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The Cost of Inattention: Deadline and Media Effects on Implicit Taxes

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Abstract

We provide evidence that the capitalization of taxes in share prices depends on investor attention and can create additional implicit taxes for inattentive investors. Interpreting a German capital gains tax reform as a natural experiment, we identify investor attention by the temporal distance to the deadline (deadline effect) and media coverage (media effect). Although the reform was announced 18 months in advance, we find evidence for large abnormal returns around the deadline. In the two days preceding it, daily returns (share prices, trading volumes) of treated stocks increased abnormally by 2.5 pp (7.0%, 296.7%). The cumulative abnormal return CAR one day before the deadline was 10.7%. The media coverage also abnormally increased returns and trading activity. In the last months of 2008, 20 additional articles per week on the reform resulted in a CAR of about 2% in one week. Inattentive investors paid abnormally high prices in periods of high attention, implying an implicit tax burden of up to 67.9% of realized and 130.5% of expected returns one day before the deadline.

JEL classification codes: G12; G14; H24; M40; M48

Keywords: Implicit taxes, information dissemination, investor attention, announcement effect, deadline effect, tax capitalization

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1. Introduction

Research on implicit taxes and the capitalization of tax burdens commonly assumes that financial markets efficiently process tax information and that taxes are instantly capitalized in asset prices ((Lang & Shackelford, 2000; Dai et al., 2008; Markle et al., 2020; Chyz et al., 2021; Guenther & Sansing, 2023). However, behavioral finance research (DellaVigna & Pollet, 2009; Tetlock, 2011; Chi et al., 2014) provides evidence that investor attention affects trading behavior and that asset prices are not always set efficiently (e.g. (Lim & Brooks, 2011; Eichfelder et al., 2022)). Implicit taxes are important, as they can have large effects on aggregate tax burdens and investor returns.

We analyze how investor attention is related to implicit tax burdens. Based on the rational inattention framework of Sims (2003) and Reis (2006), we argue that investors account for information costs and thus decide to be temporarily inattentive. Investor attention increases when information becomes more urgent, such as before a deadline, or easier to collect, such as due to media reports. In spite of the clear theoretical framework of rational inattention, for several reasons, there is tension that requires empirical analysis.

First, rational choice and the high relevance of well-informed institutional investors suggest a high degree of market efficiency. Thus, the question arises of how relevant and persistent attention-based implicit tax burdens might be in competitive financial markets. Second, considering the limitations in cognitive ability, it is unclear how large the implicit tax burdens are compared to the explicit ones. Third, it remains unclear whether investors are more responsive to foreseeable events, such as deadlines, or to cognitive stimuli, such as media articles. This has implications not only for behavior but also for trading strategies. For example, if responses of individual investors become foreseeable, they can be anticipated by institutional investors.

We combine two strands of literature. First, empirical research provides extensive evidence on the capitalization of taxes in asset prices (e.g., Lang & Shackelford (2000); Dai

et al. (2008); Markle et al. (2020); Chyz et al. (2021)). Assets with favorable tax treatment carry implicit taxes. In this literature, it is a common assumption that investors react immediately to tax-relevant information. Second, behavioral finance research demonstrates that investors may not immediately incorporate information into prices when they are inattentive (DellaVigna & Pollet, 2009). Investors tend to misprice information that is difficult to interpret (Lev & Nissim, 2004). While investor attention refers to the selective cognitive focus on tax-relevant information (Koch & Tsuchiya, 2007), tax awareness captures the conscious understanding of tax rules and their economic consequences (Chetty et al., 2009). At the intersection of these strands, we analyze how investor attention affects the implicit tax burden of tax-favored investments.

We identify investor attention through two channels. First, in the rational inattention framework of Sims (2003) and Reis (2006), agents update their knowledge only when the marginal benefit exceeds the marginal cost of information. In line with Hoopes et al. (2015), this implies more attention before deadlines, when decisions must be made (deadline effect). Second, media coverage plays a central role in disseminating information and drawing the attention of stock market participants (media effect). Whereas previous research focuses on firm-specific news (Engelberg & Parsons, 2011; Tetlock, 2011; Liu et al., 2014), we extend the analysis to tax-related news with market-wide implications.

We interpret a major German tax reform as a natural experiment to study the connection between deadlines, media coverage, and implicit taxes. Before the German capital gains tax reform of 2009 (CGTR 2009), capital gains on the shareholdings of individual investors were tax exempt if the holding period exceeded one year.[1] In 2007, the German parliament enacted a reform effective on January 1, 2009, introducing a flat tax rate of 26.38% on both short- and long-term capital gains of individual investors for shares acquired after December 31, 2008. The tax rules remained unchanged for institutional

[1]Buhlmann et al. (2020) call the treatment of capital gains of German retail investors before 2009 a "temporal discontinuity". While they also use this reform setting, their focus is on the disposition effect around the temporal discontinuity, not on the deadline effect.

investors, non-corporate business investors, and individuals with substantial shareholdings (1% or more of outstanding shares). Importantly, CGTR 2009 included a grandfathering rule: Capital gains from shareholdings acquired by individual investors before January 1, 2009, remained tax exempt if held for more than one year. Therefore, the reform did not increase the tax burden on individual or institutional sellers but only created strong incentives for individual investors to acquire tax-privileged shares before the deadline.

Although implemented in 2007, market research by Deutsche Bank (2008) and GfK (2008) shows that most investors were still poorly informed by mid-2008. Nevertheless, the majority planned to seek better information and adjust their portfolios before the deadline. By late 2008, tax reform had become a major topic in the media. For example, on December 11, 2008, *Handelsblatt* ran the headline "Saving taxes at the last minute", and on December 20, 2008, the *Frankfurter Allgemeine Zeitung* published "Final spurt for tax savers." Taking into account both deadline and media effects, we expect a surge in investor attention in December 2008.

Using a difference-in-differences strategy with French and UK stocks as control group and trading days closely before and after the deadline as treatment period, we identify abnormal market reactions around the turn of the year 2008/2009 (TY 2008/2009). In the two days preceding the deadline, daily returns (share prices) of German stocks increased abnormally and transitorily by 2.5 pp (7.0%). The aggregate abnormal return within the last five trading days before the deadline was 10.7%. The trading volume on the last two trading days of 2008 exceeded "normal" levels by 195.3%. We also find negative abnormal returns and trading activity in the five trading days after TY 2008/2009, consistent with investors shifting trades forward to avoid future capital gains taxes.

These price reactions imply that inattentive investors paid a substantial acquisition premium when buying tax-privileged shares shortly before the deadline. Based on one-year buy-and-hold returns of a German stock market portfolio and the estimated acquisition premium, investors effectively paid an implicit tax rate of approximately 67%, when they

acquired shares at the last trading day in 2008. Using lower expected long-term returns for German shares, we show that the implicit burden can be as high as 130.5% of the expected one-year return and 22.1% of a five-year return of a German portfolio. While the implicit tax can exceed the explicit tax in the short-term, we show that longer holding periods and higher returns reduced the implicit tax burden.

To identify media effects and disentangle deadline effects from media effects, we analyze the impact of media reports on stock market outcomes. We measure media coverage on the CGTR 2009 as the number of daily news articles within a week. We find a statistically significant but economically small effect on abnormal returns and trading volume. Our estimate suggests that one additional article on the CGTR 2009 abnormally increased returns by 2 basis points and trading volumes by 0.8%. Since the average number of weekly reform-related newspaper articles is close to 20, 20 articles over one week resulted in a cumulative abnormal return CAR of 2.0% compared with a CAR of 10.7% resulting from the deadline effect. Therefore, the deadline effect was the dominant driver of market reactions around TY 2008/2009.

When examining heterogeneity in stock market responses, we observe a stronger impact of CGTR 2009 for small-cap and loser stocks. This result is consistent with evidence that small-cap stocks with high price elasticity are more strongly affected by herding behavior and anomalies such as the turn-of-the-year effect, which is also more pronounced for loser stocks (Sikes, 2014). In additional tests (e.g., triple difference analyzes), we document the robustness of our findings. Analyzes on trading volumes per transaction indicate that our results are driven by small individual retail investors.

Our paper contributes to the literature in several directions. First, we extend the research on implicit shareholder taxes. Prior work on capital gains taxes documents that investors adjust asset prices to incorporate shareholder taxes, affecting both demand (capitalization effect) and supply (lock-in effect) (Lang & Shackelford, 2000; Dai et al.,

2008).[2] We document a complementary mechanism. Inattentive investors may bear substantial implicit taxes because attention-driven price pressure inflates acquisition prices just before a tax deadline. In our setting, this mechanism results in an implicit tax of up to 67.8% of realized returns and 130.5% of expected returns for one year. This insight broadens the understanding of tax capitalization by showing that tax-induced price adjustments depend not only on regulations, but also on investor attention and the timing of information diffusion. Existing studies that focus solely on announcement effects might therefore miss significant price adjustments that occur when tax rules finally enter investors' awareness (Eichfelder et al., 2022).

Second, we contribute to the literature on mispricing of tax-relevant information (Lev & Nissim, 2004; Schmidt, 2006; Weber, 2009; Chi et al., 2014). While prior research has concentrated on the mispricing of firm-specific tax information (e.g., book–tax differences), we find evidence consistent with the mispricing of market-level tax information. We show that such mispricing can occur when investor attention is shaped by media coverage (media effect) and by the effective date of the reform (deadline effect). Although effective dates have been studied in other contexts (e.g., the acceleration of 10-K filing deadlines in Doyle & Magilke (2013)), most research on deadlines and prices focuses on seasonal patterns such as end-of-the-month or turn-of-the-year effects (e.g., McGuinness & Harris (2011); Sikes (2014)). Hoopes et al. (2015) show that tax-relevant deadlines affect information search. Our evidence extends this by documenting that deadlines can also strongly affect aggregate asset prices and trading volumes.

Finally, we also contribute to the literature on how foreseeable deadlines may affect asset prices. Hussainey et al. (2011), Hartzmark & Solomon (2013), Hartzmark & Solomon (2019) provide evidence for a systematic mispricing around dividend payouts (dividend month premium) followed by an abnormal reversal. We show similar effects can also occur

[2]Dai et al. (2008) analyze tax effects before and after the effective date of the U.S. Taxpayer Relief Act of 1997. However, due to a different institutional setting, they use the effective date to disentangle lock-in effects from tax capitalization effects.

around a foreseeable tax reform deadline.

We structure our paper as follows. Section 2 describes the institutional setting, the related literature, and the hypotheses. Section 3 explains our data and identification strategy. Section 4 documents our results and Section 5 concludes. The Appendix contains detailed information on the setting, variable definitions and additional results.

2. Institutional Background and Hypotheses

2.1. Capital Gains Tax Reform 2009

The German reform of capital gains taxation at the turn of the year 2008/2009 (CGTR 2009) was part of the broader Business Tax Reform 2008/2009[3]. The effective date of the CGTR 2009 (January 1, 2009) differed from the effective date of the other reform measures of the Business Tax Reform (January 1, 2008), which allows us to disentangle the effect of the CGTR 2009 from the other reform measures.

The first media reports on a major German tax reform date back to April 10, 2006. In June 2006, a draft by the German Ministry of Finance proposed a flat-rate withholding tax on capital income (including interests, dividends, and capital gains) of individuals. In January 2007, the government decided to introduce this flat tax on January 1, 2009, while maintaining the old capital gains tax rules for shares acquired before that date. The German Federal Parliament and the Federal Council passed the final bill between May 2007 and July 2007 (see Figure 1 and Voeller & Müller (2011) for the reform process).

[Figure 1 about here]

For shares acquired before the reform deadline, the taxation of capital gains of German individual investors depended on the holding period.[4] If the holding period

[3]This reform introduced major changes in German business taxation, including a reduction of the corporate income tax rate, broadening the income tax base for businesses, and coordinated reforms for partnerships, sole proprietors, and individuals.

[4]An exception are professional business investors and individual investors with substantial shareholdings

exceeded one year, capital gains were tax-free. If held less than one year, 50% of the capital gains were taxed with the general personal income tax rate of up to 47.48% (including the "solidarity surcharge"). Hence, the maximum effective capital gains tax rate on such shares was 23.74%. Capital gains of individual investors from share acquisitions after December 2008 were fully taxable with a flat rate of 26.38% on capital earnings.[5] Since 2009, taxation no longer depended on the length of the holding period (see Table 1).

[Table 1 about here]

Individual investors therefore faced a higher tax burden on capital gains for shares purchased after January 1, 2009. For holding periods longer than one year, the tax burden therefore increased by 26.38% if the taxable income (apart from capital earnings) of a taxpayer in one year exceeded €15,000. For shorter holding periods, the additional tax burden increased inversely with the personal income tax rate.

Despite these strong tax incentives and the early announcement, most retail investors were not fully attentive to the reform. A survey in July 2008 (GfK, 2008) found that only 30% of household financial decision-makers felt well informed about the CGTR 2009; 30% reported limited knowledge and 40% were uninformed. Approximately two-thirds (74% among securities holders) planned to obtain more information and 40% (60%) planned to restructure their portfolios before the end of 2008. A survey of Deutsche Bank (2008) reported that only 11% of investors considered the reform in their trading decisions 100 days before the deadline. However, 22% planned to restructure portfolios before the end of 2008.

The CGTR 2009 was extensively discussed in the German media in December 2008 (all statements translated from German): Headlines included *Die Welt* ("The stock market crisis as a benefit: Investors can use low share prices and save the new capital gains

of a stock ($\geq 1\%$).

[5]This tax rate already includes the solidarity surcharge. Investors with a lower regular personal income tax rate have also the option to use the lower regular rate. This is only relevant for investors with low regular incomes.

tax," December 9), *Börse Online* ("The countdown for the capital gains tax is running," December 18) and *TAZ Online* ("Exactly two days are left for investors to stock up on shares ...," December 29). Even *Tagesschau*, Germany's main daily TV news show, reported on the reform on 20 December.

Table 2 provides a monthly overview of the 2008 reports of the largest German daily newspapers on the CGTR 2009. The maximum number of articles can be found in December, but the numbers were also high in March/April and October/November. The high number in March/April stemmed from rumors about plans for tax rule changes regarding certificates and funds. As the tax bill ultimately remained unchanged, these rumors do not suggest relevant tax law uncertainty for our setting. Articles published in October/November typically described the new tax rules, while articles in December typically recommended buying shares or restructuring portfolios before year-end 2008. Table 2 documents the increasing number of articles close to the end of 2008.

[Table 2 about here]

2.2. Literature and Hypotheses

Implicit taxes are adjustments in pretax returns that arise when investors purchase tax-favored assets instead of regularly taxed assets (Dybvig & Ross, 1986; Erickson et al., 2019). The favorable tax treatment is then capitalized in higher asset prices, lowering pretax returns relative to otherwise comparable assets. The gap in pretax returns of tax-favored assets, scaled by the pretax return of regularly taxed assets, represents the implicit tax. Empirical research provides extensive evidence on the capitalization of taxes in asset prices (e.g. Guenther & Willenborg (1999); J. L. Blouin et al. (2002); Dhaliwal et al. (2003); Ayers et al. (2008); Dai et al. (2008); J. Blouin et al. (2009); Jennings et al. (2012); Markle et al. (2020); Chyz et al. (2021); for reviews, see also Shackelford & Shevlin (2001); Hanlon & Heitzman (2010); Lester & Olbert (2025)).

In our context, shares acquired before the CGTR 2009 deadline qualify for the long-term capital gains tax exemption, while shares acquired afterward are subject to capital gains taxes upon disposal. Implicit taxes require investors to choose between differently taxed assets (Kemsley & Williams, 2001; Guenther & Sansing, 2023). In our setting, investors could decide whether to buy tax-favored shares before the deadline or tax-disfavored shares afterward (Jennings et al., 2012). Because the risk profiles of the shares did not change around the deadline, no risk adjustment is necessary (Erickson & Maydew, 1998; Guenther & Sansing, 2010).

The CGTR 2009 created a strong tax incentive for pre-deadline purchases.[6] If all investors had anticipated and incorporated this early announced change, efficient markets would imply no abnormal reaction at the turn of the year 2008/2009 (TY 2008/2009). As Brooks et al. (2003) (p. 109) note, it "(...) is only new – and especially new and unpredictable – information that moves prices (...)". Under such conditions implicit taxes vary between investor clienteles (e.g., institutional vs. retail investors), but are homogeneous within investor clienteles over time. However, if investor attention varies between investors or over time, then implicit taxes can depend on the overall attention of the market and the individual attention of a specific group of investors. Thus, implicit taxes can vary even within investor clienteles.

