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# Do Investors Care About Tax Disclosure?*

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**Abstract**

We assess the investor reaction to a potential introduction of public country-by-country reporting (CbCR) into the European Capital Requirements Directive IV. Estimating cumulative abnormal returns with the help of a multivariate regression model, we find weak significant evidence around our event date (February 20th, 2013) that investors perceive the introduction of CbCR as beneficial. In additional tests, we assess investor perceptions relative to different control groups (domestic institutions and non-EU institutions) and in the cross-section (splitting across size, systemically relevant, pre-event level of GAAP ETR and pre-event level of geographic disclosure). The only significant outcome is a negative reaction for large international EU institutions.

JEL classification: H25, H26, G21, G28

Key words: Country-by-country reporting, CbCR, financial institutions, investor reactions, event study, multivariate regression model

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# 1 Introduction

We assess whether investors perceive a potential introduction of *public* country-by-country reporting (CbCR) in the European Capital Requirements Directive (CRD) IV (EU 2013/36, European Parliament (2013))[1] as beneficial or harmful.

The main objective of the CRD IV is "to strengthen the resilience of the EU banking sector [and] to absorb economic shocks while ensuring that banks continue to finance economic activity and growth" (European Commission (2013)). It came into law on June 26$^{\text{th}}$, 2013, together with the Capital Requirements Regulation (CRR)[2] and establishes rules for the entry and the supervision of banks or suggests sanctions if the quantitative requirements of the CRR are not met (Deutsche Bundesbank (2020)). In Article 89, CRD IV outlines the disclosure requirements for the public CbCR. Beginning on January 1$^{\text{st}}$, 2015, financial institutions falling under the CRD IV have to disclose items such as subsidiaries' names and their purpose, their turnover, number of employees, profit before taxes and current tax expense (European Parliament (2013)). In a first draft, the introduction of public CbCR was motivated by the objective "to tackle tax avoidance" (Karas (2012)).

As Chen (2017) notes, predicting investor behavior is equal to predicting firm behavior. If investors consider the public CbCR as harmful and costly, firms might undertake actions to circumvent these rules. Investors' positive or negative assessment of CbCR potentially depends on the perceived net benefits or costs. Hanlon (2018) provides an evaluation of the benefits and costs of the OECD's CbCR proposal in Base Erosion and Profit Shifting (BEPS) Action Plan 13[3]. Potential benefits of CbCR might be an increased transparency of geographic activities on the part of the companies, resulting in a better understanding of the companies' business units and turnover and more efficient allocation strategies (Hanlon (2018)). Furthermore, investors benefit from increased transparency as well. With the new information, they might be able to better predict future cash flows (Hanlon (2005)). Additionally, less opaque tax information in the financial statements might contain rent extraction by managers (Desai and Dharmapala (2006), Desai, Dyck, and Zingales (2007)). Managers might use sophisticated financial strategies, e.g., setting up complex organizational structures that lead to less transparent financial statements,

[1] The official title of CRD IV is "Directive 2013/36/EU of the European Parliament and of the Council of 26 June 2013 on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms, amending Directive 2002/87/EC and repealing Directives 2006/48/EC and 2006/49/EC".

[2] The CRR provides guidelines for banks on quantitative requirements like adequate capital ratios or provisioning for sufficient liquidity (Deutsche Bundesbank (2020)). After the CRR becomes effective, it is directly binding for national law in the European Union. The CRD IV has to be introduced into national law before it becomes effective.

[3] The CbCR of the OECD's initiative differs from our setting because it requires the disclosure of CbCR information only to tax authorities and not to the public. However, general inferences should also apply to public CbCR disclosure.

hindering investors in correctly valuing the firm and therefore allowing managers to extract private rents from the company (Desai et al. (2007)). Public CbCR might be a remedy against sophisticated and less transparent tax strategies, preventing private rent extraction by managers and leading to a better alignment of incentives between managers and shareholders/ investors. In contrast, potential costs arise from implementation costs (i.e., creating (efficient) reporting processes), costs emerging from tax disputes (i.e., controversy costs)[4], additional tax costs from settlements of tax disputes and potential reputational costs[5]. As it is not clear upfront whether the costs outweigh the benefits of CbCR, it is an empirical question how investors evaluate public CbCR.

To assess whether investors consider the introduction of public CbCR as beneficial or harmful, we first use a multivariate regression model, developed by Schipper and Thompson (1983), to assess whether cumulative abnormal returns (CAR) are significantly different from zero around our event date. Our event date marks an official press release on February 20$^{\text{th}}$, 2013. Herein, Othmar Karas, rapporteur of the CRD IV to the European Parliament, indicates that the inclusion of public CbCR should be discussed at the next trilogue meeting and that the Trilogue should come to a conclusion. Even though CbCR has already been included in a first draft in May 2012, anecdotal evidence[6] suggests that this press release came at a surprise to all legislative observers. Probably due to data privacy issues, they assumed that public CbCR would never be included in the final draft of CRD IV. Using different market returns to capture normal performance, we find a significant positive reaction to our event when using the MSCI World Bank index. As investors likely evaluate the outcome of the CRD IV differently for different groups of financial institutions, we slightly modify the multivariate regression framework, interacting our event date with different subgroups. In additional tests, we examine whether investors consider the costs and benefits of public CbCR differently for different cross-sections. Large institutions[7] are, e.g., more visible to the public and an involvement in aggressive tax strategies might be stronger penalized in ethical terms (Zimmerman (1983)). This might trigger a negative reaction of investors compared to smaller institutions. In line with this argument, we find a significant negative reaction for large institutions at the event date for all market returns. Comparing

[4] The public CbCR might cause these disputes with an even higher probability. Tax authorities from different countries might have different opinions on what the correct amount of taxes is that institutions should pay in the respective country. Anecdotal evidence suggests that firms might pay a higher mark-up on their transfer prices to appease tax authorities and decrease dispute costs.

