*							
		Actual		*Predicted*		*Dividend Increases*		*Dividend Decreases*	
		N	*%*	*N*	*%*	*N*	*%*	*N*	*%*
1993	10,217	7,502	73.4	8,316	81.4	4,305	42.1	2,198	21.5
1994	11,271	8,302	73.7	9,386	83.3	5,099	45.2	2,032	18.0
1995	12,706	8,846	69.6	10,369	81.6	5,579	43.9	2,104	16.6
1996	14,088	9,432	67.0	10,979	77.9	5,889	41.8	2,385	16.9
1997	15,371	9,876	64.3	11,664	75.9	6,097	39.7	2,535	16.5
1998	16,092	9,926	61.7	11,353	70.6	5,745	35.7	2,835	17.6
1999	18,234	10,520	57.7	11,537	63.3	5,855	32.1	2,972	16.3
2000	18,979	10,582	55.8	11,389	60.0	5,789	30.5	2,838	15.0
2001	20,036	10,643	53.1	11,483	57.3	5,446	27.2	3,543	17.7
2002	21,955	11,555	52.6	12,350	56.3	5,689	25.9	4,052	18.5
2003	22,275	12,052	54.1	12,444	55.9	6,575	29.5	3,159	14.2
2004	23,167	13,123	56.6	13,178	56.9	7,515	32.4	2,856	12.3
2005	24,011	13,769	57.3	14,194	59.1	8,108	33.8	3,341	13.9
2006	24,164	13,977	57.8	14,360	59.4	8,356	34.6	3,322	13.7
2007	23,627	13,877	58.7	14,213	60.2	8,179	34.6	3,330	14.1
2008	18,832	10,788	57.3	11,876	63.1	5,122	27.2	4,081	21.7
Total	295,025	174,770	59.2	189,091	64.1	99,348	33.7	47,583	16.1

The sample comprises a maximum of 295,025 firm-year observations from 38 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 10 US$ million or more, 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 actual dividend payments measured using the dividends per share item in Worldscope (field 05101), (2) firm-years for which we predict a dividend payment based on a dividend-signaling model, (3) firm-years with increases in dividends per share relative to the prior period (including the initiation of dividend payments), and (4) firm-years with decreases in dividends per share relative to the prior period (including the cessation of dividend payments). To predict the propensity of dividend payments for signaling purposes, we use the logit model in Panel B of Table 3 and, following Braggion and Moore (2011), calibrate it with U.K. data. That is, we estimate the model using our U.K. sample firms, and then apply the estimated coefficients to predict the likelihood of dividend payments for the entire sample. We include all firm-years with a predicted probability greater than 0.5 in the reduced dividend-signaling sample. Panel A also lists the year of the significant changes in firms' information environment: (i) when IFRS reporting became mandatory in a country (Daske et al. 2008), and (ii) when the first prosecution under insider trading laws took place in a country (Bhattacharya and Daouk 2002).

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)	295,025	0.592	0.491					
Dividend Increases (Indicator)	295,025	0.368	0.482					
Dividend Decreases (Indicator)	295,025	0.164	0.370					
Dividend Announcement Returns (3 Days)	108,389	0.036	0.037	0.000	0.011	0.024	0.048	0.176
Control Variables:								
Share Repurchases (Indictor)	295,025	0.058	0.233					
Log(Total Assets) (US$ million)	295,025	12.372	2.102	7.779	10.980	12.233	13.609	17.972
Market-to-Book (Ratio)	295,025	2.306	2.735	0.303	0.918	1.523	2.594	14.826
Leverage (Ratio)	295,025	0.219	0.191	0.000	0.043	0.188	0.349	0.730
Return on Assets (Ratio)	295,025	0.032	0.120	-0.462	0.005	0.041	0.093	0.267
Overlap with Earnings Announcement (Indictor)	108,389	0.232	0.422					
Δ Dividend per Share (Ratio)	108,389	0.003	0.015	-0.050	0.000	0.001	0.005	0.052
Δ Earnings per Share (Ratio)	108,389	0.000	0.147	-0.408	-0.013	0.005	0.021	0.352

The sample comprises a maximum of 295,025 firm-year observations from 38 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. The control variables are: we define a binary indicator marking firm-years with *Share Repurchases* as indicated in SDC Platinum. *Total Assets* are denominated in US$ million. *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. *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 fiscal year. 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 first and 99th percentile, and we use the natural log of the raw values where indicated.