As documented by Lang & Shackelford (2000), the share price can be modeled as a function of the tax burden on dividends and capital gains. Higher future capital gains taxes shift the demand curve downward and reduce share prices (tax capitalization effect). Importantly, CGTR 2009 did not affect pre-deadline supply, since original share owners retained grandfathering privileges regardless of whether they sold their share and reinvested before the deadline or not. The fact that CGTR 2009 did not cause a lock-in

[6]We do not consider the announcement effects of the tax reform, which are hard to isolate and are addressed by Voeller & Müller (2011). Since investors had ample time to react, prices and trading volumes could have adjusted gradually over the more than one-year announcement period. In addition, CGTR 2009 was part of a broader reform package, making it challenging to separate effects of the different reform measures. Because the other reform measures were already implemented in 2008, this does not affect our analysis.

effect but only affected the demand side simplifies the identification of its effect on share prices.

Behavioral finance research demonstrates that investors may not immediately incorporate information into prices when they are inattentive (e.g., DellaVigna & Pollet (2009); Hirshleifer et al. (2009); Pantzalis & Ucar (2014)). Investors tend to misprice information that is difficult to interpret (Lev & Nissim, 2004; Schmidt, 2006; Weber, 2009; Chi et al., 2014), and investor attention amplifies reactions to tax incentives (Chetty et al., 2009). The survey evidence of Deutsche Bank (2008) and GfK (2008) suggests that most individual investors were temporarily inattentive to the CGTR 2009. This is in line with the rational inattention framework (Sims, 2003; Reis, 2006), as limited information capacity and updating costs can make delay in information adjustment optimal. Deadlines increase the marginal value of information, inducing last-minute updating (Hoopes et al., 2015). Similarly, research in accounting and psychology shows that deadlines focus attention and influence decision-making (Ariely & Wertenbroch, 2002; Bennett et al., 2015).

There is also evidence that investor inattention and preference biases lead to systematic mispricing around dividend payouts. Hartzmark & Solomon (2013) identify a significant overpricing of stocks in the month before dividend payment. They show that stocks earn abnormal returns before the dividend payout (dividend month premium). The anomaly is as large as the value premium and is followed by abnormal return reversals after the dividend payment. Hussainey et al. (2011) report similar findings of dividend-related mispricing for the London Stock Exchange. The findings of Hartzmark & Solomon (2019) suggest that many individual and institutional investors trade as if dividends and capital gains are disconnected attributes. Thus, investors and analysts partially ignore that dividends payments are followed by foreseeable price decreases. The consequence is a short-term overpricing especially of stocks with high dividend ratios shortly before the dividend payment.

Dixon et al. (2021) provide evidence that institutional investors also contribute to these short-term price distortions. Through stock loan and short-selling activities surrounding ex-dividend dates, shifts in supply and demand amplify temporary mispricing. These effects persist despite transparency in the securities lending markets, suggesting that limited arbitrage capacity and information asymmetries sustain short-lived inefficiencies.

In line with the literature on dividend payments and the survey evidence of Deutsche Bank (2008) and GfK (2008), we expect a deadline-driven increase in investor attention by the end of 2008 that abnormally raised stock demand and resulted in a short-term overpricing of stock prices before prices returned to their fundamental values. As a consequence, investors acquiring stocks in this period were burdened by implicit taxes in the form of an acquisition premium. Since tax reform increased the relative attractiveness of acquisitions in 2008, we also expect a shift of trades from 2009 to 2008. In general, we expect positive abnormal returns and trading volumes shortly before the deadline and negative abnormal returns and trading volumes shortly after the deadline.

H1. Daily returns and trading volumes were abnormally high shortly before the CGTR 2009 deadline, leading to implicit taxes in the form of a acquisition premium. Daily returns and trading volumes were abnormally low shortly after the deadline.

Empirical evidence further suggests that media reports affect investor behavior in capital markets even if the released information is not new. Tetlock (2007) finds that high media pessimism predicts downward pressure on market prices, followed by a reversion to fundamentals, while unusually high or low pessimism predicts high trading volumes. Tetlock (2011) shows that investors overreact to stale news, leading to return reversals. Engelberg & Parsons (2011) and Liu et al. (2014) document the causal effects of media reporting beyond the information in these reports. Heitzman & Klasa (2021) show that trading volumes before merger announcements are driven by informed investors. Their findings suggest that inattentive investors miss out on signals embedded in pre-announcement trading activity, while sophisticated or connected investors exploit private

information.

We further analyze CGTR 2009 related media reports before the deadline. As media coverage increases investor attention (e.g., Tetlock (2011)), reports on the CGTR 2009 in 2008 suggest a higher demand and a higher willingness to pay for tax-exempt shares. Since share prices are non-stationary, we focus on media effects on daily returns and trading volumes.

H2. A higher media coverage (number of articles) on the CGTR 2009 increased daily returns and trading volumes in 2008.

Our analysis assumes that the trading activities of individual investors were relevant enough to affect the overall German stock market. According to Deutsche Bundesbank (2014), German households directly held 10.3% (12.6%) of German stocks in 2008 (2009), with mutual funds holding another 5.3% (5.9%).[7] These holdings exceeded those of German banks (3.5%) and insurance firms (2.1%), suggesting that individual investors were sufficiently important to affect aggregate market outcomes. Additional analyzes provide evidence for abnormally high retail trading activity shortly before TY 2008/2009.

3. Identification Strategy and Data

3.1. Identification Strategy

Our identification strategy interprets CGTR 2009 as a natural experiment and relies on the comparison of a treatment and a control group. In our baseline model, we focus on the 60 trading days around January 1, 2009. Given the well-known home bias of individual investors (e.g., Van Nieuwerburgh & Veldkamp (2009)), we expect a stronger impact of CGTR 2009 on stocks listed in the German market. Jochem & Volz (2011) show that German investors hold slightly more than 50% of their equity in the German stock market;

[7] German tax law treats mutual funds as transparent, so the CGTR 2009 tax incentives applied equally to retail share trades and investments in mutual funds.

this should be even higher for individual investors. Thus, we use shares listed on other European markets as an appropriate control group.

The CGTR 2009 was enacted in 2007 and became effective on January 1, 2009. In our setting, the "treatment" is the incentive to acquire stocks before January 1, 2009. Although this incentive existed from the enactment in 2007 onward, we test whether abnormal returns are concentrated in the final days of 2008 and are followed by a return reversal in the following days (deadline effect, H1).

As a consequence, our specific DiD model does not compare the pre-treatment with the post-treatment period like a standard DiD approach. Instead, we compare trading days shortly before and shortly after the deadline with trading days farther away from the deadline. We initially concentrate on the two trading days before and after the deadline. In line with the graphical evidence in Figure 3, we then expand this period to the last five trading days in 2008 and the first five trading days in 2009. Our simple DiD model for two trading days uses the following specification:

$$\begin{aligned} Y_{it} = \alpha &+ \beta_1 \cdot Germany_i \\ &+ \beta_2 \cdot CloseBefore[2D]_t + \beta_3 \cdot \mathbf{CloseBefore[2D]_t \times Germany_i} \\ &+ \beta_4 \cdot CloseAfter[2D]_t + \beta_5 \cdot \mathbf{CloseAfter[2D]_t \times Germany_i} \\ &+ \beta_6 \cdot LongAfter_t + \beta_7 \cdot LongAfter_t \times Germany_i + \chi C_{it} + \varphi_{it} + \psi_{it} + \rho_i + \epsilon_{it}. \end{aligned} \tag{1}$$

In this model t indexes days in the 60 trading-day window around January 1, 2009, and i indexes stocks. The dependent variable Y_{it} is either the daily return, the logarithm of the share price or the logarithm of the trading volume (in thousands of trades per day). Analyzing both returns and price levels allows us to assess not only short-run price changes, but also whether temporary price increases reverse to their base level after the deadline. The indicator variable $Germany_i$ is equal to 1 if the stock is listed on the German stock market and 0 for the French and UK markets.

The simple specification of Eq. 1 focuses on a narrow two-day window ($[2D]$) around the deadline. Pantzalis & Ucar (2014) document that investor attention to earnings news can be reduced by religious holidays. Because the German market was closed for Christmas, weekends and New Year's Eve, only two trading days remained between Christmas 2008 and the turn of the year (December 29–30). If holiday activities absorbed attention, we expect especially strong reactions in the last two trading days. $CloseBefore[2D]$ equals 1 for the last two trading days of 2008. $CloseAfter[2D]$ equals 1 for the first two trading days of 2009. To control for possible persistent changes in daily returns, stock prices and trading volumes, we further add $LongAfter$, which is equal to 1 for the 28 days following $CloseAfter$. The reference period comprises the 28 days preceding $CloseBefore[2D]$. Therefore, the model compares short-term changes around the deadline with the first 28 trading of our observation period of 60 trading days around the deadline.

We identify the effect of the CGTR 2009 by the interaction coefficients β_3 on $CloseBefore[2D]_t \times Germany_i$ and β_5 on $CloseAfter[2D]_t \times Germany_i$. Both coefficients identify abnormal returns, price adjustments, and trading volumes during the last two trading days 2008 and the first two trading days 2009 of German stock in comparison to our French/UK control stocks. Consistent with H1, we expect $\beta_3 > 0$ and $\beta_5 < 0$ for daily returns and for trading volumes. For share prices, we expect $\beta_3 > 0$ and $\beta_5 > 0$, as prices take some time to revert to their base level.

The vector of controls C_{it} accounts for the logarithm of the market value ($MarketValue$), the logarithm of the book value ($BookValue$) (both in millions of local currencies) and the ratio of EBITDA to the average monthly market value ($relEBITDA$). To mitigate endogeneity, we compute $MarketValue$ as the average over the first ten trading days of each turn-of-the-year cycle for each stock. We include stock fixed effects ρ_i, year fixed effects φ_{it}, and industry–month fixed effects ψ_{it} to absorb trends and common shocks. We use robust standard errors and cluster them at the stock level (Petersen, 2009). A detailed overview of all variables is provided in Table C.1 (Appendix A.1).

To investigate whether effects also extend beyond this narrow window, we consider a wider five-day window ($[5D]$) around the reform deadline. This model also aligns with the graphical evidence in Figure 3. The extended specification incorporates both the two-day ($[2D]$) DiD indicators from Eq. 1 and additional indicators for the five days ($[5D]$) before and after the deadline. Adding both indicators to the model allows us to identify differences in effect sizes within the five-day period. In line with Pantzalis & Ucar (2014), we expect stronger effects in the last two days. The purpose of the specification is to provide an accurate estimate of the aggregate abnormal return for the entire period of the last five trading days.

$$
\begin{aligned}
Y_{it} = \alpha &+ \beta_1 \cdot Germany_i \\
&+ \beta_2 \cdot CloseBefore[2D]_t + \beta_3 \cdot \mathbf{CloseBefore[2D]_t \times Germany_i} \\
&+ \beta_4 \cdot CloseBefore[5D]_t + \beta_5 \cdot \mathbf{CloseBefore[5D]_t \times Germany_i} \\
&+ \beta_6 \cdot CloseAfter[2D]_t + \beta_7 \cdot \mathbf{CloseAfter[2D]_t \times Germany_i} \\
&+ \beta_8 \cdot CloseAfter[5D]_t + \beta_9 \cdot \mathbf{CloseAfter[5D]_t \times Germany_i} \\
&+ \beta_{10} \cdot LongAfter_t + \beta_{11} \cdot LongAfter_t \times Germany_i + \chi C_{it} + \varphi_{it} + \psi_{it} + \rho_i + \epsilon_{it}.
\end{aligned}
\tag{2}
$$

($CloseBefore[5D]$) and ($CloseAfter[5D]$) are equal to 1 for the five trading days before or after the deadline, respectively. Therefore, the reference period of the extended model is the 25 trading days prior to $CloseBefore[5D]$. All other variables are defined as in Eq. 1. In Eq. 2, we capture the effect before the CGTR 2009 by β_3 on $CloseBefore[5D]_t \times Germany_i$ and β_5 on $CloseBefore[2D]_t \times Germany_i$. Both coefficients measure whether German stocks exhibit abnormal returns, price increases, or trading volumes relative to French/UK stocks during the respective pre-deadline window.

We expect $\beta_3 > 0$ and $\beta_5 > 0$ for daily returns, share prices, and trading volumes. Similarly, the coefficients on the post-deadline interactions, β_7 on $CloseAfter[2D]_t \times Germany_i$ and β_9 on $CloseAfter[5D]_t \times Germany_i$ are predicted to be negative in line

with H1 for daily returns and trading volume. For share prices, we expect $\beta_7 < 0$ and $\beta_9 < 0$, as prices take some time to revert to their base level.

After the identification of deadline effects in Eq. 1 and Eq. 2, we focus on market reactions to media reports. We construct a measure of weekly media coverage, defined as the number of articles referring to the CGTR 2009 in week t ($WeeklyArticles_t$). As news reports on weekends can only affect trading during the next days, we define Saturdays and Sundays as the first days of a week to measure $WeeklyArticles_t$.

We expect positive abnormal daily returns and trading volumes for treated German stocks in weeks with high media coverage (H2) and identify the effect of media reports on German stocks by an interaction term of $WeeklyArticles_t$ and $Germany_i$. We also add a dummy variable for December 2008 ($December_t$) and the corresponding interaction terms, since the topic was most prominent in the news in December 2008. Our equation for H2 takes the following form:

$$\begin{aligned} Y_{it} = {} & \alpha + \beta_1 \cdot WeeklyArticles_t + \beta_2 \cdot Germany_i + \beta_3 \cdot December_t \\ & + \beta_4 \cdot \mathbf{WeeklyArticles_t} \times \mathbf{Germany_i} \\ & + \beta_5 \cdot WeeklyArticles_t \times December_t \\ & + \beta_6 \cdot \mathbf{WeeklyArticles_t} \times \mathbf{Germany_i} \times \mathbf{December_t} \\ & + \chi C_{it} + \varphi_{it} + \psi_{it} + \rho_i + \epsilon_{it}. \end{aligned} \tag{3}$$

In Eq. 3, we identify the abnormal market response to articles by the interaction $WeeklyArticles_t \times Germany_i$ and the additional effect in December 2008 by the triple interaction $WeeklyArticles_t \times Germany_i \times December_t$. A positive and significant coefficient β_4 would support H2. We include stock fixed effects ρ_i, year fixed effects φ_{it}, and industry–month fixed effects ψ_{it} to absorb firm-specific heterogeneity as well as common temporal and seasonal shocks.

Eq. 1 to E. 3 summarize the complete empirical specification used in our empirical

analysis. However, due to the fixed-effects structure of our specifications, not all main effects are separately identified in our estimates. In particular, stock fixed effects absorb all time-invariant characteristics of a firm, including whether a stock is listed in Germany. Similarly, industry–month fixed effects remove common seasonal variation at the industry level, which implies that the December indicator in 3 is also absorbed.

3.2. Data

We obtain data on stock markets and financial statements from the Datastream database (Thomson Reuters). Stock prices and trading volumes are available on a daily basis, while financial statement data are drawn from annual business reports. For our main analysis, we use data from officially listed stocks in Germany, France, and the United Kingdom. Our data covers 30 trading days before and after the turn of each year 2008/2009.[8] The raw sample comprises 267,582 stock–day observations.

We adjust the data in two steps. First, we exclude all observations with missing information on share prices, trading volumes, or control variables. Second, we drop observations with negative book values. The final data are an unbalanced panel with 208,785 stock–day observations in the treatment and control group: 60,871 from the German market (XETRA, Frankfurt Stock Exchange, and other stock exchanges), 80,400 from the French market (NYSE Euronext Paris), and 67,514 from the UK market (London Stock Exchange).

Table 3 presents descriptive statistics for our main variables of interest (daily return, share price, trading volume) as well as the most relevant control variables (market value, book value, EBITDA). Share price is the daily closing price, as provided by Datastream. Daily return is the percentage change in the share price relative to the previous trading

[8]Stock markets in Germany are closed on Christmas and New Year's Eve, but remain open in France and the UK. Therefore, we include 62 trading days in the control markets (plus Christmas and New Year's Eve) and 60 trading days in our treatment group. As a robustness check, we test alternative regressions excluding observations from these additional trading days, with almost identical results.

day. Trading volume is the number of shares traded per day (in thousands). The book value is calculated as share price divided by the price-to-book ratio and multiplied by the number of outstanding shares. EBITDA is annual earnings before interest, taxes, depreciation, and amortization. As a proxy for expected profit, we use the EBITDA of the corresponding year (e.g., EBITDA 2009 for 2009). Share price, market value, book value, and EBITDA are reported in local currency (euros for Germany and France; British pounds for the UK).