[5] Although the tax strategy is legal, firms might fear public shaming because of the low amount of tax expense (Hanlon and Slemrod (2009), Gallemore, Maydew, and Thornock (2014), Dyreng, Hoopes, and Wilde (2016))

[6] We gathered additional information of the legislative process from a PwC manager who observed the development of the CRD IV.

[7] In the following, we use the word "institution" interchangeably for "financial institution". Financial institutions comprise credit institutions (among them, banks) as well as investment firms. For a detailed assessment of our sample, refer to Table 3.

systemically relevant institutions against large institutions, we find that investors perceive the introduction of public CbCR as costly, indicated by a negative market reaction. We do not find a significant reaction for international EU institutions[8] compared to domestic EU institutions, to international EU institutions in general and to international EU institutions with different degrees of pre-event GAAP ETRs and of pre-event geographic disclosure.

With this study, we contribute to the general discussion of public tax disclosure. Two preliminary studies (Overesch and Wolff (2019), Joshi, Outslay, and Persson (2019)) analyze whether European banks actually decrease their tax avoidance[9] behavior after the public CbCR. While Overesch and Wolff (2019) find a significant increase in multinational banks' overall effective tax rates (ETR) compared to a domestic control sample, Joshi et al. (2019) do not find a significant increase in multinational banks' overall tax level. They, however, find some evidence that multinational banks decrease their involvement in profit shifting. Our findings suggest that investors value an increase in transparency, indicated in positive cumulative abnormal returns.

We particularly contribute to the literature, assessing investor reactions to public tax disclosure. Our study provides evidence that investors generally consider public CbCR for financial institutions as beneficial. For large, international EU institutions, however, the costs of public CbCR seem to outweigh the benefits. Chen (2017) analyzes how investors perceive the introduction of Australian public tax disclosure by the Australian Tax Office (ATO), publishing data on total income, total taxable income and taxes payable for all firms, operating in Australia. She finds a small, but significant reaction to legislative events that led to the introduction of public tax disclosure, indicating that investors perceive this kind of disclosure as beneficial. Concerning the usefulness of this information (analyzing investor reactions at the day of the publication of the data on the ATO website), Chen (2017) does not find a significant reaction. Hoopes, Robinson, and Slemrod (2018) analyze the same setting as in Chen (2017), investigating how consumers, investors and firms themself react to the publication of the public tax disclosure. Concerning investor reactions, they find a significant and negative reaction on the publication date to those firms, not paying sufficient taxes. Similar to our study, Dutt, Ludwig, Nicolay, Vay, and Voget (2019) analyze investor reactions to a potential introduction of public CbCR in the course of CRD IV. They do not find a significant investor reaction around their event date and for different sample splits. We are different from the studies of Chen (2017) and Hoopes et al. (2018) as their setting only provides insights into how investors react to the publication of Australian tax data while the CbCR surrounding the CRD IV gives investors the opportunity to deduce companies'

[8] Naturally, only those EU institutions fall under the CRD IV that have at least one subsidiary abroad.

[9] Tax accounting research generally defines tax avoidance very broadly as paying a low amount of taxes **Dyreng.2008**

global tax strategies and therefore provides more information to them. Although our study is similar in terms of research question and research setting to Dutt et al. (2019), we differ in the event date, in the composition of the treatment group (credit institutions *and* investment firms), in our methodological approach, in our underlying sample and database, included market returns and sample splits. For that matter, we believe that our insights complement the findings in Dutt et al. (2019) and provide additional inferences with respect to, e.g., the prior degree of available geographic segment information.

Our paper proceeds as follows. In section 2, we provide an overview on the legislative background and related literature. Section 3 outlines our methodological approach. Section 4 provides our results. In section 5, we conduct our robustness tests and section 6 concludes our paper.

## 2 Background and related literature

The tax minimization methods of multinational firms became a key focus in the public at the beginning of this decade. To contain this behavior, the OECD introduced their BEPS Action Plans, among them Action Plan 13. This proposal aims at making international taxation flows more comprehensible to tax administrations with the help of private CbCR. Like private CbCR, public tax disclosure is also aiming at decreasing tax avoidance, resulting from BEPS (e.g., Karas (2012)). The first country to actually introduce public tax disclosure for corporations was Australia with the Tax Laws Amendment Bill in 2013. The released information comprises of total income, taxable income and taxes payable.

While the introduction of public tax data in Australia is tailored to show the discrepancy between a firm's Australian total income, Australian taxable income and Australian taxes payable, the introduction of the public CbCR of European financial institutions goes a step further. Article 89 of the CRD IV (EU 2013/36) regulates that financial institutions should publicly report on a country-by-country basis their subsidiaries' name and purpose, furthermore their subsidiaries' turnovers, number of employees, profit before taxes, tax on that profit and public aids received. Although CbCR was already included in the report on the proposal for the CRD IV on May 30$^{\text{th}}$, 2012 (Karas (2012)), legislative observers[10] viewed the renewed mentioning of CbCR in the press release on February 20$^{\text{th}}$, 2013, as rather surprising. A final discussion of and agreement to CbCR took place in the European Council on March 5$^{\text{th}}$, 2013. The directive was signed into law on June 26$^{\text{th}}$, 2013, and Article 89 became effective for all institutions, falling under CRD

[10] A PwC correspondent, e.g., admits that no one believed that CbCR would become included in the final draft of the CRD IV. Its introduction therefore came as a surprise.

IV, for the fiscal year 2015[11]. Figure 1 shows cornerstones of the legislative process.

[Figure 1 about here.]