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				*Sample with Predicted Dividend Payments*		
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)	54.71% N = 25,575	55.34% N = 24,295	0.63%	(i)	91.14% N = 13,916	89.75% N = 13,725	-1.39%***
Non-IFRS Adopters	(ii)	53.42% N = 60,540	59.22% N = 60,174	5.8%***	(ii)	86.19% N = 34,392	88.78% N = 37,497	2.59%***
	(i)-(ii)	1.29%***	-3.88%***	-5.17%***	(i)-(ii)	4.95%***	0.97%***	-3.98%***
		Full Sample				*Sample with Predicted Dividend Payments*		
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)	80.92% N = 8,261	62.48% N = 34,538	-18.44%***	(i)	92.34% N = 7,006	89.58% N = 22,093	-2.76%***
Non-Enforcement/Always Enforcement Countries	(ii)	70.19% N = 27,759	55.75% N = 133,833	-14.44%***	(ii)	84.16% N = 22,647	84.69% N = 82,702	0.53%*
	(i)-(ii)	10.73%***	6.73%***	-4.00%***	(i)-(ii)	8.18%***	4.89***	-3.29%***

(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*			
	Full Sample	*Sample with Predicted Dividend Payments*			*Full Sample*	*Sample with Predicted Dividend Payments*		
	(1) Dividend Payments	*(2) Dividend Payments*	*(3) Dividend Increases*	*(4) Dividend Decreases*	*(1) Dividend Payments*	*(2) Dividend Payments*	*(3) Dividend Increases*	*(4) Dividend Decreases*
Informational Events:								
IFRS Adoption	-0.280***	-0.350***	-0.230	0.109	–	–	–	–
	(-2.89)	(-2.78)	(-1.30)	(1.38)				
IT Enforcement	–	–	–	–	-0.162	-0.501**	-0.217***	0.270***
					(-1.01)	(-2.43)	(-2.83)	(2.91)
Control Variables:								
Dividend Payments$_{t-1}$	4.083***	6.112***	3.438***	–	4.284***	5.686***	3.284***	–
	(8.91)	(9.97)	(5.67)		(8.58)	(10.37)	(5.91)	
Share Repurchases	0.099	0.019	0.085	-0.129	0.242***	0.209***	0.188**	-0.245***
	(1.24)	(0.22)	(1.21)	(-1.48)	(4.38)	(2.75)	(2.49)	(-7.41)
Log(Total Assets)	0.277***	0.348***	0.180***	-0.183***	0.260***	0.338***	0.151***	-0.168***
	(13.10)	(18.80)	(13.57)	(-9.85)	(14.33)	(15.18)	(3.85)	(-7.50)
Market-to-Book	-0.090***	-0.087***	0.015**	0.002	-0.085***	-0.079***	0.007	0.000
	(-4.83)	(-5.27)	(2.11)	(0.07)	(-6.07)	(-5.77)	(0.63)	(0.01)
Leverage	-1.272***	-1.984***	-0.488***	0.768***	-1.711***	-2.378***	-0.687***	1.051***
	(-3.79)	(-7.74)	(-5.92)	(5.53)	(-4.84)	(-7.52)	(-4.70)	(16.65)
Return on Assets	11.630***	16.66***	10.45***	-9.339***	11.26***	14.83***	10.21***	-10.64***
	(7.32)	(9.71)	(7.10)	(-12.42)	(5.77)	(6.08)	(6.30)	(-8.19)
Country-, Industry-, and Year-Fixed Effects	Included	Included	Included	Included	Included	Included	Included	Included
Pseudo R^2	64.2%	39.1%	16.2%	14.3%	65.4%	48.3%	20.4%	12.2%
N	170,584	99,530	99,530	92,901	204,391	134,448	134,448	120,065
N Treatment Firm-Years	24,295	13,725	13,725	13,261	34,538	22,093	22,093	21,197
N Treatment Firms	8,067	4,886	4,886	4,701	7,155	4,989	4,989	4,779