[Table 3 about here]

Table 3 documents that share prices are lower in the German market, mainly due to differences in the number of shares issued. The mean daily returns in all three markets are close to zero and not statistically different from zero. Trading volumes are highest in the UK and somewhat lower in France. Average EBITDA, market value, and the book value are broadly similar across markets, particularly between Germany and France, suggesting substantial comparability among the markets studied.

4. Empirical Analysis

4.1. Google Searches

Hoopes et al. (2015) show that taxpayers' Google searches closely track tax events. We therefore first examine the search frequency for the terms *Abgeltungsteuer* or *Abgeltungssteuer* (German words for the new flat tax on capital gains) in 2008. We use the normalized Google trends index that ranges from 0 to 100. Figure 2 documents weekly averages of the index and the average change from week-to-week throughout 2008.[9]

We observe a clear increase in the Google search index in the second half of 2008, consistent with our hypothesis of rising investor attention in the weeks before the imple-

[9]Because weekend reports may affect trading in the following week but not the preceding trading days, we treat Saturdays and Sundays as the first and second days of a trading week. We exclude media reports on New Year´s Eve, as they could not have affected 2008 trading (market closed).

mentation of the CGTR 2009. The peak in search activity at the very end of 2008 confirms our expectation that the deadline effect concentrates the attention of individual investors to the reform deadline.[10]

[Figure 2 about here]

4.2. Stock Market Reactions around the Deadline

4.2.1. Graphical Evidence

To visualize stock market reactions around the deadline (1 January, 2009), we show normalized average daily stock returns, logarithms of share prices, and logarithms of trading volumes (in thousands of units of traded stocks) for the treatment and control groups. The observation window covers 30 trading days before and after TY 2008/2009, plus Christmas and New Year's Eve. To account for cross-market differences in levels, we demean each variable using its stock-specific average value over the observation window.

The key identifying assumption for DiD estimation is that daily returns and other market indicators of the treatment and control groups follow parallel trends. The London Stock Exchange and Paris Stock Exchange are closely linked to the German market (XETRA, Frankfurt Stock Exchange). Figure 3 plots demeaned daily returns, share prices, and trading volumes for Germany and the control groups (France and the UK) over the 60 trading days around January 1, 2009. The trends of the treatment and control groups are highly correlated, especially for daily returns and share prices. Figure 3 provides strong support for the common trend assumption before and after the reform deadline.

[Figure 3 about here]

Five trading days before the TY 2008/2009, Figure 3 Panel 3a shows a sharp and

[10]We interpret Google search activity as a proxy for investor attention. Following Da et al. (2011), the search frequency reflects the intensity of information acquisition, rather than the level of declarative knowledge. In our context, higher search volumes indicate that investors actively sought information about the CGTR 2009, consistent with increasing attention immediately before the reform deadline.

abnormal increase in the daily returns of the treatment group relative to the control group. This spike is followed by an abnormal decline. After about five post-reform trading days, daily returns realign with those of the control markets. Similarly, Figure 3 Panel 3b shows a spike in German share prices around January 1, 2009, with elevated price levels persisting for about five trading days.

Figure 3 Panel C confirms that the spike in returns is associated with a surge in trading volumes, peaking on the last trading day of 2008. Trading volumes in the first 30 trading days of 2009 in Germany remained persistently below those in the control markets. Overall, the graphical evidence is consistent with German investors accelerating purchases in late 2008 and shifting trades from 2009 into 2008 to avoid the flat tax on capital gains for shares acquired after January 1, 2009. To rule out that country-specific seasonal year-end trends drive these results, we replicate the graphs for the turn-of-the-year periods 2007/08 and 2009/10 (Appendix A.2). In these placebo periods, we still find common trends as in Figure 3 supporting the common trend assumption for the treatment and the control group, but no abnormal changes in daily returns as in the treatment year 2008/2009.

4.2.2. Regression Analyses

In Table 4 we present regression results for the simple DiD model of Eq. 1. We estimate ordinary least squares (OLS) with robust standard errors clustered at the stock level to address heteroscedasticity and autocorrelation (Petersen, 2009).

[Table 4 about here]

Our preferred specification in column (2), including industry-month fixed effects, shows that German shares generated an average abnormal daily return of 2.23 pp on the last two trading days of the year 2008. In the first two trading days of 2009, there is a negative abnormal return of –1.81 pp for $CloseAfter[2D] \times Germany$. Thus, as expected, we find evidence for a short-term overpricing of stocks around the reform deadline.

As expected, share prices are abnormally high shortly before and after the deadline. Based on Table 4, column (4), the average abnormal increase in prices is 6.8% before and 5.2% after the deadline. We adjust the coefficient estimates of all models with logarithmic dependent variables (share price, trading volume) by the Kennedy (1981) formula.[11] For trading activity, Table 4, column (6) documents an abnormal increase in trading volumes of 260.3% shortly before and an abnormal reduction of 20.1% shortly after the deadline. Our findings are all in line with H1 and suggest a demand-driven temporal overpricing of German stocks around the TY 2008/2009.

In Table 5 we report estimates of the extended model (Eq. 2) with a longer treatment period of five days before and after the deadline. In our preferred specification in column (2), we find positive abnormal daily returns of 1.79 pp on trading days -5 to -3 and of 2.45 pp on trading days -2 and -1 (= 1.79+0.66). The reversal after the deadline is again confirmed, with a negative abnormal return of –1.59 pp (= $-0.52 - 1.07$) on days 1 and 2 and of –1.07 pp on days 3 to 5. Using these estimates, we can calculate the aggregate maximum abnormal return one day before the deadline as 10.7% ($1.0245^2 \cdot 1.0179^3 - 1 = 0.1069$).

[Table 5 about here]

Based on Table 5 column 4, the average increase in share prices was 1.8% on trading days -5 to -3, 7.0% on days -2 and -1, 5.4% on days 1 and 2 and 3.7% on days 3 to 5.[12] According to our estimates in Table 5, column (6) the average abnormal increase in trading volumes was 109.6% on days -5 to -3 and 296.7% on days -2 and -1. After the deadline, we again find evidence for an abnormal reduction in trading volumes, suggesting anticipation of trading activity before the deadline to acquire tax-exempt shares.

[11] $Adjusted\ estimate = exp(Coefficient - \frac{1}{2} \cdot Standard\ Error^2) - 1$. For example, the effect on share price for days -2 and -1 is calculated as $(exp(0.0656 - \frac{1}{2} \cdot 0.008^2)) - 1 = 0.0678$.

[12] We adjust estimates for logarithmic dependent variables following Kennedy (1981). E.g., the average increase in share prices for days -5 to -3 is calculated as $(exp(0.0179 - \frac{1}{2} \cdot 0.008^2) - 1 = 0.0180$. The effect for the last two days is calculated by the product of the effects of both dummy variables $1.018 \cdot 1.0511 - 1 = 0.0701$.

The findings of tables 4 and 5 support H1. Consistent with Google search evidence (Figure 2), we find strong evidence that investors increased attention and as a consequence their demand for tax-exempt shares in the last trading days of 2008. This resulted in a short-term but large increase in share prices of up to 10.7%. An implication of this overpricing is an implicit tax burden for investors who acquired shares just before the deadline and thus paid an acquisition premium.

4.3. Calculation of Implicit Tax Burdens

A classical example for the identification of implicit tax burdens is the comparison of taxable assets with tax-favored assets that results in an adjustment of market prices, such that post-tax returns of both assets are equalized.(Erickson et al., 2019; Guenther & Sansing, 2023). In our setting, tax treatment does not differ between different asset classes, but over time. Although stock acquisitions in 2008 were not subject to a capital gains tax in case of a future stock sale, capital gains of shares acquired in 2009 were taxable with a capital gains tax of typically 26.38%.

An important observation is that the spike in share prices of the treatment group compared to the control group was extremely short-term. Thus, while investors who acquired German shares at the end of the last trading day of 2008 paid a high acquisition premium of about 10.7% (see Table 5 in Subsection 4.2.2 and Figure 3), investors who acquired shares about one week earlier did not pay any significant acquisition premium. We use this consideration to quantify implicit taxes for an investor who acquired shares at the "wrong time", i.e., the TY 2008/2009 with an abnormal demand for German stocks.

As a reference point, we use an investor who acquired shares before the abnormal price increase (6 days before the deadline). As documented by the results in Table 5, this investor did not pay neither the acquisition premium as an implicit tax nor the explicit capital gains tax for shares acquired in 2009. Thus, the only (explicit) burden is a dividend tax of 26.38%. We then compare the tax burden of this investor with the implicit and

total tax burdens of investors who acquired shares on other dates shortly before or after the deadline. This decomposition allows us to disentangle the statutory tax effect from the behavioral tax-induced adjustment reflected in pre-deadline price dynamics. We calculate the implicit tax burden by

$$\tau_{implicit} = \frac{Return - Return_{\tau imp}}{Return} = \frac{\Delta Return_{\tau imp}}{Return}. \tag{4}$$

Return is the gross rate of return of a buy and hold investment in a portfolio of German stocks. $Return_{\tau imp}$ is the rate of return after implicit taxes. We define the implicit tax as the abnormal acquisition premium identified in Section 4.2.2. This premium was a pure cost, as it was an abnormal and short-term phenomenon for German stocks. We use the results on abnormal daily returns from Table 5 to calculate the acquisition premium for German stocks.[13] We define the total tax burden (implicit and explicit taxes) as

$$\tau_{total} = \frac{Return - Return_{\tau}}{Return} = \frac{\Delta Return_{\tau}}{Return}. \tag{5}$$

We calculate $Return_{\tau}$ as the return on investment after both implicit and explicit taxes. As explicit taxes, we consider the dividend tax of 26.38% and the capital gains tax of 26.38%. As the implicit tax (acquisition premium) reduces the capital gain, it also reduces a potential capital gains tax for shares acquired in 2009. We calculate the dividend return as the average dividend return for a German stock market portfolio weighted by the market capitalization by the end of 2008 over the period from 2008 to 2011 (3.14%).

We use two alternative approaches to estimate $Return_{\tau}$. First, we calculate the one year buy and hold return of a German stock market portfolio (weighted by market capitalization) that has been acquired 6 trading days before TY 2008/2009. Due to the Financial Crisis 2008 and the return reversal in 2009, this empirically realized return

[13]For example, the acquisition premium for the last trading day before reform (*1 Day Before*) is calculated as $PricePremium_{1D\ Before} = (1 + 0.0179)^3 \cdot (1 + 0.0179 + 0.0066)^2 - 1$, where 0.0179 and 0.0066 correspond to the estimates for $CloseBefore[2D] \times Germany$ and $CloseBefore[5D] \times Germany$, respectively (Table 5, column (2)).

was 15.8%, which is significantly higher than historical long-run returns. In our view, this might overstate the expected returns in 2008 as investors could not anticipate this abnormally high return. Therefore, we alternatively use long-run historical stock returns from the German Institute for Stocks (DAI) of 8.2% per year (DAI, 2025).

We document our calculations and tax burdens in Table 6. Panel A reports the results for the realized one year buy and hold return of a German stock market portfolio that was acquired at the end of 2008 (15.8%). In this specification, the implicit tax burden is 0% on day -6, but increases to 34,7% on day -3 and to 67.8% on day -1. The reason is that about two thirds of the portfolio return of 15.8% fall on the maximum acquisition premium of 10.7% at day -1. Due to the short-term nature of the abnormal acquisition premium for German stocks, the implicit tax burden declines again to 0% on day 6. The total tax burden is maximal on day -1 (73.1%) and minimal on day -6 (5.3%).

Panel B reports the results for the expected one year buy and hold return of a German stock market portfolio (8.2%). Due to the lower expected gross return, implicit tax burdens become much larger and can be as high as 130.5% on day -1. The reason is that the acquisition premium in this specification exceeds the expected gross return for one year. The total tax burden increases from 10.1% on day -6 to 76.7% on day -3 and 140.6% on day -1 and then decreases again to 80.8% on day 3 and 26.4% on day 6. In Panel B, the implicit tax is the dominant part of the tax burden, which results from the moderate buy and hold return over one year.

[Table 6 about here]

In Panels C, D, and E, we report implicit, explicit, and total tax burdens for investment horizons of two, five, and ten years. These panels use the corresponding buy and hold returns of a German stock market portfolio over the respective horizons. For the five-year horizon (Panel D), the expected gross return is substantially higher (48.3%) and the acquisition premium prior to the deadline becomes less relevant. The implicit tax

burden reaches a maximum of only 22.1% on day -1. The total tax burden also follows a smoother profile, ranging between 15.8% and 44.7%. These panels also document that the relevance of implicit taxes decreases in the holding period.

Figure 4 illustrates the development of implicit and explicit taxes for Panels A (realized one-year return), B (expected one-year return), and D (expected five-year return). In all panels, implicit taxes rise sharply before January 1, driven by the temporary acquisition premium on German stocks, and decline again after the deadline as the premium disappears. Explicit taxes, on the contrary, increase mechanically after 1 January due to the introduction of the 26.38% flat capital gains tax. This figure again illustrates that the implicit tax burden is a function of the aggregate buy and hold return. Thus, higher expected returns and longer holding periods reduce implicit tax burdens.

[Figure 4 about here]

4.4. Media and Deadline Effects

Table 7 reports the results for Eq. (3) and tests whether increased media coverage regarding CGTR 2009 resulted in positive abnormal daily returns and trading volumes before the deadline (H2). We measure media coverage as the weekly number of articles on the CGTR 2009 (*Weekly Articles*, see also Table 2). Reports published on weekends can only affect trading behavior in the following trading week (Monday to Friday). Therefore, we treat weekend reports as part of the subsequent trading week.

Weekly Articles captures the number of newspaper articles in 2008 referring to the CGTR 2009 in a given week, and *Weekly Articles* $\times$ *December* the additional effect of media reports in December 2008. The interaction terms *Weekly Articles* $\times$ *Germany* and *Weekly Articles* $\times$ *Germany* $\times$ *December* identify the effect of media attention on German-listed stocks in 2008 and a potentially additional effect in December 2008. We test whether articles in December might have a stronger impact on trading as they are published

closer to the deadline. The analysis uses an unbalanced panel of 133,419 observations over a 120-day window centered on January 1, 2009.

[Table 7 about here]

Columns (1) and (2) report results for *daily returns* and columns (3) and (4) for *trading volumes*. The coefficient of *Weekly Articles* × *Germany* is positive and significant in all models, supporting H2 that intensified media coverage abnormally increased returns and trading activity of treated stocks. In quantitative terms, one additional article on the CGTR 2009 increases daily returns by 0.02 pp (2 basis points). Thus, twenty additional articles increase daily returns by about 0.4 pp.[14] Thus, the estimated media effects on returns are statistically robust but economically small. We also find that one additional article increases trading activity by 0.8% (twenty articles by 17.6%).

The coefficient of *Weekly Articles* × *December* × *Germany* is close to zero for daily returns in column (2) and positive and significant for trading volume in column (4). However, if we further add dummy variables for deadline effects in the last five and two days before and after the TY 2008/2009 ($CloseBefore[2D/5D]$ and $CloseAfter[2D/5D]$ dummies and their interaction terms with *Germany*), the coefficient for *Weekly Articles* × *December* × *Germany* becomes negative and significant for daily returns and insignificant for trading volumes. Therefore, there is no robust evidence for significantly stronger media effects in times close to the deadline (December 2008).

Our results for the general media effect (*Weekly Articles* × *Germany*) remain stable when controlling for deadline effects by (*CloseBefore[2D/5D]*), (*CloseAfter[2D/5D]*) and their interactions with *Germany*. Hence, media coverage and the deadline affected investor behavior through partially distinct channels. Note that the two effects are not perfectly separable, since earlier media coverage may have amplified investor responses that materialized closer to the deadline.

[14] The average number of articles per week in 2008 is 18.0. In December 2008, the average number of articles per week increases to 27.