How investors react to the release of public tax data strongly depends on their assumptions about future benefits and costs to the bank. Hanlon (2018) provides an overview of potential benefits and costs when private CbCR (i.e., the exchange of data to tax authorities) would be introduced. A possible benefit of public CbCR is increased financial transparency. Investors receive more information on the distribution of banks' international activities, being able to better predict future cash flows (Hanlon (2005)). In addition, while managers might use complex organizational structures to retrieve private rents (Desai and Dharmapala (2006), Desai et al. (2007)), investors gain better insights into these structures and can better evaluate the performance of the manager. In contrast to that, investors might fear reputation costs, resulting from bad media coverage (e.g., Dyreng et al. (2016)). Additionally, the new information might attract public scrutiny by tax authorities, leading to additional tax charges or tax disputes (e.g., Bozanic, Hoopes, Thornock, and Williams (2017)).

In the literature, some studies have emerged that assess how investors perceive the introduction of public tax data. In the Australian setting, Chen (2017) is the first to assess whether investors perceive the introduction of the Australian public tax disclosure as beneficial or not. She uses key dates in the legislative process until the actual implementation of the law and measures investor perceptions as the abnormal stock reactions to these events. Finding positive reactions to these event dates, Chen (2017) concludes that investors value the perceived benefits of public tax disclosure higher than the associated costs. In a second step, she evaluates whether investors actually incorporate the newly available information when valuing the firm. However, Chen (2017) does not find a significant reaction to the first release of the public tax disclosure and concludes that the information does not bear information content for investors, hence, being irrelevant. Hoopes et al. (2018) assess the implementation of Australian tax data from three different angles. They investigate the response of firms, consumers and investors to the introduction. Gaining insights into aggregated tax return data from the Australian Tax Office and assessing firm behavior before and after the introduction, Hoopes et al. (2018) find that firms tend to bulge around the exclusion threshold of 200 AUD million. Analyzing changes in tax payments, they find that public firms' tax payments seem to decrease while that of private firms seems to increase. Measuring consumer reaction with the help of the platforms YouGov and TurkPrime, they find no significant relation between consumer sentiment and the release

[11] The legislative proceedings that led to the CRD IV can be found under https://oeil.secure.europarl.europa.eu/oeil/popups/ficheprocedure.do?lang=en&reference=2011/0203(COD). (last accessed 2020-02-04)

of the public tax data when using the former platform, but a significantly negative reaction for the latter. To measure investor perceptions, they use three-day buy and hold returns around the disclosure date. They regress those on a binary variable which indicates whether the firms paid no taxes. Opposed to Chen (2017), Hoopes et al. (2018) find a strong negative reaction of investors to firms that paid no taxes, indicating that investors incorporate future net costs of this disclosure.

A similar study to ours in terms of research question and setting is Dutt et al. (2019). They assess the reaction of investors to an early decision to include country-by-country reporting into the EuropeanCRD IV. Their theoretical line of reasoning is similar to Chen (2017). They argue that investors might perceive the introduction of CbCR as beneficial, when increasing transparency, or costly when causing additional costs to the firm. Identifying EU headquartered banks via BankFocus and merging stock data from Thomson Reuters Datastream, they assess how investors react after a trilogue meeting on February 27$^{th}$, 2013. They estimate abnormal returns with different market indices/ portfolios[12], but do not find a significant reaction of investors to a potential introduction of CbCR. For additional sample splits, e.g., banks in tax havens, institutional ownership density and B2C associations, they also do not find a significant response. Considering different event dates like the signing into law of the CRD IV with Article 89 on June 26$^{th}$, 2013, or applying different event windows, they still do not find a significant reaction.

We differ from the approach in Dutt et al. (2019) in various ways. Before all, we use an alternative event date. While Dutt et al. (2019) use the decision from an EU trilogue meeting on February 27$^{th}$, 2013, we rely on a press article, published on February 20$^{th}$, 2013 by the rapporteurs of the European Parliament on the CRD IV. It outlines that members (of the EU Parliament, Council, Committee) involved in the decision-making process should come to a conclusion on the introduction of CbCR in CRD IV in the next negotiation meeting (presumably February 27$^{th}$, 2013)[13]. If we assume efficient capital markets, investors would directly incorporate this information into their decision-making process to form expectations about the perceived costs and benefits of public CbCR. Next, we use another database and methodology to receive our baseline sample. While Dutt et al. (2019) rely on BankFocus and Thomson Reuters Datastream, we use Compustat Global Daily Securities, merge that to Thomson Reuters Fundamentals and

[12] Dutt et al. (2019) use three different market indices, the S&P Global 1200, MSCI World Banks and a self-constructed portfolio of non-EU multinational banks.

[13] Until recently, the press article could be found under https://www.europarl.europa.eu/news/en/press-room/20130219IPR0592. The link, however, ceased to exist. The original version of the text can still be found under https://sven-giegold.de/verhandlungen-zu-crd-iv-europaisches-parlament-verlangt-mehr-engagement-von-mitgliedsstaaten/. We also include the text of the press release in the appendix of this paper.

Thomson Reuters Geographic Segments to allow for cross-sectional splits and determine the degree of internationality. This allows us to assess investor reactions to all institutions (i.e., credit institutions and investment firms) covered by the CRD IV and for a broader and more general evaluation of CbCR. Furthermore, we apply a modified version of the multivariate regression model of Schipper and Thompson (1983) and Frischmann, Shevlin, and Wilson (2008)[14]. With the help of this approach, we are able to directly interact cross-sectional splits (i.e., binary variables) with the event date. We are thus able to directly test whether investors perceive the introduction of the CRD IV differently for different cross-sectional groups. Additionally, we use a wide range of different market indices (i.e., the Stoxx Europe 600 and 50, Euro Stoxx 600 and 50, the MSCI World and the MSCI World Banks) to control for normal performance. We use rather general indices as we also include investment firms in the sample and applying bank-focused indices might distort inferences. Before last, we use different control groups. We compare investor reactions of multinational EU institutions to EU domestic institutions and non-EU international institutions. Lastly, we apply different sample splits, e.g., the split between large and small institutions, between systemically relevant institutions and large institutions, between institutions with a high and low degree of pre-event disclosure as well as between banks and other financial institutions. With these additional sample splits, we complement the findings in Dutt et al. (2019).