The table reports changes in firms' dividend payment behavior following a significant change in the information environment. We consider two informational events: (i) the mandatory introduction of IFRS reporting (from 2001 to 2008), and (ii) the first enforcement of insider trading (IT) laws (from 1993 to 2004). We report results for the full sample and the sample for which we predict a dividend payment based on a dividend-signaling model (see Table 1). 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 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 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: Counterfactually Varying the Event Year

Dividend Payments as Dependent Variable	*IFRS Adoption (N=99,530)*		*IT Enforcement (N=134,448)*	
	Event Coefficient (z-stat)	*F-Test for Difference with Last Year [p-value]*	*Event Coefficient (z-stat)*	*F-Test for Difference with Last Year [p-value]*
Shifting of Event Year Relative to t=0:				
t = –2 Years	-0.098 (-0.79)	–	-0.203 (-0.78)	–
t = –1 Year	-0.179 (-1.34)	[0.056]	-0.324 (-1.49)	[0.182]
t = 0 ('True' Event Year)	-0.350*** (-2.78)	[0.000]	-0.501** (-2.43)	[0.037]
t = +1 Year	-0.407*** (-3.27)	[0.185]	-0.266** (-2.29)	[0.215]
t = +2 Years	-0.439*** (-2.92)	[0.646]	-0.303* (-1.84)	[0.766]
Control Variables	Included		Included	
Fixed Effects	Included		Included	

Panel B: Counterfactually Assigning Event Years to Benchmark Countries

Dividend Payments as Dependent Variable	*IFRS Adoption (N=99,530)*	*IT Enforcement (N=134,448)*	
'True' Event:			
IFRS Adoption	-0.353*** (-3.00)	–	–
IT Enforcement	–	-0.503** (-2.43)	-0.488** (-2.02)
Counterfactual Event:			
Non-IFRS Adoption Countries	-0.004 (-0.02)	–	–
Non-IT Enforcement Countries	–	-0.058 (-0.23)	–
Always-IT Enforcement Countries	–	–	-0.458 (-1.35)
F-Test for Difference across Coefficients [p-value]	[0.014]	[0.138]	[0.815]
Control Variables	Included	Included	Included
Fixed Effects	Included	Included	Included

(continued)

Table 4 (continued)

Panel C: Changes in Dividend Payments for Firms Not Directly Affected by the Informational Event

Dividend Payments as Dependent Variable	*Around Mandatory IFRS Adoption*		*Around Insider Trading Enforcement*	
	(1) Voluntary IFRS Firms	*(2) U.S. Cross-Listed Firms*	*(1) Voluntary IFRS Firms*	*(2) U.S. Cross-Listed Firms*
Counterfactual Firms:				
Voluntary IFRS Firms	-0.550***	–	-1.041***	–
	(-2.94)		(-5.32)	
U.S. Cross-listed Firms	–	-0.273	–	-0.391
		(-0.57)		(-1.40)
Informational Event Firms:				
IFRS Adoption	-0.367***	-0.424***	–	–
	(-2.90)	(-3.45)		
IT Enforcement	–	–	-0.495**	-0.491**
			(-2.28)	(-2.27)
Control Variables:				
Dividend Payments$_{t-1}$	6.371***	6.416***	5.820***	5.814***
	(11.51)	(11.60)	(10.41)	(10.36)
Share Repurchases	0.070	0.053	0.227***	0.227***
	(0.83)	(0.60)	(2.84)	(2.85)
Log(Total Assets)	0.337***	0.347***	0.342***	0.340***
	(18.14)	(18.96)	(15.07)	(14.79)
Market-to-Book	-0.082***	-0.082***	-0.078***	-0.078***
	(-5.53)	(-5.27)	(-5.57)	(-5.57)
Leverage	-1.993***	-1.994***	-2.414***	-2.409***
	(-8.14)	(-7.92)	(-7.59)	(-7.58)
Return on Assets	16.546***	16.645***	15.078***	15.067***
	(10.47)	(10.21)	(6.23)	(6.23)
Country-, Industry-, and Year-Fixed Effects	Included	Included	Included	Included
Pseudo R^2	38.3%	38.9%	48.0%	48.0%
N	102,968	99,284	133,569	133,625