Furthermore, the magnitude of the media effect is small compared to the trading response directly induced by the reform deadline. Column (3) suggests that the average of 27 media reports in one trading week in December 2008 resulted in an aggregate abnormal return of 2.7% for one week. By contrast, our estimates in Table 5 suggest that the deadline as such generated an abnormal return of 10.7% during the last trading week of December 2008. From this perspective, the deadline effect on cumulative abnormal returns is about four-times as large as media effects. Our findings provide robust support for H2. However, while media attention significantly increased investor activity, particularly in December 2008, its economic relevance remains moderate compared to the strong behavioral reactions triggered by the CGTR 2009 deadline. Hence, the deadline was the dominant effect of the CGTR 2009 on asset prices.

4.5. Heterogeneity

We further examine heterogeneity in stock market reactions across three dimensions: (1) small-cap vs. large-cap stocks, (2) winner vs. loser stocks, and (3) dividend vs. non-dividend-paying stocks. Less liquid stocks should show stronger effects, consistent with the literature on turn-of-the-year effects (Starks et al., 2006). This line of research suggests a stronger impact of the CGTR 2009 on small-cap and loser stocks. Small-cap stocks are typically considered less liquid compared to large-cap stocks (Sikes, 2014). In the case of loser stocks, the disposition effect (e.g., Barberis & Xiong (2009); Buhlmann et al. (2020)) suggests a stronger price elasticity to increased stock demand, as potential stock sellers are less willing to realize losses. Dividend-paying stocks may react less, as implicit-tax effects tend to be stronger for non-dividend-paying growth stocks (Amoako-Adu et al., 1992; Lang & Shackelford, 2000). Whether this holds for relatively tax-uninformed investors remains uncertain, but we test all three dimensions.

We examine heterogeneity in the CGTR 2009 effects along three dimensions: (1) small-cap vs. large-cap stocks, (2) winner vs. loser stocks, and (3) dividend- vs. non-

dividend-paying stocks. We expect stronger effects for small-cap and loser stocks and weaker effects for dividend payers. The heterogeneity for a particular stock characteristic is identified by comparing the interaction coefficients ($CloseBefore \times Germany$) among the corresponding subsamples ($MarketValue/Loser/Dividend$). Unless noted otherwise, we focus on the two-day window and the dependent variable $DailyReturn$. We split the average market capitalization (measured in millions of local currency) in the first 10 trading days of a turn-of-the-year cycle at the median to generate an indicator variable $MarketValue$. $Loser$ is an indicator variable with a value of 1 in the case of a reduction in share price during the preceding year.[15] $Dividend$ is an indicator variable for a dividend-paying stock. Table 8 documents the results.

[Table 8 about here]

Table 8 presents heterogeneity tests by firm characteristics, examining whether the pre-deadline and post-deadline effects identified in the baseline specification differ systematically between market segments.

Columns (1) and (2) show that the estimated pre-deadline increase in daily returns is substantially stronger for small-cap firms (2.54%) compared to large-cap firms (1.87%). The estimated difference of 0.69 percentage points, although not statistically significant, suggests that tax-induced trading pressure was more pronounced among smaller firms. This pattern is consistent with the notion that individual investors who were most affected by the reform tend to be more active in smaller, domestically focused stocks. The post-deadline reversal is also stronger for small firms (-2.23% vs. -1.37%), indicating a more pronounced short-term rebalancing once the tax advantage disappeared, albeit this difference is barely significant.

[15] We define the price change as average share price at the end of the current year minus the average share price at the end of the previous year. To calculate the average price, we consider observations from the second last trading week (i.e., the sixth to tenth last trading day) of a given year. We do not account for the last five trading days, since this week is strongly affected by the pricing effects of the CGTR 2009 at the TY 2008/2009, which could bias our results.

Columns (3) and (4) compare stocks that had experienced losses before the reform (*loser stocks*) with those that had performed positively (*winner stocks*). The results indicate that loser stocks exhibited a strong pre-deadline increase in daily returns (2.35%), while we do not find significant effects for winner stocks –0.54%. The effect difference is 2.89 percentage points. This finding supports the view that the disposition effect (i.e., the reluctance of stock owners to realize losses for loser stocks) increases the responsiveness of loser stocks to an abnormal increase in stock demand.

Finally, columns (5) and (6) assess differences between dividend-paying and non-dividend-paying stocks. While both groups display significant positive abnormal returns before the reform, the estimated effects are slightly larger for dividend stocks (2.16% vs. 1.46%). However, this difference is not statistically significant at conventional levels and the return reversal (i.e., the negative abnormal effect on daily returns closely after the reform) is stronger for non-dividend stocks. Therefore, the is no clear evidence that dividend-paying stocks reacted differently to the CY 2008/2009 than non-dividend-paying stocks.

4.6. Additional tests

We perform a series of additional analyzes to validate the robustness and the mechanisms of our baseline results.

First, we estimate triple-difference (DDD) specifications with for only two trading days before and after the TY 2008/2009 (simple model) and two and five trading days before and after TY 2008/2009 (extended model) in Section A.3.1, Table C.2 and Table C.3). The idea of these models is to control for potentially differences in seasonal effects between the treatment group of German stocks and the control group of French and UK stocks. For example, there might be concerns that turn-of-year-effects are structually different between treatment and control group.

These models exploit additional control periods (30 trading days before and after

TY 2007/2008 and TY 2009/2010) to net out both general turn-of-the-year patterns and Germany-specific seasonality. Across all specifications, the strong pre-deadline increases in returns, prices, and trading volumes, as well as their post-deadline reversals, remain robust. Hence, we still find empirical support for H1.

Second, we investigate whether trading behavior is driven by individual investors (Section A.3.2) who should theoretically be affected by CGTR 2009. Using transaction-level data for large-cap stocks from Germany, France, and the UK, we analyze the trading volume per transaction as a proxy for the trading activity of retail investors. Hence, if individual investors drive the stock market effects at TY 2008/2009, we would expect smaller average trading volumes per transaction in this period. The results in Table C.4 show significantly smaller trade sizes shortly before the deadline, indicating that retail investors played a key role in the observed pre-deadline market dynamics.

Third, we verify that our results are not driven by German year-end holidays, during which markets are closed (Section A.3.3). After excluding December 24 and December 31 from the estimation sample (only available for the control group), the results in Tables C.5 and C.6 remain virtually unchanged. Abnormal returns, price adjustments, and the strong pre-deadline spike in trading activity persist, confirming that our findings are not induced by holiday-related market anomalies.

Fourth, section A.3.4 provides evidence for an event-study design with the logarithm of share price as dependent variable. The results show that significant price effects only occur in a very short time window of five trading days before and after the TY 2008/2009. In additional unreported robustness tests, including alternative DiD specifications and triple-difference models, we find no consistent evidence for a more persistent response of stock prices around the deadline. Therefore, our evidence suggests that deadline effects on asset prices were extremely short-term and temporary. Overall, these robustness checks consistently support our main conclusion.

5. Conclusion

We argue that tax capitalization is conditioned by investor attention, with deadlines and media coverage acting as determinants affecting attention. When attention increases, tax privileges can be imperfectly and inordinately capitalized in prices, creating implicit taxes for inattentive investors in the short-term.

Using the German CGTR 2009 as a natural experiment, we identify investor attention by the temporal distance to the deadline (deadline effect) and media coverage (media effect). Although the reform was announced 18 months in advance, we find evidence for large abnormal returns around the deadline. In the two days preceding it, daily returns (share prices, trading volumes) of treated stocks increased abnormally by 2.5 percentage points (7.0%, 296.7%). The cumulative abnormal return CAR one day before the deadline was 10.7%. The media coverage also abnormally increased returns and trading activity. In the last months of 2008, 20 additional weekly articles on the reform resulted in a CAR of about 2.0 pp in one week. Inattentive investors paid abnormally high prices in periods of high attention, implying an implicit tax burden of up to 67.9% or realized and 130.5% of expected returns one day before the deadline.

A limitation of our research is that we focus on one tax reform in one financial market (Germany). Thus, results might differ for other empirical settings and financial markets. Nevertheless, our findings are in line with evidence on mispricing around dividend deadlines, which is a wider phenomenon in stock markets (Hartzmark & Solomon, 2013, 2019).

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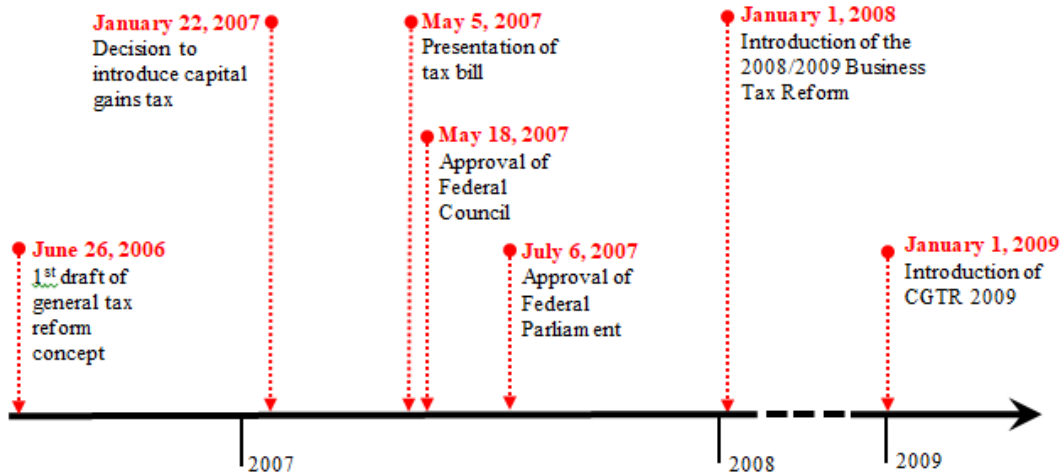
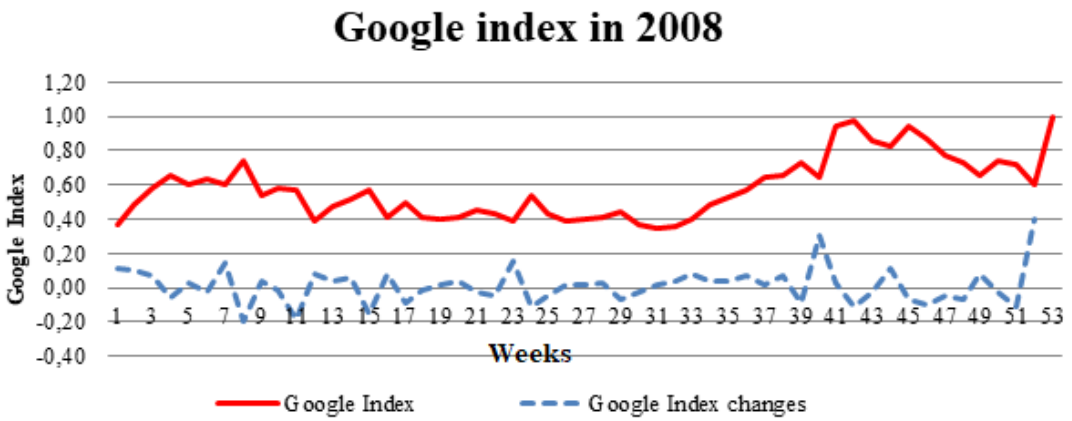
Figures

Figure 1: Timing of the 2008/2009 Business Tax Reform



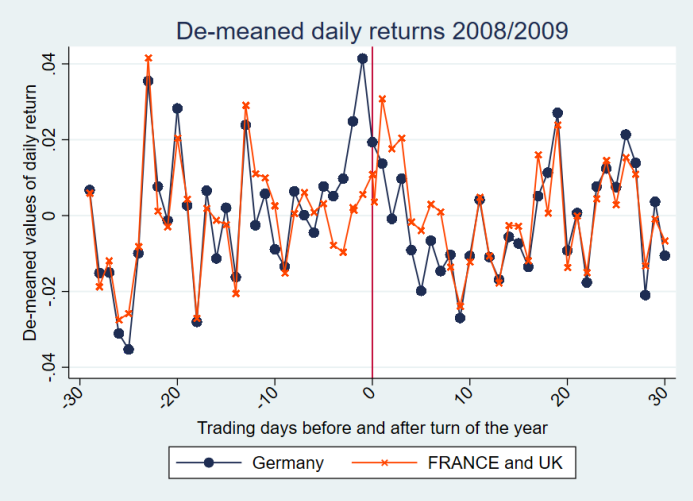
Note: The timeline documents the most important events regarding CGTR 2009 as part of the German Business Tax Reform 2008/2009.

Figure 2: Google Trends Analysis 2008

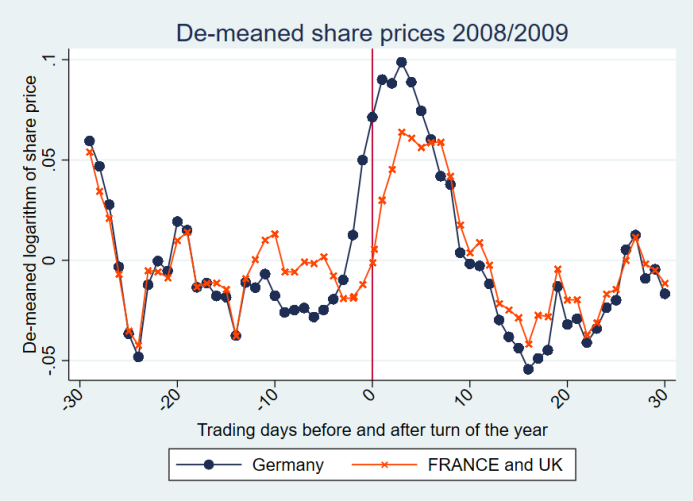


Note: The figure illustrates the weekly development of the Google Trends index in 2008 for the search terms Abgeltungsteuer and Abgeltungssteuer. The data reflect relative search interest over time, with higher values indicating increased public attention to the topic.
Data source: Google Trends (`https://www.google.com/trends`).

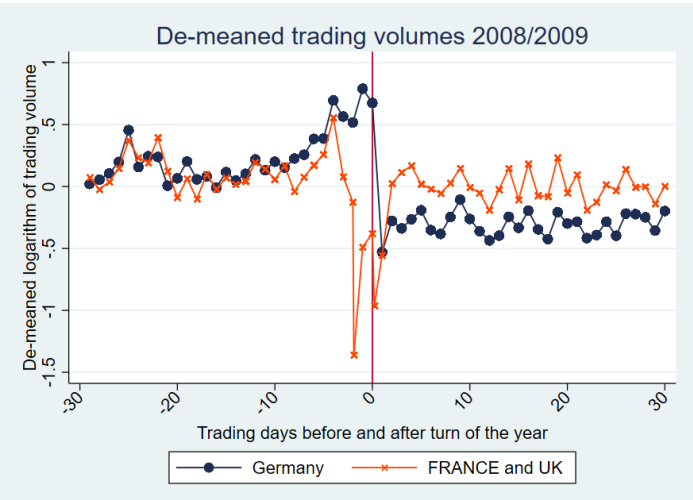
Figure 3: Graphical analyses TY 2008/2009



(a) Daily returns



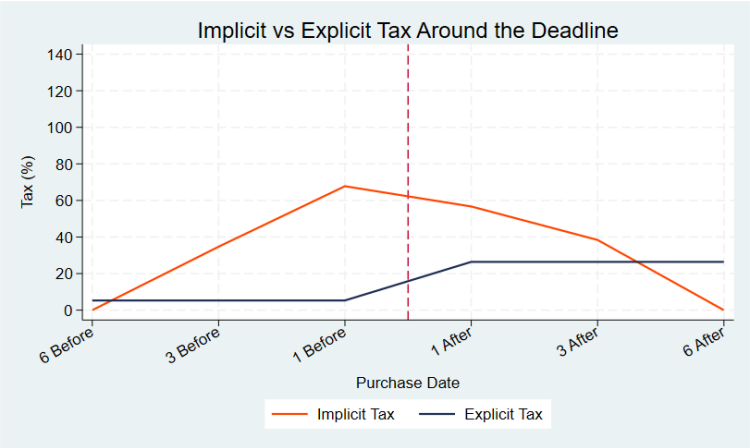
(b) Share prices



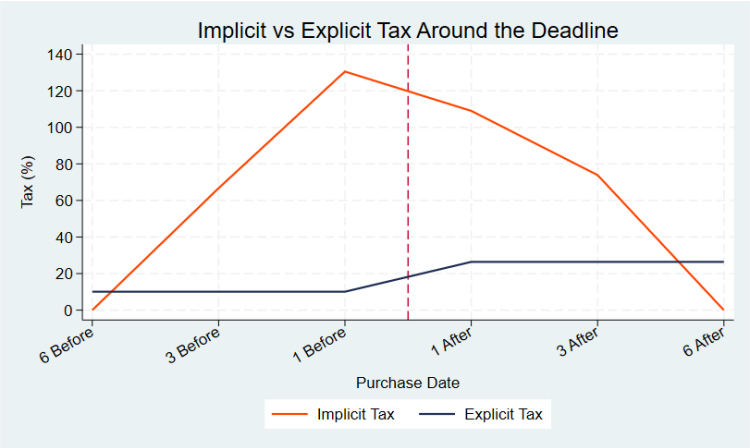
(c) Trading volume

Note: The plot documents average de-meaned values of daily return, the logarithm of share price in local currency, and the logarithm of trading volume (in 1,000 units of traded shares) for the treatment and control groups.