The literature above provides mixed evidence on how investors value public tax data. Based on the studies above, we do not propose a direction on whether investors value the perceived benefits (e.g., increased financial transparency) of public CbCR higher than the perceived costs (e.g., reputational concerns, increased scrutiny by tax authorities). We therefore state our hypothesis in the null:

*Hypothesis 1: Investors do not react to the possible introduction of public CbCR for international institutions.*

The first draft of CRD IV explicitly stated that CbCR should conquer tax avoidance behavior and if an institution does not comply with these rules, that institution should not be authorized (Karas (2012)). Although this passage was not accepted in the final draft, the intention of why public CbCR has been introduced becomes evident. Only recently, two preliminary studies (Joshi et al. (2019), Overesch and Wolff (2019)) have emerged that assess this notion. They analyze whether the degree of international EU banks' tax avoidance decreases. Implicitly, they

[14] In their online appendix, Dutt et al. (2019) use this approach as well, however, using different market indices compared to us. Their main analyses use cumulative average abnormal returns which are tested against the null.

assume that these banks fear public attention and potential reputation costs from, e.g., negative media coverage. Overesch and Wolff (2019) find that international EU banks falling under the public CbCR requirement of CRD increase their tax expense in comparison to domestic EU banks. Opposed to this, Joshi et al. (2019) do not find robust evidence, suggesting that EU multinational banks do not decrease tax-motivated income shifting. In our analyses, we also test whether investor reactions differ for different levels of GAAP ETR.

As public CbCR provides a shock to financial institutions' financial reporting, Brown, Jorgensen, and Pope (2019) assess whether banks, affected by Article 89, adjust their geographic segment reporting, pursuant to IFRS 8 accordingly. They argue that due to its detailedness, CbCR might influence the detailedness of geographic segments. In particular, they wonder whether multinational banks that are operating in tax havens, choose a higher aggregation level in their geographic segment reporting than those who are not active in tax havens. Brown et al. (2019) do not find a significant association between the introduction of CbCR and a change in EU banks' geographic segment reporting behavior in terms of quantity (e.g., number of reported line items, number of reported segments). They, however, find that tax-haven active banks try to obfuscate this fact, by choosing higher aggregation levels in their geographic segment reporting. In light of almost efficient capital markets, we assume that investors should only react to new information that is not priced yet. However, as EU institutions, and in particular EU banks, have to comply with IFRS rules, investors might already deduce tax-sensitive information from institutions' geographic segment reporting under IFRS 8.

# 3 Methodology

To construct our sample, we use a merged dataset of data from Compustat Global Security Daily, Thomson Reuters Datastream, Thomson Reuters Worldscope Fundamental Annual and Thomson Reuters Geographic Segments between January 2011 and December 2013. Compustat Global Security Daily provides us with the price information of institutions and non-financial firms. We use Thomson Reuters Datastream to obtain relevant market indices such as the Euro Stoxx 600 and Euro Stoxx 50, Stoxx Europe 600 and Stoxx Europe 50, MSCI World and MSCI World Banks. Thomson Reuters Fundamental Annual provides us with data on financial statement items while Thomson Reuters Geographic Segments provides us with data on firms' global operations. We need both databases to create our sample splits.

We describe our sample selection process in Table 1. Our initial sample comprises of all international EU financial institutions with non-missing returns in our main estimation period (January 1$^{st}$, 2012 to February 27$^{th}$, 2013). We then delete exchanges from our sample as they are not

subject to the CRD IV. Similarly, we exclude real estate firms from our sample. We also drop those observations for which total assets and GAAP ETR are missing. Our main sample then amounts to 27,036 observations.

[Table 1 about here.]

Our event date is February 20$^{\text{th}}$, 2013. On that date, Othmar Karas, member of the EU parliament and rapporteur[15] on CRD IV, together with fellow members of the EU parliament releases a press statement on the trilogue meeting which took place a day before. They regret that no general agreement was reached concerning specific points, vital to the CRD IV as, e.g., the introduction of public CbCR. The statements of rapporteurs are an essential source of information to the EU Parliament, the information contained should therefore be valuable to and accessible to investors as well. As our event date captures the first mentioning of introducing public CbCR from a relevant political source, we believe that this date provides the best indicator for surprise. To measure abnormal returns, we apply the method used in Schipper and Thompson (1983) and Frischmann et al. (2008). We regress individual returns on a market index and a binary variable, indicating our event period. Similar to the standard event study approach, the market return captures normal performance and the coefficient of the binary variable shows the CARs for our event period. Our general estimation period ranges from January 1$^{\text{st}}$, 2012 to February 27$^{\text{th}}$, 2013. In our robustness tests, we expand the estimation period to December 31$^{\text{st}}$, 2013. To allow for the possibility that information of the meeting was already released on February 19$^{\text{th}}$, 2013, and to allow for adjustment effects, we use a three-day event window, starting February 19$^{\text{th}}$, 2013, and ending February 21$^{\text{st}}$, 2013. In sum, we estimate the following equation:

$$R_{pt} = \alpha_p + \beta_p R_{mt} + \gamma_p D_t + e_{pt}$$

where $R_{pt}$ is the return portfolio[16] of those European[17] institutions that operate internationally. The Article 89 of CRD applies to all institutions that are either credit institutions or are engaged in brokerage activities. An institution is therefore a firm that falls in the Standard Industry

[15] For further information on the purpose of a rapporteur, see http://www.europarl.europa.eu/sides/getDoc.do?type=IM-PRESS&reference=20060725STO09938&language=EN (last accessed: 2020-03-10).

[16] We retrieve price information from Compustat Global Securities Daily and calculate daily returns according to the following formula:

$$ret = [(prccd/ajexdi) * trfd]/[(L.prccd/L.ajexdi) * L.trfd]$$

[17] An institution is a European institution if Compustat Global's Foreign Incorporation Code corresponds to the list of countries in https://europa.eu/european-union/about-eu/countries_en (last accessed 2020-02-03).