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: (i) the mandatory introduction of IFRS reporting, and (ii) the first enforcement of insider trading (IT) laws. Throughout the table, we build on our base specification for the sample with predicted dividend payments (see Model 2 in Panel B of Table 3), and use *Dividend Payments* as the dependent variable. In Panel A, we report the *IFRS Adoption* and *IT Enforcement* coefficients from five separate regressions. For each regression we counterfactually shift the 'true' informational event dates (t=0) to a different year. That is, we set the binary *IFRS Adoption* and *IT Enforcement* indicator variables equal to one beginning in each year from t–2 to t+2. We also report p-values from an F-test comparing this year's to last year's informational event indicator. 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 countries without IT prosecution over the sample period and for countries in which the first IT prosecution took place before the start of our sample. We also report p-values from an F-test comparing coefficients. In Panel C, we use firms that voluntarily switched to IFRS reporting before it became mandatory (Daske et al. 2012) 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, and code it as '1' beginning on the informational event date. 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. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels (two-tailed).

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 Additional Control*	*(2) Plus Retained Earnings as Additional Control*	*(3) Firm-Fixed Effects*	*(4) Mandatory IFRS Adopters Only*	*(5) Mandatory IFRS Adopters Only & No Year 2008*	*(6) No U.S. Observations*	*(7) No U.S. Observations & No Year 2008*
Informational Events:							
IFRS Adoption	-0.357***	-0.267*	-0.667***	-0.151	-0.202*	-0.390***	-0.292***
	(-2.84)	(-1.83)	(-3.00)	(-1.52)	(-1.90)	(-2.81)	(-2.71)
Control Variables:							
Dividend Payments$_{t-1}$	6.152***	6.303***	2.792***	5.115***	5.187***	5.051***	5.123***
	(9.94)	(10.61)	(7.61)	(19.83)	(21.36)	(14.30)	(14.93)
Share Repurchases	0.002	0.007	0.147	0.189	0.197	0.121	0.156
	(0.06)	(0.06)	(1.43)	(0.64)	(0.63)	(0.81)	(1.01)
Log(Total Assets)	0.348***	0.347***	0.839***	0.367***	0.402***	0.358***	0.377***
	(19.52)	(12.35)	(7.08)	(9.51)	(9.78)	(15.35)	(15.04)
Market-to-Book	-0.089***	-0.047**	-0.049***	-0.028	-0.035	-0.089***	-0.094***
	(-5.54)	(-2.26)	(-2.67)	(-1.38)	(-1.41)	(-3.70)	(-3.89)
Leverage	-1.966***	-1.816***	-4.621***	-1.638***	-1.634***	-2.109***	-2.136***
	(-7.67)	(-6.08)	(-7.29)	(-8.28)	(-7.39)	(-9.06)	(-9.39)
Return on Assets	16.460***	16.310***	19.210***	15.930***	16.710***	17.860***	18.650***
	(9.56)	(8.02)	(9.41)	(18.03)	(15.56)	(11.06)	(11.34)
CFO over Total Assets	0.754**	1.006***	–	–	–	–	–
	(2.37)	(3.34)					
Retained Earnings	–	0.590***	–	–	–	–	–
		(3.06)					
Country-, Industry-, and Year-Fixed Effects	Included	Included	Year- & Firm-Fixed Effects	Included	Included	Included	Included
Pseudo R^2	39.4%	44.3%	26.4%	25.5%	26.5%	26.8%	27.6%
N	98,009	63,903	22,326	27,641	24,371	80,666	71,196

(continued)

Table 5 (continued)