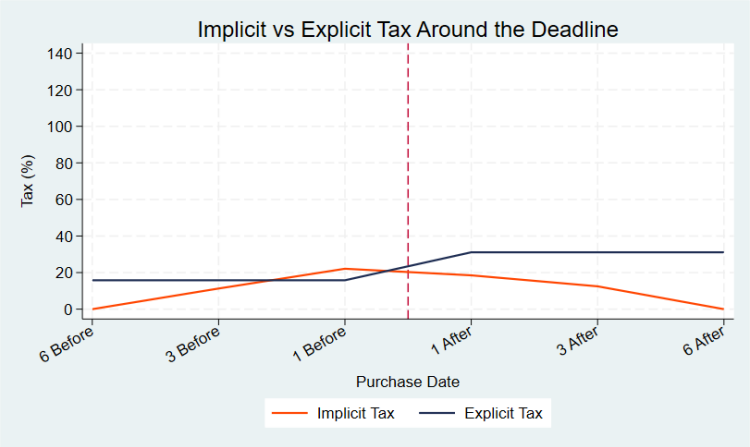
Figure 4: Implicit and Explicit Taxes around the Deadline



(a) Panel A: One Year Empirical



(b) Panel B: One Year Theoretical



(c) Panel D: Five Years Theoretical

Note: The figures report implicit and explicit taxes for purchase dates six, three, and one trading day before and after January 1, 2009, based on a holding period of 12 months. Panel A presents empirical results derived from observed stock price developments, where the gross return corresponds to the realized average annual return of the German market portfolio over a one-year horizon. In contrast, the theoretical panels (Panel B and D) use the model-based DAX return as reported by the German Stock Institute (Deutsches Aktieninstitut). The panels differ in assumed investment horizons: Panel B uses a one-year holding period and Panel D a five-year period.

Tables

Table 1: Capital Gains Tax Reform 2009

	Acquisition before 2009		**Acquisition after 2009**
Holding period	≤ 1 year	> 1 year	not relevant
Fraction of taxable capital gains	50%	0%	100%
Effective tax rate	$0.5 \cdot \tau_i \cdot (1 + \tau_s)$	tax exempt	$\min(\tau_i, \tau_c) \cdot (1 + \tau_s)$
Effective tax rate on capital gains for four personal income tax rates (15%, 25%, 35%, 45%)			
15%	7.91%	0%	15.83%
25%	13.19%	0%	26.38%
35%	18.46%	0%	26.38%
45%	23.74%	0%	26.38%

Note: τ_i is the progressive personal income tax rate, varying from 0% to 45%; τ_c is the general capital gains tax rate, 25%; and τ_s is the solidarity tax surcharge rate, 5.5%. We assume that the taxpayer is a resident of Germany. Shares are qualified as personal property, the participation quota never exceeded 1% over the past five years, and we do not consider personal exemptions or lump-sum deductions, which are of minor relevance.

Table 2: Newspaper articles published in Germany in 2008 describing the CGTR 2009

Daily Newspapers	**Print run**	**Articles**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Bild *,***	4,114,651	15	0	1	2	0	0	0	6	0	1	2	0	3
Süddeutsche Zeitung *	537,857	128	9	8	9	16	7	8	9	5	12	17	8	20
Frankfurter Allgemeine Zeitung *	467,405	218	9	10	28	20	18	15	16	13	14	31	19	25
Kölner Stadtanzeiger/Kölnische Rundschau **	386,751	65	2	6	4	2	2	11	1	2	7	4	18	6
Ostthüringer Zeitung/Thüringer Allgemeine/ Thüringer Landeszeitung **	361,204	39	0	5	9	2	4	4	5	2	1	2	1	4
Die Welt/Die Welt Kompakt **	358,298	184	11	11	31	15	10	24	11	9	13	11	15	23
Stuttgarter Zeitung *	246,955	9	2	2	0	1	0	0	0	0	2	1	1	0
Frankfurter Rundschau *	194,525	37	3	5	3	3	0	2	3	2	1	3	11	1
Handelsblatt	183,170	188	5	12	21	34	16	10	6	4	13	38	7	22
Der Tagesspiegel	169,025	18	1	0	1	1	2	0	1	0	4	0	3	5
Berliner Kurier	161,833	4	0	1	2	0	0	0	0	0	0	0	0	1
Berliner Morgenpost	157,332	22	2	0	2	1	1	4	1	1	1	2	0	7
Westdeutsche Zeitung	143,952	5	0	0	0	0	0	0	0	0	0	0	3	2
Tageszeitung (Taz)	76,400	7	1	1	0	0	0	1	0	1	0	0	0	3
Total	**7,559,358**	**939**	**45**	**62**	**112**	**95**	**60**	**79**	**59**	**39**	**69**	**111**	**86**	**122**

Note: This table reports Germany´s largest daily newspapers in terms of average print runs in 2008. Information regarding the print runs of German newspapers is provided by the German Association for the Determination of the Dissemination of Advertising Media (Informationsgemeinschaft zur Feststellung der Verbreitung von Werbeträgern e.V. (IVW)). The table shows the monthly number of newspaper articles published in Germany in 2008 that describe the new German capital gains tax of 2009. The sample was mainly obtained by research in the database WISO-net.de, which contains articles from most German transregional and regional newspapers. In addition, we analyzed the online archives of important newspapers that are not included in WISO (e.g., Süddeutsche Zeitung). We generally used the following search term: (abgeltungsteuer* OR abgeltungssteuer*) AND (*aktie* OR finanzinstrument*). Hence, we searched for articles connecting information on the new flat capital gains tax, shares (Aktie), or financial instruments (Finanzinstrument). Note that Abgeltungsteuer/Abgeltungssteuer is the generally accepted term for the new German flat tax on capital gains, dividends, and interest.

* The articles from these newspapers were collected manually from the respective online archives and selected by the term Abgeltungsteuer or Abgeltungssteuer (the flat capital gains tax) in combination with Aktie (share) or Finanzinstrument (financial instrument).

** Some newspapers that cooperate closely and have the same regional catchment areas (e.g., Kölner Stadtanzeiger and Kölnische Rundschau) are displayed jointly.

*** The readership of the daily newspaper Bild is less well educated and, on average, earns lower incomes. This explains the quite low number of articles on CGTR 2009.

Table 3: Descriptive Statistics

	German stock exchange			French stock exchange			UK stock exchange		
Observations	60,541			80,338			67,452		
Variable	Mean	Median	StD	Mean	Median	StD	Mean	Median	StD
Share price	28.66	10.40	82.63	54.15	18.34	276.41	446.96	265.75	625.22
Daily return (%)	0.02	0.00	4.15	-0.14	0.00	4.20	-0.03	0.00	3.68
Trading volume (1,000s)	658.24	20.90	3,577.38	474.07	5.80	2,051.80	3,976.71	706.75	15,490.47
Market value (millions)	2,650.06	151.17	9,037.72	3,083.81	170.28	10,788.58	3,740.29	568.10	11,392.67
Book value (millions)	1,674.94	106.16	5,585.96	2,148.34	157.93	7,106.02	2,179.96	298.84	7,861.26
EBITDA (millions)	698.89	26.00	2,317.18	614.22	31.04	2,321.66	667.52	79.62	2,771.82
Earnings per Share (EPS)	17.59	1.78	131.60	10.42	3.12	34.30	67.67	39.70	239.02

Note: Daily share prices, market values, book values, EBITDA and EPS are reported in local currency (euros or British pounds). Trading volume is reported in thousands of shares traded per day. Daily return is the relative change in share price compared to the share price of the preceding trading day.

Table 4: DiD Results (Two Trading Days)

VARIABLES	(1) Daily Return	(2) Daily Return	(3) Share Price (ln)	(4) Share Price (ln)	(5) Trading Volume (ln)	(6) Trading Volume (ln)
CloseBefore[2D]	0.0090***	0.0083***	0.0049	0.0104***	-0.7610***	-0.7380***
	(0.001)	(0.001)	(0.005)	(0.004)	(0.030)	(0.029)
CloseBefore[2D] × Germany	0.0223***	0.0223***	0.0644***	0.0656***	1.2840***	1.2830***
	(0.002)	(0.002)	(0.008)	(0.008)	(0.051)	(0.051)
CloseAfter[2D]	0.0249***	0.0292***	0.0459***	0.0315	-0.3920***	-0.2980***
	(0.001)	(0.004)	(0.005)	(0.049)	(0.029)	(0.093)
CloseAfter[2D] × Germany	-0.0179***	-0.0181***	0.0523***	0.0505***	-0.2430***	-0.2330***
	(0.002)	(0.002)	(0.009)	(0.009)	(0.052)	(0.053)
Observations	67,148	67,148	67,148	67,148	67,148	67,148
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Month FE	No	Yes	No	Yes	No	Yes
Firm Controls	No	Yes	No	Yes	No	Yes
Adjusted R^2	0.0301	0.0311	0.9960	0.9960	0.9180	0.9180

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.
Note: This table presents the difference-in-differences (DiD) estimation results for a two-day window around the deadline (January 1, 2009). The sample comprises the 60-day windows around January 1, 2009. The dependent variables are Daily Return, Share Price (ln), and Trading Volume (ln). CloseBefore[2D]is an indicator for the last two trading days of a calendar year. Analogously, CloseAfter[2D] identifies the first two trading days of the subsequent calendar year. Germany is an indicator variable for the German stock market. Heteroskedasticity-robust standard errors are clustered at the firm level. Detailed variable definitions are provided in Table A1.

Table 5: DiD Results (Two and Five Trading Days)

VARIABLES	(1) Daily Return	(2) Daily Return	(3) Share Price (ln)	(4) Share Price (ln)	(5) Trading Volume (ln)	(6) Trading Volume (ln)
CloseBefore[5D]	-0.0020**	-0.0026***	-0.0129***	-0.0067	-0.3090***	-0.2910***
	(0.001)	(0.001)	(0.005)	(0.004)	(0.028)	(0.027)
CloseBefore[5D] × Germany	0.0180***	0.0179***	0.0166**	0.0179**	0.7410***	0.7410***
	(0.002)	(0.002)	(0.008)	(0.008)	(0.043)	(0.043)
CloseBefore[2D]	0.0108***	0.0108***	0.0161***	0.0161***	-0.4940***	-0.4950***
	(0.001)	(0.001)	(0.002)	(0.002)	(0.028)	(0.028)
CloseBefore[2D] × Germany	0.0066**	0.0066**	0.0499***	0.0499***	0.6390***	0.6390***
	(0.003)	(0.003)	(0.004)	(0.004)	(0.047)	(0.047)
CloseAfter[2D]	0.0176***	0.0207***	-0.0216***	-0.0214	-0.5620***	-0.4530***
	(0.002)	(0.004)	(0.006)	(0.049)	(0.034)	(0.095)
CloseAfter[2D] × Germany	-0.0050	-0.0052*	0.0186*	0.0160	-0.0604	-0.0505
	(0.003)	(0.003)	(0.011)	(0.011)	(0.064)	(0.065)
CloseAfter[5D]	0.0070***	0.0092***	0.0657***	0.0633***	0.1280***	0.1190***
	(0.001)	(0.001)	(0.004)	(0.004)	(0.027)	(0.027)
CloseAfter[5D] × Germany	-0.0108***	-0.0107***	0.0360***	0.0368***	-0.0887*	-0.0889*
	(0.002)	(0.002)	(0.008)	(0.008)	(0.046)	(0.046)
Observations	67,148	67,148	67,148	67,148	67,148	67,148
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Month FE	No	Yes	No	Yes	No	Yes
Firm Controls	No	Yes	No	Yes	No	Yes
Adjusted R^2	0.0321	0.0333	0.9960	0.9960	0.9190	0.9190

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.
Note: This table presents the difference-in-differences (DiD) estimation results for the baseline sample over two- and five-day windows around the deadline (January 1, 2009). The sample comprises the 60-day windows around January 1, 2009. The dependent variables are Daily Return, Share Price (ln), and Trading Volume (ln). CloseBefore[2D] and CloseBefore[5D] are indicators for the last two or last five trading days of a calendar year, respectively. Analogously, CloseAfter[2D] and CloseAfter[5D] identify the first two or first five trading days of the subsequent calendar year. Germany is an indicator for the German stock market. Heteroskedasticity-robust standard errors are clustered at the firm level. Detailed variable definitions are provided in Table A1.

Table 6: Returns and Implicit Taxes of the German Market Portfolio

(1) Purchase Date	(2) Gross Return	(3) Premium	(4) Net Return	(5) Implicit Tax	(6) Explicit Tax	(7) Total Tax
Panel A: Empirical – One Year						
6 Days Before	15.8%	0.0%	14.9%	0.0%	5.3%	5.3%
3 Days Before	15.8%	5.5%	9.5%	34.7%	5.3%	39.9%
1 Day Before	15.8%	10.7%	4.2%	67.8%	5.3%	73.1%
1 Day After	15.8%	8.9%	5.0%	56.7%	26.4%	68.1%
3 Days After	15.8%	6.1%	7.1%	38.4%	26.4%	54.7%
6 Days After	15.8%	0.0%	11.6%	0.0%	26.4%	26.4%
Panel B: Theoretical – One Year						
6 Days Before	8.2%	0.0%	7.4%	0.0%	10.1%	10.1%
3 Days Before	8.2%	5.5%	1.9%	66.7%	10.1%	76.8%
1 Day Before	8.2%	10.7%	-3.3%	130.5%	10.1%	140.6%
1 Day After	8.2%	8.9%	-0.5%	109.0%	26.4%	106.6%
3 Days After	8.2%	6.1%	1.6%	73.9%	26.4%	80.8%
6 Days After	8.2%	0.0%	6.0%	0.0%	26.4%	26.4%
Panel C: Theoretical – Two Years						
6 Days Before	17.1%	0.0%	15.3%	0.0%	10.5%	10.5%
3 Days Before	17.1%	5.5%	9.8%	32.0%	10.5%	42.5%
1 Day Before	17.1%	10.7%	4.6%	62.7%	10.5%	73.1%
1 Day After	17.1%	8.9%	6.0%	52.4%	26.5%	65.0%
3 Days After	17.1%	6.1%	8.1%	35.5%	26.5%	52.6%
6 Days After	17.1%	0.0%	12.5%	0.0%	26.5%	26.5%
Panel D: Theoretical – Five Years						
6 Days Before	48.3%	0.0%	40.7%	0.0%	15.8%	15.8%
3 Days Before	48.3%	5.5%	35.2%	11.3%	15.8%	27.2%
1 Day Before	48.3%	10.7%	30.0%	22.1%	15.8%	38.0%
1 Day After	48.3%	8.9%	26.7%	18.5%	31.1%	44.7%
3 Days After	48.3%	6.1%	28.8%	12.5%	31.1%	40.3%
6 Days After	48.3%	0.0%	33.3%	0.0%	31.1%	31.1%
Panel E: Theoretical – Ten Years						
6 Days Before	119.9%	0.0%	90.4%	0.0%	24.6%	24.6%
3 Days Before	119.9%	5.5%	84.9%	4.6%	24.6%	29.2%
1 Day Before	119.9%	10.7%	79.7%	8.9%	24.6%	33.5%
1 Day After	119.9%	8.9%	67.1%	7.5%	38.6%	44.1%
3 Days After	119.9%	6.1%	69.2%	5.1%	38.6%	42.3%
6 Days After	119.9%	0.0%	73.7%	0.0%	38.6%	38.6%

Note: This table reports theoretical and empirical returns and implicit taxes around the deadline for the German market portfolio. The variable Purchase Date (1) indicates when the market portfolio is bought, i.e., one, three, or six days before or after the reference date. Based on the purchase timing, investors are affected by price premiums (3) and expect implicit taxes (5) as well as explicit taxes (6) resulting in the total tax burden (7). Panels A – E represent different holding periods: Panels A and B show results for a one-year holding period, Panel C corresponds to a two-year horizon, while Panels D and E display five- and ten-year holding periods, respectively. Panel A shows empirical results derived from market data, while theoretical Panels (B – E) present model-based gross returns that the market portfolio should achieve. The theoretical values are taken from the DAX return triangle published by the The German Stock Institute (Deutsches Aktieninstitut). All values are expressed in percentage terms.