Classification (SIC) code of 6000 to 6230 and of 6700 to 6799[18]. We call an institution "international" when either the variables "international assets" (item7151), "international operations" (item7126) or "international sales" (item7101) in the Thomson Reuters Geographic Segments are non-missing and non-zero. $R_{mt}$ is the respective market return. We use six different market returns (Euro Stoxx 600, Euro Stoxx 50, Stoxx Europe 600, Stoxx Europe 50, MSCI World and MSCI World Banks) to eliminate normal performance at European and global markets. $D_t$ is a binary variable, taking the value of 1 at the event window, described above. The coefficient $\gamma$ can be interpreted as the three-day CAR. We cluster standard errors at the firm level.

As investors might evaluate costs and benefits of the CRD IV differently for certain institutions, we modify the approach above and interact $D_t$ with different firm characteristics. The equation above therefore expands to:

$$R_{pt} = \alpha_p + \beta_p R_{mt} + \gamma_p D_t + \delta_p X_t + \lambda_p D_t \times X_t + e_{pt}$$

where $R_{pt}$, $R_{mt}$ and $D_t$ are as defined above. $X_t$ is a placeholder for the different sample splits. In sum, we perform six sample splits. We assess investors' differential perception towards international and domestic European institutions, towards international European and European institutions, towards small and large international European institutions, towards systemically relevant institutions and large international European institutions, towards institutions with high and low pre-event GAAP ETRs and towards institutions with a high degree and low degree of geographic segment disclosure in the pre-event period.

To test whether investors react differently for small and large institutions, we split the international institution sample at the mean of total assets. In terms of visibility, complexity and reputational concerns, large institutions should be of special interest to investors. Investors might either think that CbCR decreases complexity in tax terms and therefore evaluate CbCR more positively for large institutions. Opposed to that, large institutions are more on the spot by analysts following, the media and politicians. Due to this, investors might react more negatively to a proposed introduction of CbCR as they fear additional costs from increased scrutiny or from reputational damages.

An indication whether the institution is systemically relevant is taken from the website of the European Banking Authority (EBA)[19]. Unfortunately, the data is only available from 2013 onwards.

[18] We use the definitions in the SIC code manual of the United States Department of Labor and that of the SEC to classify institutions in accordance with CRD IV. See https://www.osha.gov/pls/imis/sicsearch.html or https://www.sec.gov/info/edgar/siccodes.htm for further information. Both lists are almost identical, but sometimes one list provides more information on a four-digit SIC code than the other. We therefore use both to classify our institutions. Table 3 provides a description of institutions included in our sample

[19] Data can be retrieved under https://eba.europa.eu/risk-analysis-and-data/global-systemically-important-institutions (last accessed 2020-02-03).

We therefore assume that an institution, systemically relevant in 2013, was already systemically relevant in 2011 and 2012. We compare systemically relevant institutions to the full sample of international European banks and to a subset of large, non-relevant institutions. The latter is presumably a better control group as small institutions depict other features, e.g., different business structures in terms of clients and services, than larger institutions.

To compare tax levels, investors usually rely on the GAAP ETR as it provides a good benchmark. The introduction of public CbCR can lead to an increase in tax transparency as investors are able to better comprehend deviating GAAP ETRs. As our event date took place in February, we rely on the GAAP ETRs in 2011 and 2012 to assess the pre-event level of institutions' tax avoidance. We use a relative assessment of tax avoidance when we include binary variables whether the institution is above or below the average GAAP ETR in the respective year.

A crucial point to whether investors react to a proposed public CbCR is the information investors had on the geographical operations of the institutions before. Investors might react differently for institutions whose disclosure policy before the CRD IV was already sufficient. We employ the approach in Brown et al. (2019) and Akamah, Hope, and Thomas (2018) to assess whether the average aggregate information in an institution's geographic segment report is above or below the mean. According to Akamah et al. (2018), we assign a score of 0 (disclosure at the country-level) to 4 (unspecific disclosure like "Rest of the World") to each geographic segment and average the scores over all geographic segments in 2011 and 2012, separately. As investors presumably form their expectations on past disclosure, we create an indicator variable, taking the value of 1 if geographic disclosure of the institution is higher than the mean and 0 vice versa[20].

# 4 Results

## 4.1 Descriptive statistics

Table 2 provides an overview of the countries included in our sample. Due to missing data, not all European countries are included in our sample. The country with the most observations is Great Britain. In our robustness checks, we exclude Great Britain from our sample to ensure that results are not driven by this country.

[Table 2 about here.]

In Table 3, we depict the observations of our main sample by SIC code. The group with the largest amount of observations are commercial banks, followed by other investors.

[20] Higher values of the average score indicate a lower information environment.

[Table 3 about here.]

Figure 2 shows the evolution of abnormal returns two weeks before and one week after our event. Abnormal returns do not strongly vary before and shortly after our event date. The abnormal returns start to deviate on February 23$^{rd}$, 2013. A key event that took place was the Italian parliamentary election on February 24$^{th}$, 2013. The outcome of the election provided no clear majority and politicians feared that the European crisis might be revived again[21]. This explains the rather negative abnormal returns in that time window. However, as this only comprises a small part of our estimation period, we believe that it does not drive our results in the regressions.

[Figure 2 about here.]

## 4.2 General significance of the event

Table 4 shows our results of estimating our first regression design. Here, we test whether the CARs of international EU institutions are significantly different from zero. Across the six market indices, the event is significant for one (MSCI World Bank) out of the six indices. The coefficients can be interpreted as the CARs in other event studies. While Dutt et al. (2019) find a negative, although not significant reaction to their event date, we provide cautious evidence of a significant and positive investor reaction (0.0041 (i.e., 0.41 %)). In terms of magnitude, our coefficients are similar to Chen (2017) who reports an overall market reaction of 0.34 % in the Australian setting.

[Table 4 about here.]