Panel B: Insider Trading Enforcement as Informational Event

Dividend Payments as Dependent Variable	*(1) Plus CFO over Total Assets as Additional Control*	*(2) Plus Retained Earnings as Additional Control*	*(3) Firm-Fixed Effects*	*(4) Firm-Fixed Effects Plus Extended Time-Series*	*(5) Δ IT Enforcement Countries Only*	*(6) No U.S. Observations*	*(7) Without Year of Δ IT Enforcement*
Informational Events:							
IT Enforcement	-0.532**	-0.474*	-0.433	-0.580**	-0.226	-0.383*	-0.440*
	(-2.32)	(-1.74)	(-1.46)	(-1.97)	(-0.91)	(-1.89)	(-1.92)
Control Variables:							
Dividend Payments$_{t-1}$	5.766***	5.802***	2.675***	2.941***	4.260***	4.622***	5.720***
	(10.47)	(10.93)	(9.12)	(8.41)	(21.25)	(14.90)	(10.46)
Share Repurchases	0.195**	0.173*	0.316***	0.300***	0.123	0.265*	0.209***
	(2.50)	(1.92)	(4.68)	(4.88)	(0.80)	(1.67)	(2.65)
Log(Total Assets)	0.346***	0.336***	1.099***	0.959***	0.333***	0.328***	0.339***
	(16.00)	(14.70)	(7.33)	(7.84)	(7.16)	(11.90)	(15.27)
Market-to-Book	-0.087***	-0.058***	0.014	-0.020	-0.019	-0.064***	-0.080***
	(-7.55)	(-4.18)	(0.65)	(-1.12)	(-0.96)	(-3.34)	(-5.84)
Leverage	-2.406***	-2.027***	-5.875***	-5.295***	-2.604***	-2.680***	-2.392***
	(-6.38)	(-5.25)	(-8.01)	(-7.31)	(-6.20)	(-9.85)	(-7.55)
Return on Assets	14.470***	13.630***	18.520***	18.470***	15.980***	18.330***	14.850***
	(5.83)	(5.10)	(5.87)	(6.17)	(13.55)	(9.63)	(6.04)
CFO over Total Assets	1.654***	1.590***	–	–	–	–	–
	(8.93)	(9.49)					
Retained Earnings	–	0.524***	–	–	–	–	–
		(2.81)					
Country-, Industry-, and Year-Fixed Effects	Included	Included	Year- & Firm-Fixed Effects	Included	Included	Included	Included
Pseudo R^2	49.4%	52.2%	28.3%	28.4%	25.0%	29.9%	48.6%
N	127,496	113,917	33,502	45,350	29,099	100,446	132,272

The table reports sensitivity analyses of our base specification (see Model 2 in Panel B of Table 3) examining changes in firms' dividend payment behavior around (i) the mandatory introduction of IFRS reporting (Panel A), and (ii) 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 control variable. (2) In addition, we include *Retained Earnings* divided by the book value of total equity in the model. (3) We replace the country and industry-fixed effects with firm-fixed effects. (4) We limit the sample to observations from treatment sample countries only. (5) We exclude the largest sample country from the analysis (i.e., U.S. observations). For the last two models we report results with and without including the year of the financial crisis (i.e., 2008). In Panel B, we also report a firm-fixed effects model with an extended time-series through 2008 (but excluding firm-years subject to the IFRS mandate) as well as a model without 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).