Table 7: Media and Deadline Effects

VARIABLES	(1) Daily Return	(2) Daily Return	(3) Daily Return	(4) Trading Volume (ln)	(5) Trading Volume (ln)	(6) Trading Volume (ln)
Weekly Articles	0.0002***	-0.0000	-0.0000	-0.0011**	0.0019***	0.0019***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)
Weekly Articles × Germany	0.0002***	0.0002***	0.0002***	0.0135***	0.0091***	0.0091***
	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)
Weekly Articles × December		0.0005***	0.0006***		-0.0085***	0.0023***
		(0.000)	(0.000)		(0.001)	(0.001)
Weekly Articles × Germany × December		0.0000	-0.0002***		0.0116***	0.0001
		(0.000)	(0.000)		(0.001)	(0.001)
CloseBefore[5D]			0.0018*			-0.2590***
			(0.001)			(0.028)
CloseBefore[5D] × Germany			0.0194***			0.8440***
			(0.002)			(0.043)
CloseBefore[2D]			-0.0020			-0.5900***
			(0.002)			(0.034)
CloseBefore[2D] × Germany			0.0079***			0.4420***
			(0.003)			(0.051)
CloseAfter[2D]			0.0184***			-0.4470***
			(0.002)			(0.029)
CloseAfter[2D] × Germany			-0.0054*			0.3070***
			(0.003)			(0.055)
CloseAfter[5D]			0.0090***			0.1440***
			(0.001)			(0.027)
CloseAfter[5D] × Germany			-0.0097***			-0.1680***
			(0.002)			(0.045)
Observations	133,419	133,419	133,419	133,419	133,419	133,419
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm Controls	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.0109	0.0122	0.0172	0.9190	0.9190	0.9210

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Note: This table presents the difference-in-differences (DiD) estimation results with controls based on newspaper coverage in December preceding the reform deadline (January 1, 2009). The sample comprises the 120-day window around the deadline (January 1, 2009). The dependent variables are Daily Return and Trading Volume (ln). CloseBefore[2D] and CloseBefore[5D] are indicators for the last two or five trading days of a calendar year. Analogously, CloseAfter[2D] and CloseAfter[5D] identify the first two or five trading days of the subsequent calendar year. Germany is an indicator for the German stock market. December is an indicator for the last four weeks of a calendar year. Heteroscedasticity-robust standard errors are clustered by stock level. Variable definitions are provided in Table A1.

Table 8: Heterogeneity: Market Value, Loser Stocks, Dividend Stocks

	(1)	(2)	(3)	(4)	(5)	(6)
	Market Value		Loser Stocks		Dividend Payers	
	Small	Large	Yes	No	Yes	No
VARIABLES	Daily Return	Daily Return	Daily Return	Daily Return	Daily Return	Daily Return
CloseBefore[2D] × Germany	0.0254***	0.0187***	0.0235***	-0.0054	0.0216***	0.0146**
	(0.004)	(0.003)	(0.002)	(0.008)	(0.003)	(0.007)
Difference	0.0069		0.0289***		0.0070	
	(0.005)		(0.008)		(0.008)	
CloseAfter[2D] × Germany	-0.0223***	-0.0137***	-0.0189***	-0.0039	-0.0133***	-0.0255***
	(0.004)	(0.003)	(0.003)	(0.009)	(0.003)	(0.007)
Difference	-0.0086*		-0.0151*		0.0122	
	(0.005)		(0.009)		(0.008)	
Observations	33,754	33,394	63,788	3,360	47,312	11,982
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.0389	0.0145	0.0101	0.1360	0.0101	0.0070

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.
Note: This table presents the difference-in-differences (DiD) estimation results for the heterogeneity analysis by firm characteristics. The sample comprises the 60-day window around the deadline (January 1, 2009). The dependent variable is the Daily Return.CloseBefore[2D]is an indicator for the last two trading days of a calendar year. Analogously, CloseAfter[2D] identifies the first two trading days of the subsequent calendar year. Germany is an indicator for the German stock market. Market Value is an indicator for firms above the median market value. Loser is an indicator for stocks whose average share price at the end of the year is lower than the average share price at the end of the preceding year. Dividend is an indicator for dividend-paying stocks. Heteroskedasticity-robust standard errors are clustered at the firm level. Detailed variable definitions are provided in Table A1.

A. Appendices

A.1. Data Collection, Processing, and Variables

Our analyses are primarily based on data from Datastream (Thomson-Reuters). For our tests in Subsection A.3.2, we also rely on Bloomberg data. We downloaded the data via standard procedures software. In detail, we considered the following items from Datastream: Date, MV (market value), INDUSTRY, PTBV (price-to-book value), DD (adjusted dividend rate), PYD (payment date of the dividend), P (adjusted share price), VO (turnover by volume; trading volume), and EBITDA_A (annual EBITDA). We considered the following items from Bloomberg: Date, CUR_MLK_CAP (current market capitalization), BOOK_VAl_PER_SH (book value per share), EBITDA, EQY_SH_OUT (shares outstanding), EQY_WEIGHTED_AVG_PX (equity-weighted average price), VWAP_VOLUME (weight-adjusted trading volume), VWAP_NUM_TRADES (weight-adjusted number of trading transactions of an individual at one trading day). We hand collected additional data on the number of articles on the German CGTR 2009 (see Table 2). Table C.1 provides information on how we used the data to define our regression variables.

[Table C.1 about here]

A.2. Graphical Analysis of Placebo Periods

To rule out that country-specific seasonal year-end trends drive these results, we replicate the graphs for the turn of the year 2007/08 and 2009/2010. In these placebo periods no comparable trends as in Figure 3 emerge.

[Figure B.1 about here]

A.3. Additional Analyses and Robustness Tests

A.3.1. Triple DiD Analysis

A potential issue with the DiD approach is that the turn-of-the-year effects in the German market may structurally differ from those in the control markets (e.g. Poterba & Weisbenner 2001). To address this we expand our Eq. (1) by adding two control periods. We add 60 trading days around January 1, 2008 and around January 1, 2010 in addition to the focal 2008/2009 window (additional control periods). Using both a control group and control periods yields a triple-difference specification. Beyond accounting for general market movements around TY 2008/2009 via the control markets, the added periods allow us to net out Germany-specific seasonality that could bias the baseline DiD. The triple-difference model is calculated as follows:

$$
\begin{aligned}
Y_{it} = {} & \alpha + \beta_1 \cdot CloseBefore_t + \beta_2 \cdot Germany_i + \beta_3 \cdot 0809_t \\
& + \beta_4 \cdot CloseBefore_t \times Germany_i + \beta_5 \cdot CloseBefore_t \times 0809_t \\
& + \beta_6 \cdot \mathbf{CloseBefore}_t \times \mathbf{Germany}_i \times \mathbf{0809_t} \\
& + \beta_7 \cdot CloseAfter_t + \beta_8 \cdot CloseAfter_t \times Germany_i \\
& + \beta_9 \cdot CloseAfter_t \times 0809_t + \beta_{10} \cdot \mathbf{CloseAfter}_t \times \mathbf{Germany}_i \times \mathbf{0809_t} \\
& + \beta_{11} \cdot LongAfter_t + \beta_{12} \cdot LongAfter_t \times Germany_i \\
& + \beta_{13} \cdot LongAfter_t \times 0809_t + \beta_{14} \cdot LongAfter_t \times Germany_i \times 0809_t \\
& + \chi C_{it} + \varphi_{it} + \psi_{it} + \rho_i + \epsilon_{it}.
\end{aligned}
\tag{A.1}
$$

The indicator variable *0809* is equal to 1 for the TY 2008/2009 period. Hence, the interactions $CloseBefore \times Germany$ and $CloseBefore \times 0809$ flexibly control for structural differences in turn-of-the-year effects across (i) the German versus control markets and (ii) the 2008–2009 window versus other years. $LongAfter$ and its interactions control for the period after $CloseAfter$. In Eq. (A.1), the CGTR 2009 effect is identified

by the triple interaction $CloseBefore \times Germany \times 0809$. We expect $\beta_6 > 0$ for daily returns, share prices, and trading volumes. Similarly, we expect $\beta_{10} < 0$ for daily returns and trading volumes, but $\beta_{10} > 0$ for share prices, since prices take some time to revert to their base level.

Columns (1)–(2) of Table C.2 present results for daily returns, while columns (3)–(4) display estimates for share prices (in logarithms), and columns (5)–(6) report effects on trading volumes (in logarithms). The triple interaction term $CloseBefore[2D] \times Germany \times 0809$ identifies the CGTR 2009 effect, isolating abnormal market reactions during the last two trading days of 2008 relative to other years and markets.

[Table C.2 about here]

The coefficient on this interaction is positive and highly significant across specifications for daily returns and share prices (columns (1)–(4)). In our preferred specification with full set of control variables and industry–month fixed effects (column 2) we observe an increase of 2.7 pp for daily returns. The average increase of share prices is even higher 5.8%. This confirms that the strong pre-deadline effects observed in the baseline DiD persist even when controlling for potential Germany- and year-specific seasonality. Moreover, the corresponding post-deadline interaction $CloseAfter[2D] \times Germany \times 0809$ is negative and statistically significant, indicating a clear reversal in early 2009 of –1.9 pp for daily returns.

For trading volumes, we find consistent evidence of increased market activity prior to the deadline. The average abnormal return for trading volumes amounts to approximately 141%, implying that trading volumes rose more than 140% in the final two trading days of 2008 compared with other turn-of-the-year periods.

Table C.3 presents the results of the extended triple-difference (DDD) specification, which combines both two-day and five-day event windows around the reform deadline. This model follows Eq. (2) and builds on the simple DDD framework by allowing for

different time horizons before and after the deadline, thereby testing the robustness and persistence of the identified effects.

The triple interaction terms $CloseBefore[5D] \times Germany \times 0809$ and $CloseBefore[2D] \times Germany \times 0809$ are positive and highly significant for daily returns and share prices, indicating strong pre-deadline price pressure consistent with tax-motivated intertemporal shifting of trades. Quantitatively, daily returns rise by roughly 2.0 percentage points in the trading days -5 to -3 and 2.8 pp on the trading days -2 to -1. Share prices are abnormally high before the deadline with an average increase of 5.2% for the last two trading days. These results confirm that the pre-deadline effect is not confined to a narrow two-day window but extends over a broader trading horizon. The corresponding post-deadline coefficients $CloseAfter[5D] \times Germany \times 0809$ and $CloseAfter[2D] \times Germany \times 0809$ are negative and significant for daily returns, with magnitudes of approximately –1.8 pp, indicating a clear reversal once the reform took effect.

Regarding trading volumes, we find consistent evidence of heightened market activity preceding the deadline. The DiD estimation for $CloseBefore[5D] \times Germany \times 0809$ and $CloseBefore[2D] \times Germany \times 0809$ imply an effect of 111% suggesting a huge increase in trade volume, followed by significant contractions thereafter. This again mirrors the strong pre-deadline surge and post-deadline normalization seen in previous tables.

[Table C.3 about here]

Overall, the results of the triple differences models reinforce the robustness of the baseline findings. The strong, symmetric pattern of return, price and volume adjustments before and after the reform deadline persists even when controlling for multiple event windows and alternative control periods. This provides further evidence that the observed market dynamics are driven by anticipatory trading in response to the CGTR 2009 rather than by general turn-of-the-year effects.

A.3.2. Herding of Individual Investors

Since we have no access to stock ownership data on a daily or even monthly basis, we proxy retail trading by small transactions, following the herding literature (Bhattacharya, 2001; Barber et al., 2008). Small trades are more likely to reflect retail activity, as individual investors typically execute lower-volume trades and devote less attention to markets. Information costs are largely fixed per transaction (Reis, 2006), creating stronger incentives for large investors to stay informed.

Thus, institutional and wealthy investors with high trading volumes per transaction are more likely to be tax-aware. We therefore expect that investor attention should be negatively associated with the daily average trading volume per transaction (= aggregate transaction volume in local currency of a stock divided by the daily number of executed transactions of that stock, Trading volume per transaction) in the market. We therefore expect that trading activity by individual investors increases (i) just before the deadline (deadline effect) and (ii) in weeks with intense media coverage (media effect).

Since Datastream does not report transaction counts, we gathered daily transaction numbers for all DAX 30, CAC 40, and FTSE 100 constituents as of December 31, 2008. This smaller sample consists of large-cap stocks only, so we do not control for industry–month fixed effects. Transactions are defined as all sell and buy transactions executed for a given stock on a trading day.

We use the logarithm of trading volume per transaction as the dependent variable, defined as total daily trading volume (shares × price) divided by the number of transactions. We estimate models analogous to Eq. 2, using trading volume per transaction as dependent variables.

[Table C.4 about here]

Table C.4 reports a decrease in trading volume per transaction. The average effect is $exp(-0.0402 - 1/2 \cdot 0.019^2) - 1 = -4.0\%$ (Table C.4 column (2)). Table C.4 column

(4) confirms that transaction sizes were smaller in the two trading days before (and after) the deadline. We interpret these findings as evidence that late-2008 volume and price spikes were driven primarily by individual investors with small trades and limited investor attention.

A.3.3. Excluding German Year-End Holidays

To ensure that our results are not driven by holiday-related trading behavior, we exclude December 24 and December 31, when stock markets in Germany are closed. Consequently, these non-trading days are removed from the estimation window. Table C.5 reports the results for the two-day event window, while Table C.6 presents the corresponding estimations for the two- and five-day event windows after excluding these holidays.

[Table C.5 about here]

The results remain qualitatively unchanged after excluding the non-trading days. We continue to observe significant positive abnormal daily returns and increases in trading volume for German stocks in the pre-deadline period, followed by a reversal immediately after the reform deadline. These patterns are fully consistent with our baseline estimations. In addition, the estimated effects on share prices exhibit a similar transitory pattern. Prices rise abnormally in the final days before the deadline and partially adjust downward afterward, suggesting temporary overvaluation due to heightened investor attention.

[Table C.6 about here]

Across all specifications and dependent variables, the magnitudes of the coefficients and their levels of statistical significance remain stable. This indicates that the observed effects are not driven by holiday-related distortions or by thin trading around Christmas and New Year's Eve. Overall, the robustness check reinforces our main conclusion that the abnormal return, price and volume dynamics are attributable to changes in investor

attention surrounding the CGTR 2009 deadline, rather than to seasonal or holiday-induced market anomalies.

A.3.4. Transitory Dynamics Around the CGTR 2009 Deadline

Figure B.2 plots the daily development of German share prices relative to the control group from five trading days before to thirty trading days after January 1, 2009. The figure shows a clear and temporary price increase in the last days of 2008, with the largest positive coefficients appearing between three and one days before the reform deadline. Immediately after January 1, the acquisition premium reverses, producing significantly negative coefficients during the first trading days of 2009. From roughly day 5 onward, all coefficients fluctuate closely around zero and are statistically insignificant.

[Figure B.2 about here]

In additional robustness tests, including alternative DiD specifications and extended triple-difference models, we again find that all meaningful effects are concentrated exclusively in the narrow event window around the reform deadline. When we expand the model to include triple-interaction terms, i.e., for an eight-day window before and after the deadline, these variables are systematically omitted. This becomes the case because they are perfectly collinear with the existing two- and five-day interaction terms. This implies that the extended window provides no additional independent variation beyond what is already captured by the shorter windows *CloseBefore[2D/5D]* and *CloseAfter[2D/5D]*. This result is consistent across all dependent variables (daily returns, share prices, and trading volumes).

The absence of identifiable coefficients for the extended windows confirms that the abnormal market behavior surrounding the CGTR 2009 is entirely short-lived and concentrated in the immediate days around January 1, 2009. In particular, abnormal price movements are strictly confined to the end-of-year deadline and disappear quickly

thereafter, with no evidence of persistent effects over longer horizons. This pattern reinforces our choice of focusing on two- and five-day event windows in the difference-in-differences analysis, as these intervals fully capture the period in which significant reform-related adjustments occur.