In Table 5, we provide evidence whether the investors equally react to the press article on all three event days. For each day of the event window, we include a binary variable. We observe that the day of the press release is significant over all market indices and positive as in Table 4. The day after the press release is not significant for all market indices, providing evidence that the investors directly respond to the information. For the day before the press release, we find a significant, negative investor reaction for four out of six market indices. This might possibly express investors' prior concerns about the uncertain outcome of the negotiation meeting.

[Table 5 about here.]

[21] Visit https://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/FlagPost/2013/March/The_2013_Italian_general_election_a_new_source_of_European_instability (last accessed: 2020-03-10) for further information.

### 4.3 Cross-sectional tests

Dutt et al. (2019) argue that an insignificant investor reaction to the event can be due to the cancelling out of opposing investor perceptions. Although we find some evidence that investors react positively to a potential introduction of public CbCR, we are interested in whether investors perceive CbCR differently for certain subgroups of institutions or compared against different control groups.

Table 6 shows the results of comparing international EU institutions with domestic EU institutions. A natural control group for investors in evaluating costs and benefits might be domestic EU institutions. Although domestic EU institutions do not have to comply with CbCR standards, they still have to comply with other regulations of the CRD IV. However, we observe that there is no significant difference in investor perceptions between affected (EU international) and non-affected (EU domestic) institutions.

[Table 6 about here.]

For that matter, we use another control group of non-EU international institutions and compare them to our international EU institutions. Non-EU international institutions might have the advantage over domestic institutions that their business and organizational structure is closer to that of international EU institutions. Table 7 shows the results of this comparison. We observe that there is no incremental difference between international EU and non-EU institutions.

[Table 7 about here.]

To provide further insights, we run a number of cross-sectional tests within our sample of international EU institutions. Investors might evaluate costs and benefits differently for large and small international institutions, respectively. With respect to taxation, Zimmerman (1983) states that as large firms are more visible, they pay a higher political cost in terms of political scrutiny. Large institutions might therefore avoid less taxes to circumvent this political cost. If investors share this belief, then CbCR makes the tax activities of an institution more transparent, causing increased attention by the media and interest of tax authorities (Hanlon (2018)). Table 8 shows the differential effect between large and small institutions. The interaction is significant at the 1 % level and negative, indicating that investors perceive the introduction of CbCR as more costly for large institutions than for small institutions.

[Table 8 about here.]

Since 2013, the EBA publishes a list on their website, identifying certain institutions as systemically relevant. As this list draws more attention to specific institutions, investors might be

particularly concerned with these institutions. We compare international EU systemically institutions with two control groups. First, we use the full sample of international EU institutions, including small institutions. As systemically relevant institutions are presumably the largest institutions in terms of asset size, a comparison against large international EU institutions is more suitable. Table 9 contains our results of comparing systemically relevant institutions to the other international EU institutions. The coefficients are negative and significant, indicating that investors are concerned about the spotlight of those institutions as this situation might trigger additional costs. The incremental effect is smaller in comparison to the one in Table 8. Comparing, however, systemically relevant institutions to large, international EU institutions in Table 10, we observe that the incremental effect is no longer significant, indicating that investors predict higher costs for large institutions in general.

[Table 9 about here.]

[Table 10 about here.]

As banks are already strongly regulated and additional taxes and levies are discussed for them, investors might perceive the public disclosure as an additional cost for banks. We therefore compare investor reactions of international EU banks to the rest of other international EU financial institutions. Table 11 shows that investors do not seem to differentiate between commercial banks and other institutions.

[Table 11 about here.]

A key indicator of tax expense and future taxes is the GAAP effective tax rate (ETR). Investors can benchmark this measure against the industry average or against the applicable statutory tax rate. A potential introduction of CbCR can have two effects. First, the GAAP ETR becomes more transparent to investors, providing information on the tax strategy of the institution. Second, institutions with low GAAP ETRs get into the focus of tax authorities, starting possible disputes about the correct amount of taxes paid. In the former case, investor reaction would be positive due to the increase in transparency. In the latter, investors would predict additional costs and react negatively to CbCR. In Table 12, we estimate whether investors react differently to institutions with a low, pre-event GAAP ETR. In terms of sign, the coefficients would support the hypothesis of increased transparency, yet they are not significant. As Dutt et al. (2019) mention, the insignificance can result from heterogeneous investors, having different opinions on the costs and benefits of CbCR in relation to a low GAAP ETR.

[Table 12 about here.]

Another explanation for the insignificant coefficients in Table 12 can be sufficient prior information on the institutions' international activities. Brown et al. (2019) point out that institutions were already subject to geographic segment reporting under IFRS 8 and disclosure of tax expense under IAS 12 before the introduction of CbCR. The difference between CbCR and the mandated disclosure under IFRS 8 and IAS 12 is that CbCR demands information of, e.g., employees, turnover, taxes on the *country* level, while under IFRS 8 and IAS 12, financial information such as turnover, assets or foreign taxes is usually aggregated on the consolidated level. If investors already have sufficient information on the international activities of the institutions, the additional benefit of CbCR would be low for them, resulting in insignificant coefficients. Table 13 shows the results of whether investors react differently to the potential introduction of CbCR if the information, provided by IFRS 8 and IAS 12, is already sufficient. Although the coefficients on the interaction are not significant, they would support the hypothesis that investors perceive the additional information in CbCR as complementing the information under IFRS 8 and IAS 12.

[Table 13 about here.]

# 5 Robustness tests

## 5.1 Deleting observations from the United Kingdom

In 2006, the government of the United Kingdom (UK) issued the Companies Act 2006, setting revised premises for conducting business in the UK. Section 409 of this act requires that all companies disclose all subsidiaries in their annual report (Dyreng et al. (2016))[22]. For our analysis, this means that investors of UK financial institutions should already have sufficient information on the company's geographic activities from which they might deduce tax consequences. As the UK comprises a large amount of our sample observations (approximately one quarter[23]), our inferences on how investors perceive the introduction of public CbCR might be confounded. We therefore delete all UK financial institutions from the baseline sample of international EU institutions and re-run the main analyses again. Our main inferences stay qualitatively similar. In Table 14, we observe that the event again triggers positive and significant CARs, however, in a larger magnitude than in Table 4.