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

3-Day Absolute Dividend Announcement Returns as Dependent Variable	*Mandatory IFRS Adoption*			*Insider Trading Enforcement*		
	(1) Announcement of Dividend Payments	*(2) Announcement of Dividend Increases*	*(3) Announcement of Dividend Decreases*	*(1) Announcement of Dividend Payments*	*(2) Announcement of Dividend Increases*	*(3) Announcement of Dividend Decreases*
Informational Events:						
IFRS Adoption	-0.004**	-0.004**	-0.006**	–	–	–
	(-2.50)	(-2.26)	(-2.41)			
IT Enforcement	–	–	–	-0.005**	-0.005	-0.005***
				(-2.34)	(-1.67)	(-2.93)
Control Variables:						
Overlap with Earnings	0.004***	0.006***	0.002	0.002**	0.002*	0.003**
Announcement	(3.31)	(4.51)	(1.43)	(2.48)	(1.75)	(2.55)
Δ Dividend per Share	0.012	0.166***	-0.087***	-0.007	0.169***	-0.101***
	(0.74)	(4.77)	(-2.79)	(-0.32)	(4.88)	(-3.58)
Δ Earnings per Share	-0.005***	-0.002	-0.005**	-0.001	0.001	-0.001
	(-2.76)	(-0.89)	(-2.58)	(-0.86)	(0.79)	(-0.65)
Log(Total Assets)	-0.002***	-0.002***	-0.001***	-0.002***	-0.002***	-0.001***
	(-8.22)	(-7.32)	(-3.99)	(-10.67)	(-8.51)	(-6.77)
Market-to-Book	0.000	0.000	-0.000	0.000	0.000*	-0.000
	(0.02)	(0.23)	(-1.32)	(1.31)	(1.91)	(-0.03)
Leverage	0.008**	0.006*	0.002	0.003	0.001	0.001
	(2.07)	(1.72)	(0.89)	(1.43)	(0.49)	(0.75)
Return on Assets	0.020	0.012*	0.014	0.006	0.003	-0.004
	(1.68)	(1.75)	(1.66)	(0.60)	(0.51)	(-0.38)
Country-, Industry-, and Year-Fixed Effects	Included	Included	Included	Included	Included	Included
Adjusted R^2	2.9%	3.5%	3.4%	3.4%	4.1%	2.7%
N	61,125	37,673	12,670	66,414	40,102	14,311

(continued)

Table 6 (continued)

Panel B: Changes in Dividend Announcement Returns for Firms Not Directly Affected by the Informational Event

3-Day Absolute Dividend Announcement Returns as Dependent Variable	*Around Mandatory IFRS Adoption*		*Around Insider Trading Enforcement*	
	(1) Voluntary IFRS Firms	*(2) U.S. Cross-Listed Firms*	*(1) Voluntary IFRS Firms*	*(2) U.S. Cross-Listed Firms*
Counterfactual Firms:				
Voluntary IFRS Firms	-0.003	–	-0.001	–
	(-1.67)		(-0.41)	
U.S. Cross-listed Firms	–	-0.002	–	-0.002
		(-1.26)		(-0.63)
Informational Event Firms:				
IFRS Adoption	-0.004**	-0.004**	–	–
	(-2.60)	(-2.50)		
IT Enforcement	–	–	-0.005**	-0.005**
			(-2.30)	(-2.30)
Control Variables:				
Overlap with Earnings Announcement	0.005***	0.004***	0.002**	0.002**
	(3.79)	(3.26)	(2.48)	(2.48)
Δ Dividend per Share	0.014	0.012	-0.009	-0.009
	(0.85)	(0.73)	(-0.41)	(-0.41)
Δ Earnings per Share	-0.005***	-0.005**	-0.001	-0.001
	(-2.78)	(-2.65)	(-0.79)	(-0.79)
Log(Total Assets)	-0.002***	-0.002***	-0.002***	-0.002***
	(-8.08)	(-8.11)	(-10.73)	(-10.73)
Market-to-Book	-0.000	0.000	0.000	0.000
	(-0.03)	(0.05)	(1.27)	(1.26)
Leverage	0.007**	0.008**	0.003	0.003
	(2.05)	(2.07)	(1.44)	(1.43)
Return on Assets	0.019	0.020	0.006	0.006
	(1.63)	(1.63)	(0.62)	(0.62)
Country-, Industry-, and Year-Fixed Effects	Included	Included	Included	Included
Adjusted R^2	7.0%	6.9%	7.9%	7.9%
N	62,615	60,976	66,350	66,333

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: (i) the mandatory introduction of IFRS reporting (from 2001 to 2008), and (ii) the first enforcement of insider trading (IT) laws (from 1993 to 2004). We report results for the sample with predicted dividend payments based on a dividend-signaling model (see Table 1). 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 after the year of the first IT prosecution. 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 use firms that voluntarily switched to IFRS reporting before it became mandatory (Daske et al. 2012) 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 Model 1 from Panel A, and code it as '1' beginning on the informational event date. We require the voluntary IFRS and U.S. cross-listed firms to have at least one observation pre and post the informational event. For details on the remaining variables see Tables 1 and 2. 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).