A.3.5. Media effects

In Table C.7, we re-estimate the media–deadline specification without firm- and market-level controls to verify that our baseline findings are not driven by control-variable choices. The results remain highly consistent with those reported in the main part of the paper.

[Table C.7 about here]

The coefficients on newspaper coverage in December, as well as the interaction terms with Germany and the deadline indicators, remain statistically significant and of similar magnitude. Both the pre-deadline increases and post-deadline reversals in returns and trading volume are preserved when controls are omitted. This robustness check demonstrates that our key results do not depend on the inclusion of firm characteristics or fixed effects, and that the deadline-driven market reactions documented in the main analysis are genuine rather than artifacts of model specification.

In addition to the baseline DiD results presented in Table 7, we also test the triple-difference specification. In the triple-difference setting, *Weekly Articles* $\times$ *Germany* $\times$ 0809 identifies the specific media effect in 2008.

Table C.8 reports the regression results. Column (2) including firm controls shows a statistically significant, though economically small, media effect on daily returns (*Weekly Articles* $\times$ *Germany*). One additional article on the CGTR 2009 increases daily returns by 0.01 pp. These results are robust to controlling for deadline effects by including the triple-difference indicators (column (4)) for the last two and five trading days. The interactions *CloseBefore[5D]* $\times$ *Germany* $\times$ 0809 and *CloseBefore[2D]* $\times$ *Germany* $\times$ 0809 indicate

sizable deadline effects: daily returns rise by approximately 1.5 pp (3.3 pp) in the trading days -5 to -3 (-2 and -1), consistent with our main findings (Table 5). Media effects remain detectable but very small.

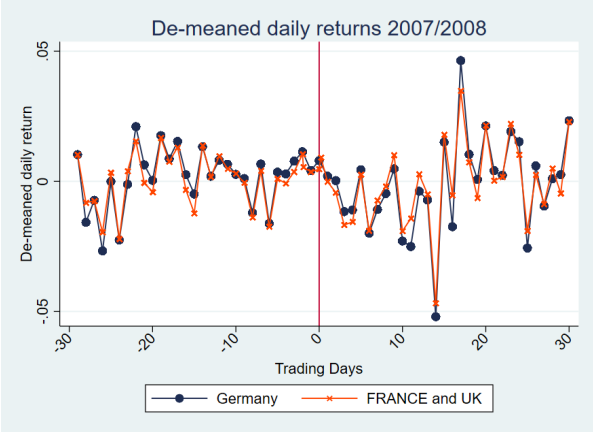
We next analyze how media coverage affects trading volumes. Table **??**, Columns (6) shows a strong positive association. One additional article is linked to a 0.6% increase in trading volume. When controlling for the deadline effect, the effect becomes clearer. Columns(8) show that an additional article is associated with increases in trading volume of 0.5%.

[Table C.8 about here]

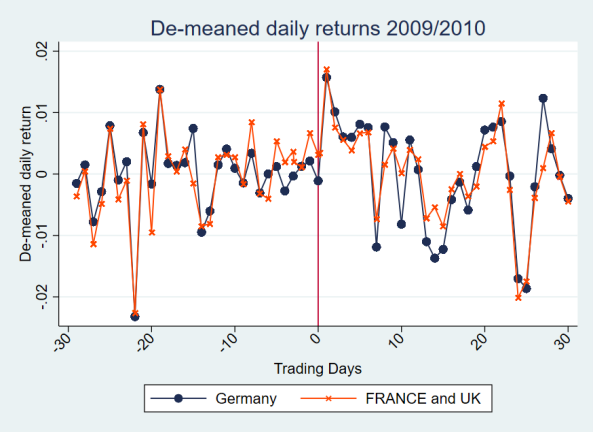
Overall, the direct media effect on daily returns is small, whereas the deadline effect is large, indicating that deadlines rather than media coverage drove the abnormal market reactions. At the same time, media coverage appears to influence trading volumes above and beyond the deadline effect.

Appendix Figures

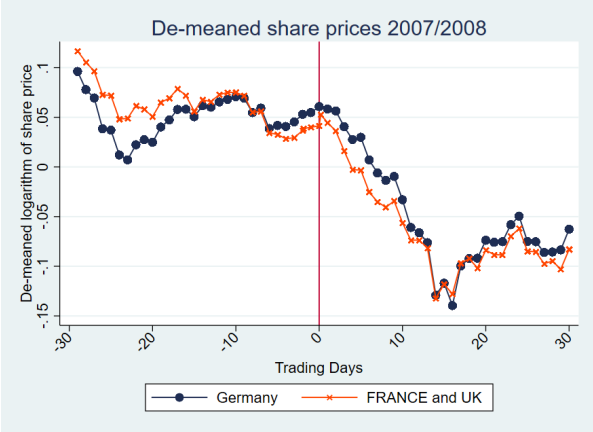
Figure B.1: Demeaned daily returns, share prices, and trading volumes, TY 2007/2008, TY 2009/2010.



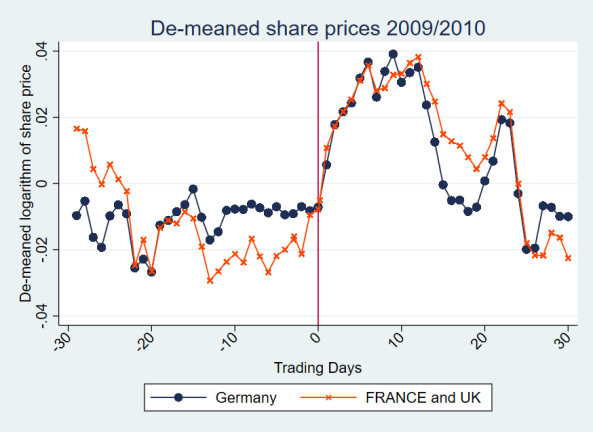
(a) Daily return



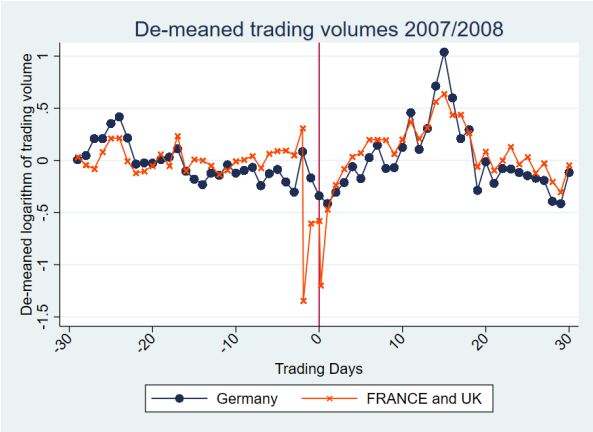
(b) Daily return



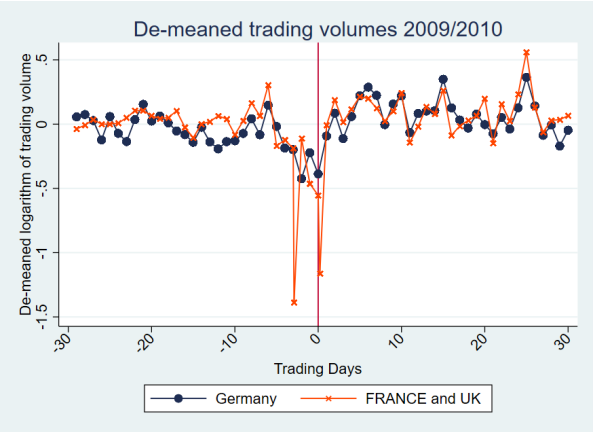
(c) Share prices



(d) Share prices



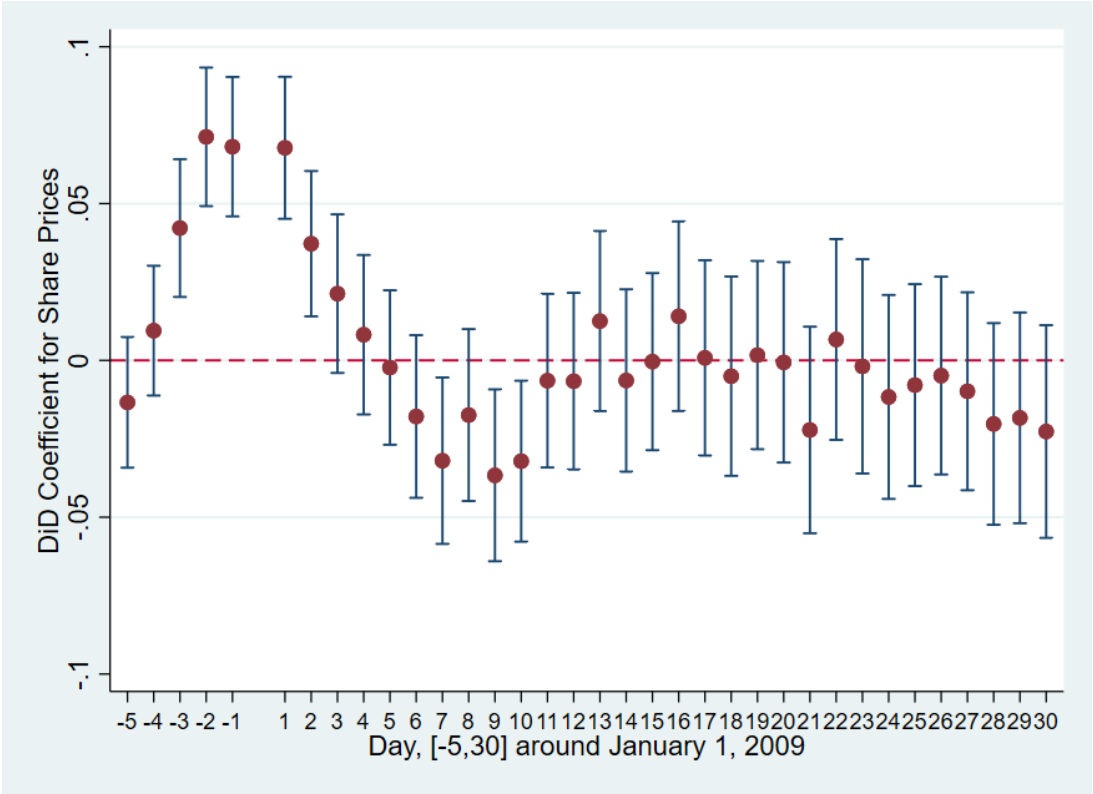
(e) Trading volumes



(f) Trading volumes

Note: The plot documents average de-meaned values of daily return, the logarithm of share price in local currency, and the logarithm of trading volume (in 1,000 units of traded shares) for the treatment and control groups during tax years 2007/2008 and 2009/2010.

Figure B.2: Daily Share Prices



Note: The figure shows the daily development of German Share prices (compared to the control group) from the last trading days of the year 2008 to the first 30 trading days of the year 2009. While share prices are abnormally high before the reform deadline (starting 3 days before turn of the year), they revert back to a normal level roughly 5 days after the turn of the year.

Appendix Tables

Table C.1: Definition of variables

Variable	Definition
Dependent variables	
Daily return	Relative change of actual closing price of a stock compared to the closing price for the last trading day
Share price	Logarithm of the closing price of a stock in local currency for the current trading day
Trading volume	Logarithm of number of shares traded (in thousands) on the current trading day
Volume per trade	Logarithm of transaction volume in the local currency on the current trading day (number of shares traded multiplied by daily share price) divided by the daily number of market transactions
Indicator variables	
CloseBefore[2D]	indicator for the final two trading days of a calendar year
CloseBefore[5D]	indicator for the final five trading days of a calendar year
CloseAfter[2D]	indicator for the first two trading days of a calendar year
CloseAfter[5D]	indicator for the first five trading days of a calendar year
Germany	indicator for the German stock market
0809	indicator for the 2008–2009 period
Variables for identification of media effects	
Weekly Articles	Weekly number of articles on CGTR 2009; Saturdays and Sundays are considered as the first days of a week
DECEMBER	indicator for articles that were published in the last four weeks of a calendar year
General control variables	
EBITDA	EBITDA (earnings before interest, taxes, depreciation, and amortization) measured by the average market capitalization in the first 10 days of the observation period; for each turn-of-the-year cycle, we rely on EBITDA of the coming year (e.g., 2009 for TY 2008/2009) to consider earnings expectations
Market value	Logarithm of average market capitalization in millions of local currency in the first 10 days of the observation period
Book value	Logarithm of the book value of equity in millions of local currency
Variables for heterogeneity tests	
Dividend	indicator for dividend-paying stocks
Loser	indicator for stocks with a reduction of average share price at the end of the year compared to the average share price at the end of the preceding year
Market Value	indicator for firms above the median market value in the first ten trading days of a turn-of-the-year cycle

Table C.2: Simple Triple-Differences Results

VARIABLES	(1) Daily Return	(2) Daily Return	(3) Share Price (ln)	(4) Share Price (ln)	(5) Trading Volume (ln)	(6) Trading Volume (ln)
CloseBefore[2D]	0.0068***	0.0053***	0.0220***	0.0130***	-0.8850***	-0.8370***
	(0.001)	(0.001)	(0.002)	(0.002)	(0.022)	(0.021)
CloseBefore[2D] × Germany	-0.0029***	-0.0030***	0.0072*	0.0094***	0.5870***	0.5850***
	(0.001)	(0.001)	(0.004)	(0.003)	(0.040)	(0.040)
CloseBefore[2D] × 0809	0.0021**	0.0021**	-0.0214***	-0.0201***	0.1590***	0.1580***
	(0.001)	(0.001)	(0.004)	(0.004)	(0.031)	(0.031)
CloseBefore[2D] × 0809 × Germany	0.0265***	0.0267***	0.0704***	0.0561***	0.8850***	0.8810***
	(0.003)	(0.003)	(0.009)	(0.008)	(0.053)	(0.053)
CloseAfter[2D]	0.0049***	0.0064***	0.0312***	0.0410***	-0.2040***	-0.2510***
	(0.001)	(0.001)	(0.002)	(0.002)	(0.018)	(0.018)
CloseAfter[2D] × Germany	0.0024**	0.0025**	0.0048	0.0047	-0.0051	-0.0000
	(0.001)	(0.001)	(0.004)	(0.003)	(0.029)	(0.029)
CloseAfter[2D] × 0809	0.0198***	0.0199***	0.0054	0.0088**	-0.1560***	-0.1560***
	(0.001)	(0.001)	(0.004)	(0.004)	(0.032)	(0.032)
CloseAfter[2D] × 0809 × Germany	-0.0192***	-0.0191***	0.0551***	0.0515***	-0.0233	-0.0258
	(0.003)	(0.003)	(0.008)	(0.008)	(0.055)	(0.055)
Observations	208,331	208,331	208,331	208,331	208,331	208,331
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Month FE	No	Yes	No	Yes	No	Yes
Firm Controls	No	Yes	No	Yes	No	Yes
Adjusted R^2	0.00845	0.0102	0.9770	0.9880	0.9070	0.9070

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.
Note: This table reports the simple triple-differences (DDD) estimation results. The sample comprises the three 60-day windows around January 1, 2008, January 1, 2009, and January 1, 2010. The dependent variables are Daily Return, Share Price (ln), and Trading Volume (ln). CloseBefore[2D]is an indicator for the last two trading days of a calendar year. Analogously, CloseAfter[2D] identifies the first two trading days of the subsequent calendar year. Germany is an indicator for the German stock market. 0809 is an indicator variable for the 60-day window around the 2009 deadline. Heteroskedasticity-robust standard errors are clustered at the firm level. Detailed variable definitions are provided in Table A1.