[22] Dyreng et al. (2016) briefly describe the legal setting. For further information, see, e.g., Thomson Reuters Practical Law, accessible under https://uk.practicallaw.thomsonreuters.com/w-008-0211?transitionType=Default&contextData=(sc.Default)&firstPage=true&bhcp=1 (last accessed: 2020-02-17) or refer to the formerly, UK Statute Law Database, under http://www.legislation.gov.uk/ukpga/2006/46/contents (last accessed: 2020-02-17) to access the Companies Act 2006.

[23] Refer to Table 2 (20,808/88,475 = 0.24).

[Table 14 about here.]

[Table 15 about here.]

Investors are still concerned about an institution's visibility (i.e., size), however, to a stronger extent than in our cross-sectional analyses. Pre-event GAAP ETRs and pre-event disclosure are again not significant.

[Table 16 about here.]

[Table 17 about here.]

[Table 18 about here.]

## 5.2 Banks vs. other financial institutions

Although the CRD IV applies both to investment firms and credit institutions, it might be difficult for investors to correctly assess whether an investment firm falls under the definition of the CRD IV. We therefore run our regression on a separate sample of international EU commercial banks as we believe that they might be easier to detect for investors than investment banks. We find similar results as in Table 4, indicating that investors are able to correctly identify the institutions that fall under the CRD IV.

[Table 19 about here.]

## 5.3 Alternate event dates

Although we believe that February 20$^{\text{th}}$, 2013, best identifies investors' surprise to a potential introduction of public CbCR, we test two alternate event dates. Figure 1 shows that CbCR was already mentioned in a first draft of the CRD IV on May 30$^{\text{th}}$, 2012. As the information on a potential inclusion of CbCR was already released, investors could have reacted before our event date. To rule out this possibility, we re-run our baseline regression, using May 30$^{\text{th}}$, 2012, as our event date. Table 20 shows that there is no significant reaction at this event date. Reasons for no reactions are that CbCR was not solemnly discussed, but with all regulations of the CRD IV. In this situation, it is difficult to identify whether investors react to the introduction of CbCR or to general features of the CRD IV. Additionally, as our legislative observer points out, investors and other observers did not believe in the inclusion of CbCR in the final directive.

[Table 20 about here.]

Another event date that might cause investor reactions is March 5$^{th}$, 2013. On this date, the European Council in connection with the European Parliament agreed on key issues of the CRD IV, including the introduction of CbCR. The cornerstones of the agreement are summarized and readily available for investors in the Legislative Observatory of the European Parliament[24]. Table 21 provides evidence that the event triggered a significant and negative investor reaction. Although the CARs are in a similar range as in Dutt et al. (2019), ranging from 0.4 to 0.8 %, the result should be interpreted with caution. Shortly before March 5$^{th}$, 2013, the Italian parliamentary elections took place and no clear winner could be assigned. This negative reaction could therefore refer to the result of the Italian election rather than to the introduction of CbCR.

[Table 21 about here.]

### 5.4 Different estimation period and event window

To rule out that our results are driven by the chosen estimation period, we expand our estimation period to a two-year estimation period, ranging from January 1$^{st}$, 2012, to December 31$^{st}$, 2013. As Table 22 shows the event window is no longer significant. However, this might be due to the fact that more observations in the after-event period are included, confounding investor reactions. In addition, we expand our event window to 5 and 7 days, centered at the event date. In terms of significance, the event window is no longer significant. As the initial information of February 20$^{th}$, 2013, becomes confounded with other events like such as the Italian parliamentary election, this finding is not surprising.

[Table 22 about here.]

[Table 23 about here.]

[Table 24 about here.]

## 6 Conclusion

We assess whether investors react to a potential introduction of CbCR for European institutions. Opposed to other public tax disclosure initiatives like the Australian Tax Laws Amendment Bill in 2013, the CbCR introduced by the CRD IV requires multinational financial institutions (i.e., credit institutions and investment firms) for the first time to disclose six financial statement items (e.g., employees, pretax income, taxes) on a country-by-country basis. The CRD IV was signed

[24] Visit https://oeil.secure.europarl.europa.eu/oeil/popups/summary.do?id=1252167&t=e&l=en (last accessed: 2020-03-10) to access the summary.

into law on June 26$^{th}$, 2013, and required the audited CbCR for *all* multinational institutions with their headquarters in Europe, starting on January 2015. Although CbCR was already included in the first draft to the European Parliament, our event (February 20$^{th}$, 2013) marks the decisive point from which on investors were confronted with the possibility of the adoption of public CbCR in the final draft of CRD IV. According to legislative observers, the probability of a public CbCR, being included in the final bill, was rather low up to that point.

We find weak evidence that investors view the introduction of public CbCR as beneficial, indicated by a weakly significant and positive market reaction to our event. As investors might evaluate perceived costs and benefits against different control groups, we compare the market reaction of our baseline sample (the international EU institutions) to different control groups (domestic EU institutions and international non-EU institutions). Additionally, costs and benefits of the introduction of a public CbCR might differ across the affected institutions. We therefore compare investor reactions of large international EU institutions to small international EU institutions, finding a strongly negative and significant effect of the event for large institutions. It seems that investors perceive CbCR more costly than for smaller international institutions. We find a similar reaction when comparing systemically relevant, international EU institutions, published by the EBA in 2013, to all other affected institutions. We therefore assume that investors are generally concerned with the introduction of CbCR for large international EU institutions. Other comparisons such as a low level of pre-event GAAP ETRs or pre-event geographic disclosure do not yield significant results.

## Appendix

[Figure 3 about here.]