Table 7: Logit Regression Analysis of Changes in Dividend Payments around Alternative Informational Events

	Voluntary IFRS Adoption				*U.S. Exchange Cross-Listing*			
	Full Sample	*Sample with Predicted Dividend Payments*			*Full Sample*	*Sample with Predicted Dividend Payments*		
	(1) Dividend Payments	*(2) Dividend Payments*	*(3) Dividend Increases*	*(4) Dividend Decreases*	*(1) Dividend Payments*	*(2) Dividend Payments*	*(3) Dividend Increases*	*(4) Dividend Decreases*
Informational Events:								
Voluntary IFRS Adoption	-0.464***	-0.546***	-0.021	0.042	–	–	–	–
	(-3.88)	(-5.41)	(-0.22)	(0.37)				
U.S. Exchange Listing	–	–	–	–	-0.424***	-0.058	-0.169	0.220**
					(-4.18)	(-0.40)	(-1.45)	(2.11)
Control Variables:								
Dividend Payments$_{t-1}$	4.313***	5.905***	3.423***	–	4.329***	6.005***	3.495***	–
	(8.49)	(10.66)	(6.25)		(9.76)	(11.11)	(6.44)	
Share Repurchases	0.249***	0.247***	0.200***	-0.254***	0.229***	0.196***	0.190***	-0.200***
	(4.54)	(3.16)	(2.69)	(-8.70)	(5.02)	(2.65)	(3.06)	(-4.06)
Log(Total Assets)	0.263***	0.347***	0.148***	-0.169***	0.270***	0.332***	0.161***	-0.172***
	(14.10)	(14.55)	(3.61)	(-7.17)	(16.90)	(16.46)	(5.75)	(-9.77)
Market-to-Book	-0.088***	-0.080***	0.007	-0.000	-0.078***	-0.075***	0.011	-0.000
	(-6.32)	(-5.63)	(0.68)	(-0.00)	(-5.49)	(-5.07)	(1.61)	(-0.01)
Leverage	-1.709***	-2.432***	-0.663***	1.040***	-1.517***	-2.247***	-0.664***	0.972***
	(-4.73)	(-7.48)	(-4.57)	(15.53)	(-4.84)	(-8.07)	(-7.28)	(11.05)
Return on Assets	11.288***	15.221***	10.387***	-10.682***	10.548***	14.873***	10.074***	-9.749***
	(5.64)	(6.07)	(6.19)	(-7.98)	(6.88)	(7.38)	(6.34)	(-9.51)
Country-, Industry-, and Year-Fixed Effects	Included	Included	Included	Included	Included	Included	Included	Included
Pseudo R^2	65.7%	48.8%	20.7%	12.3%	65.5%	45.1%	18.5%	12.6%
N	199,630	130,108	130,108	116,867	300,536	186,060	186,060	169,911
N Treatment Firm-Years	1,574	1,122	1,122	1,099	2,788	2,001	2,001	1,875
N Treatment Firms	422	297	297	291	389	278	278	264

The table reports changes in firms' dividend payment behavior following a significant change in the information environment. We consider two (firm-level) informational events: (i) the voluntary switch to IFRS reporting before it became mandatory (from 1993 to 2004), and (ii) the cross listing of foreign firms' shares on a U.S. exchange (from 1993 to 2008). We require the voluntary IFRS and U.S. cross-listed firms to have at least one observation pre and post the informational event. We report results for the full sample and the sample for which we predict a dividend payment based on a dividend-signaling model (see Table 1). The table reports 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 *Voluntary IFRS Adoption* variable takes on the value of '1' for fiscal years with reporting under the new accounting standards (as identified by Daske et al. 2012); the *U.S. Exchange Listing* variable takes on the value of '1' for all fiscal years following the initiation of the cross-listing program (as identified by Hail and Leuz 2009). 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).