Table C.3: Extended Triple-Differences Results

VARIABLES	(1) Daily Return	(2) Daily Return	(3) Share Price (ln)	(4) Share Price (ln)	(5) Trading Volume (ln)	(6) Trading Volume (ln)
CloseBefore[5D]	0.0047***	0.0039***	-0.0156***	-0.0094***	-0.3820***	-0.3570***
	(0.001)	(0.001)	(0.002)	(0.002)	(0.023)	(0.023)
CloseBefore[5D] × Germany	-0.0015*	-0.0015**	0.0122***	0.0158***	0.1850***	0.1860***
	(0.001)	(0.001)	(0.004)	(0.003)	(0.033)	(0.033)
CloseBefore[5D] × 0809	-0.0069***	-0.0068***	0.0024	0.0033	0.0771***	0.0764***
	(0.001)	(0.001)	(0.005)	(0.005)	(0.028)	(0.028)
CloseBefore[5D] × 0809 × Germany	0.0195***	0.0196***	0.0143	-0.0003	0.5410***	0.5370***
	(0.002)	(0.002)	(0.009)	(0.009)	(0.048)	(0.048)
CloseBefore[2D]	0.0022***	0.0022***	0.0123***	0.0114***	-0.4950***	-0.4950***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.020)	(0.020)
CloseBefore[2D] × Germany	-0.0022*	-0.0022**	-0.0027	-0.0035	0.4210***	0.4200***
	(0.001)	(0.001)	(0.004)	(0.003)	(0.038)	(0.038)
CloseBefore[2D] × 0809	0.0086***	0.0086***	0.0044*	0.0055**	0.0022	0.0021
	(0.001)	(0.001)	(0.003)	(0.002)	(0.032)	(0.032)
CloseBefore[2D] × 0809 × Germany	0.0087***	0.0087***	0.0533***	0.0515***	0.2130***	0.2140***
	(0.003)	(0.003)	(0.007)	(0.006)	(0.055)	(0.056)
CloseAfter[2D]	0.0068***	0.0068***	0.0118***	0.0109***	-0.2130***	-0.2140***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.020)	(0.020)
CloseAfter[2D] × Germany	0.0001	0.0001	-0.0091***	-0.0089***	0.0675**	0.0682**
	(0.001)	(0.001)	(0.003)	(0.003)	(0.034)	(0.034)
CloseAfter[2D] × 0809	0.0117***	0.0116***	-0.0370***	-0.0324***	-0.2310***	-0.2300***
	(0.002)	(0.002)	(0.003)	(0.003)	(0.037)	(0.037)
CloseAfter[2D] × 0809 × Germany	-0.0058*	-0.0058*	0.0433***	0.0321***	0.2260***	0.2230***
	(0.003)	(0.003)	(0.007)	(0.007)	(0.063)	(0.063)
CloseAfter[5D]	-0.0017***	0.0011	-0.0059***	-0.0204	0.0172	-0.0327
	(0.001)	(0.002)	(0.002)	(0.025)	(0.018)	(0.054)
CloseAfter[5D] × Germany	0.0015*	0.0017*	0.0162***	0.0166***	-0.0541*	-0.0512
	(0.001)	(0.001)	(0.005)	(0.004)	(0.031)	(0.032)
CloseAfter[5D] × 0809	0.0078***	0.0079***	0.0707***	0.0702***	-0.0049	-0.0057
	(0.001)	(0.001)	(0.006)	(0.006)	(0.034)	(0.034)
CloseAfter[5D] × 0809 × Germany	-0.0117***	-0.0117***	0.0089	0.0146	-0.3820***	-0.3810***
	(0.002)	(0.002)	(0.012)	(0.011)	(0.055)	(0.055)
Observations	208,331	208,331	208,331	208,331	208,331	208,331
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Month FE	No	Yes	No	Yes	No	Yes
Firm Controls	No	Yes	No	Yes	No	Yes
Adjusted R^2	0.0102	0.0118	0.9770	0.9890	0.9080	0.9080

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.
Note: This table presents the extended triple-differences (DDD) estimation results. The sample comprises the three 60-day windows around January 1, 2008, January 1, 2009, and January 1, 2010. The dependent variables are Daily Return, Share Price (ln), and Trading Volume (ln). CloseBefore[2D] and CloseBefore[5D] are indicator for the last two or last five trading days of a calendar year, respectively. Analogously, CloseAfter[2D] and CloseAfter[5D] identify the first two or first five trading days of the subsequent calendar year. Germany is an indicator for the German stock market. 0809 is an indicator for the 60-day window around the 2009 deadline. Heteroskedasticity-robust standard errors are clustered at the firm level. Detailed variable definitions are provided in Table A1.

Table C.4: Volume per Trade – Simple and Extended Model

VARIABLES	(1) Volume per Trade (ln)	(2) Volume per Trade (ln)	(3) Volume per Trade (ln)	(4) Volume per Trade (ln)
CloseBefore[5D]			-0.0674***	-0.0674***
			(0.011)	(0.011)
CloseBefore[5D] × Germany			0.0312*	0.0313*
			(0.018)	(0.018)
CloseBefore[2D]	-0.119***	-0.120***	-0.0579***	-0.0586***
	(0.011)	(0.011)	(0.011)	(0.011)
CloseBefore[2D] × Germany	-0.0412**	-0.0402**	-0.0686***	-0.0675***
	(0.019)	(0.019)	(0.018)	(0.018)
CloseAfter[2D]	-0.0492***	-0.0490***	0.00772	0.00824
	(0.009)	(0.009)	(0.011)	(0.011)
CloseAfter[2D] × Germany	-0.0296*	-0.0291*	-0.0384**	-0.0383**
	(0.015)	(0.015)	(0.018)	(0.017)
CloseAfter[5D]			-0.0634***	-0.0637***
			(0.008)	(0.008)
CloseAfter[5D] × Germany			0.0127	0.0130
			(0.017)	(0.017)
Observations	24,127	24,127	24,127	24,127
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Firm Controls	No	Yes	No	Yes
Adjusted R^2	0.9300	0.9380	0.9300	0.9380

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.
Note: This table presents the difference-in-differences (DiD) estimation results for the relationship between trading behavior and the event windows around the year-end (January 1, 2009). The sample comprises the 60-day windows around January 1, 2009. The dependent variable is Volume per Trade (ln). CloseBefore[2D] and CloseBefore[5D] are indicator for the last two or last five trading days of a calendar year, respectively. Analogously, CloseAfter[2D] and CloseAfter[5D] identify the first two or first five trading days of the subsequent calendar year.Germany is an indicator for the German stock market. Heteroskedasticity-robust standard errors are clustered at the firm level. Detailed variable definitions are provided in Table A1.

Table C.5: DiD Results (Two Trading Days, Excluding Holidays)

VARIABLES	(1) Daily Return	(2) Daily Return	(3) Share Price (ln)	(4) Share Price (ln)	(5) Trading Volume (ln)	(6) Trading Volume (ln)
CloseBefore[2D]	0.0110***	0.0103***	0.0011	0.0067	-0.670***	-0.668***
	(0.001)	(0.001)	(0.005)	(0.004)	(0.032)	(0.031)
CloseBefore[2D] × Germany	0.0203***	0.0203***	0.0682***	0.0693***	1.193***	1.193***
	(0.003)	(0.003)	(0.008)	(0.008)	(0.052)	(0.052)
CloseAfter[2D]	0.0250***	0.0288***	0.0454***	0.0313	-0.441***	-0.399***
	(0.001)	(0.004)	(0.005)	(0.049)	(0.029)	(0.104)
CloseAfter[2D] × Germany	-0.0180***	-0.0182***	0.0527***	0.0507***	-0.194***	-0.183***
	(0.003)	(0.003)	(0.009)	(0.009)	(0.053)	(0.053)
Observations	65,635	65,635	65,635	65,635	65,635	65,635
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Month FE	No	Yes	No	Yes	No	Yes
Firm Controls	No	Yes	No	Yes	No	Yes
Adjusted R^2	0.0309	0.0319	0.9960	0.9960	0.9220	0.9220

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.
Note: This table presents the difference-in-differences (DiD) estimation results for a two-day window around the deadline (January 1, 2009), excluding December 24 and December 31 (non-trading days in Germany). The sample comprises the 60-day windows around January 1, 2009. The dependent variables are Daily Return, Share Price (ln), and Trading Volume(ln). CloseBefore[2D]is an indicator for the last two trading days of a calendar year. Analogously, CloseAfter[2D] identifies the first two trading days of the subsequent calendar year. Germany is an indicator variable for the German stock market. Heteroskedasticity-robust standard errors are clustered at the firm level. Detailed variable definitions are provided in Table A1.

Table C.6: DiD Results (Two and Five Trading Days, Excluding Holidays)

VARIABLES	(1) Daily Return	(2) Daily Return	(3) Share Price (ln)	(4) Share Price (ln)	(5) Trading Volume (ln)	(6) Trading Volume (ln)
CloseBefore[5D]	-0.0035***	-0.0041***	-0.0128**	-0.0067	0.0604**	0.0785***
	(0.001)	(0.001)	(0.005)	(0.004)	(0.026)	(0.025)
CloseBefore[5D] × Germany	0.0194***	0.0194***	0.0165**	0.0179**	0.372***	0.372***
	(0.002)	(0.002)	(0.008)	(0.008)	(0.042)	(0.041)
CloseBefore[2D]	0.0141***	0.0141***	0.0125***	0.0125***	-0.724***	-0.725***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.030)	(0.030)
CloseBefore[2D] × Germany	0.0033	0.0033	0.0535***	0.0535***	0.869***	0.869***
	(0.003)	(0.003)	(0.005)	(0.005)	(0.049)	(0.049)
CloseAfter[2D]	0.0176***	0.0202***	-0.0216***	-0.0213	-0.562***	-0.483***
	(0.002)	(0.004)	(0.006)	(0.049)	(0.034)	(0.105)
CloseAfter[2D] × Germany	-0.0050	-0.0052*	0.0186*	0.0160	-0.0599	-0.0491
	(0.003)	(0.003)	(0.011)	(0.011)	(0.064)	(0.065)
CloseAfter[5D]	0.0070***	0.0092***	0.0657***	0.0633***	0.128***	0.119***
	(0.001)	(0.001)	(0.005)	(0.004)	(0.027)	(0.027)
CloseAfter[5D] × Germany	-0.0108***	-0.0107***	0.0360***	0.0368***	-0.0890*	-0.0890*
	(0.002)	(0.002)	(0.008)	(0.008)	(0.046)	(0.046)
Observations	65,635	65,635	65,635	65,635	65,635	65,635
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Month FE	No	Yes	No	Yes	No	Yes
Firm Controls	No	Yes	No	Yes	No	Yes
Adjusted R^2	0.0330	0.0342	0.9960	0.9960	0.9220	0.9220

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.
Note: This table presents the difference-in-differences (DiD) estimation results for a two-day window around the deadline (January 1, 2009), excluding December 24 and December 31 (non-trading days in Germany). The sample comprises the 60-day windows around January 1, 2009. The dependent variables are Daily Return, Share Price (ln), and Trading Volume (ln). CloseBefore[2D] and CloseBefore[5D] are indicator for the last two or last five trading days of a calendar year, respectively. Analogously, CloseAfter[2D] and CloseAfter[5D] identify the first two or first five trading days of the subsequent calendar year. Germany is an indicator for the German stock market. Heteroskedasticity-robust standard errors are clustered at the firm level. Detailed variable definitions are provided in Table A1.

Table C.7: Media and Deadline Effects without Controls

VARIABLES	(1) Daily Return	(2) Daily Return	(3) Daily Return	(4) Trading Volume (ln)	(5) Trading Volume (ln)	(6) Trading Volume (ln)
Weekly Articles	-0.0001***	-0.0002***	-0.0002***	0.0057***	0.0119***	0.0118***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)
Weekly Articles × Germany	0.0001***	0.0002***	0.0002***	0.0143***	0.0097***	0.0098***
	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)
Weekly Articles × December		0.0003***	0.0003***		-0.0154***	-0.0086***
		(0.000)	(0.000)		(0.001)	(0.001)
Weekly Articles × Germany × December		0.0000	-0.0002***		0.0111***	-0.0003
		(0.000)	(0.000)		(0.001)	(0.001)
CloseBefore[5D]			-0.0039***			-0.2740***
			(0.001)			(0.027)
CloseBefore[5D] × Germany			0.0197***			0.8480***
			(0.002)			(0.043)
CloseBefore[2D]			0.0078***			-0.5660***
			(0.001)			(0.031)
CloseBefore[2D] × Germany			0.0078**			0.4360***
			(0.003)			(0.051)
CloseAfter[2D]			0.0183***			-0.4470***
			(0.002)			(0.029)
CloseAfter[2D] × Germany			-0.0054*			0.3070***
			(0.003)			(0.055)
CloseAfter[5D]			0.0069***			0.1050***
			(0.001)			(0.027)
CloseAfter[5D] × Germany			-0.0097***			-0.1710***
			(0.002)			(0.045)
Observations	133,419	133,419	133,419	133,419	133,419	133,419
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Month FE	No	No	No	No	No	No
Firm Controls	No	No	No	No	No	No
Adjusted R^2	0.0202	0.0248	0.0348	0.9160	0.9160	0.9180

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Note: This table presents the difference-in-differences (DiD) estimation results without controls based on newspaper coverage in December preceding the reform deadline (January 1, 2009). The sample comprises the 120-day window around the deadline (January 1, 2009). The dependent variables are Daily Return and Trading Volume (ln). CloseBefore[2D] and CloseBefore[5D] are indicators for the last two or five trading days of a calendar year. Analogously, CloseAfter[2D] and CloseAfter[5D] identify the first two or five trading days of the subsequent calendar year. Germany is an indicator for the German stock market. December is an indicator for the last four weeks of a calendar year. Heteroscedasticity-robust standard errors are clustered by stock level. Variable definitions are provided in Table A1.

Table C.8: Media and Deadline Effects - Triple Differences

VARIABLES	(1) Daily Return	(2) Daily Return	(3) Daily Return	(4) Daily Return	(5) Trading Volume (ln)	(6) Trading Volume (ln)	(7) Trading Volume (ln)	(8) Trading Volume (ln)
Weekly Articles	0.0001***	0.0001***	0.0001***	0.0001***	-0.0014***	-0.0014***	-0.0014***	-0.0014***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Weekly Articles × Germany	0.0000***	0.0000***	0.0000**	0.0000**	0.0018***	0.0018***	0.0019***	0.0019***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
Weekly Articles × 0809	-0.0001***	-0.0001***	-0.0001***	-0.0001***	0.0043***	0.0043***	0.0043***	0.0043***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Weekly Articles × Germany × 0809	0.0001***	0.0001***	0.0000***	0.0000***	0.0065***	0.0064***	0.0049***	0.0049***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
CloseBefore[5D] × Germany			0.0027***	0.0027***			-0.1390***	-0.1390***
			(0.001)	(0.001)			(0.024)	(0.024)
CloseBefore[5D] × 0809 × Germany			0.0148***	0.0148***			0.6240***	0.6220***
			(0.002)	(0.002)			(0.040)	(0.040)
CloseBefore[2D] × Germany			-0.0020*	-0.0020*			-0.0831***	-0.0835***
			(0.001)	(0.001)			(0.032)	(0.032)
CloseBefore[2D] × 0809 × Germany			0.0178***	0.0178***			0.0123	0.0129
			(0.003)	(0.003)			(0.047)	(0.047)
CloseAfter[2D] × Germany			0.0072***	0.0072***			-0.1270***	-0.1270***
			(0.001)	(0.001)			(0.028)	(0.028)
CloseAfter[2D] × 0809 × Germany			0.0059**	0.0059**			-0.0228	-0.0240
			(0.003)	(0.003)			(0.051)	(0.051)
CloseAfter[5D] × Germany			0.0005	0.0005			-0.0298	-0.0297
			(0.001)	(0.001)			(0.024)	(0.024)
CloseAfter[5D] × 0809 × Germany			-0.0031*	-0.0031*			-0.1480***	-0.1470***
			(0.002)	(0.002)			(0.044)	(0.044)
Observations	411,869	411,869	411,869	411,869	411,869	411,869	411,869	411,869
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Month FE	No	Yes	No	Yes	No	Yes	No	Yes
Firm Controls	No	Yes	No	Yes	No	Yes	No	Yes
Adjusted R^2	0.0024	0.0026	0.0042	0.0045	0.9070	0.9070	0.9070	0.9070

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Note: This table presents the extended triple-differences (DDD) estimation results for the media effect. The sample comprises the three 60-day windows around January 1, 2008, January 1, 2009, and January 1, 2010. The dependent variables are Daily Return and Trading Volume (ln). CloseBefore[2D] and CloseBefore[5D] are indicators for the last two or five trading days of a calendar year. Analogously, CloseAfter[2D] and CloseAfter[5D] identify the first two or five trading days of the subsequent calendar year. Germany is an indicator for the German stock market. Heteroscedasticity-robust standard errors are clustered by stock level. Variable definitions are provided in Table A1.

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