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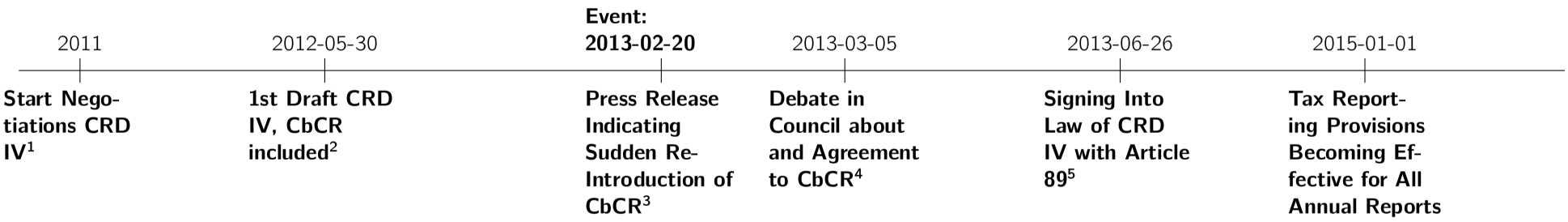
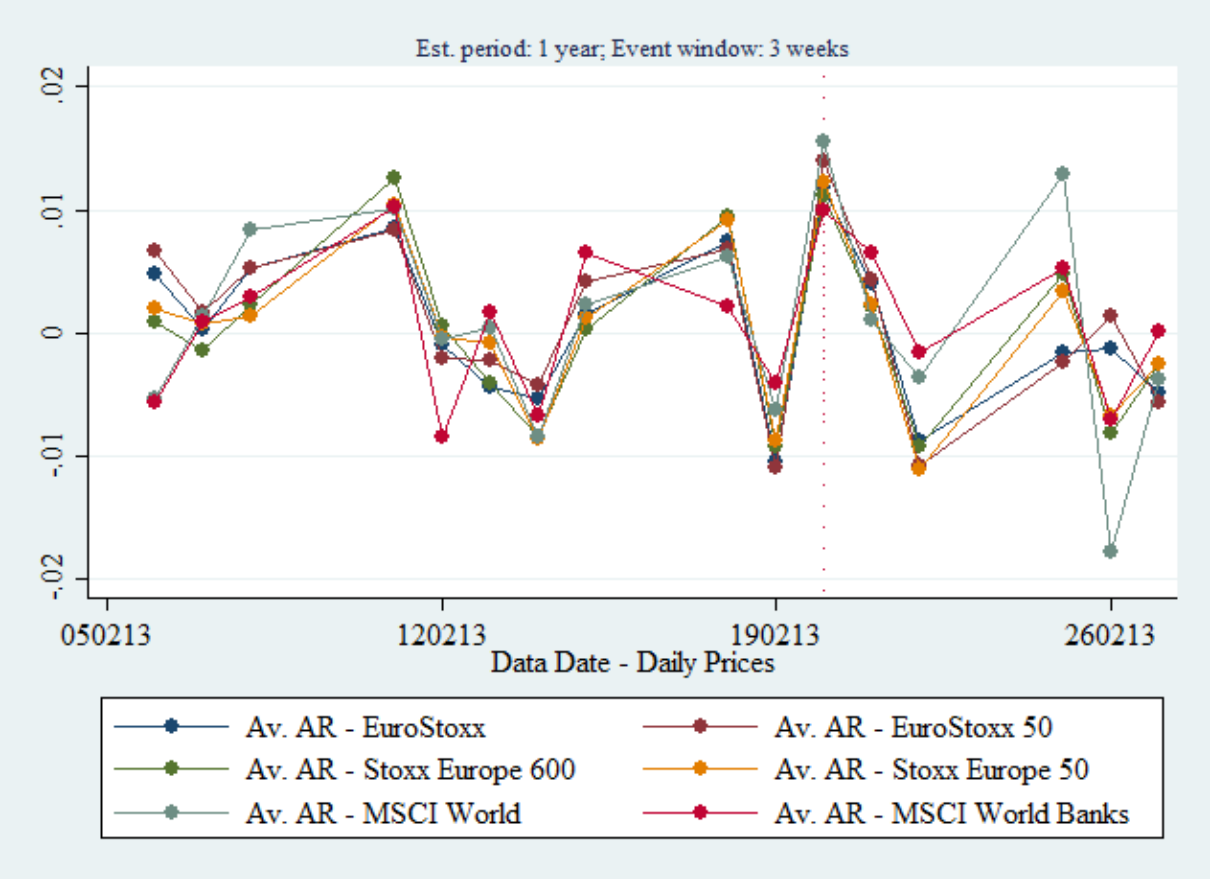
**Figure 1: Timeline of events**




This figure depicts a timeline of the legislative process surrounding the implementation of the CRD IV.
[1] Visit the Legislative Observatory under
https://oeil.secure.europarl.europa.eu/oeil/popups/ficheprocedure.do?lang=en&reference=2011/0203(COD) (last accessed: 2020-03-10).
[2] Refer to Article 86a under https://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//NONSGML+REPORT+A7-2012-0170+0+DOC+PDF+V0//EN
(last accessed: 2020-03-10) for further information.
[3] We provide the content of the press release in the appendix.
[4] Visit the Legislative Observatory under
https://oeil.secure.europarl.europa.eu/oeil/popups/summary.do?id=1252167&t=e&l=en (last accessed: 2020-03-10).
[5] See European Parliament (2013).

**Figure 2: Development of abnormal returns around event window**




This figure shows abnormal returns between Feb. 5$^{th}$ to Feb. 27$^{th}$, 2013, using different market indices. The red, dotted line depicts our event date, Feb. 20$^{th}$, 2013.

**Figure 3: Press release of the rapporteurs after the trilogue meeting on February 19th, 2013**

# Capital requirements directive: MEP's statement | News

*Press statement by Othmar Karas, Parliament's rapporteur on CRD4 / Basel III, and the shadow rapporteurs Udo Bullmann, (S&D, DE), Sharon Bowles (ALDE, UK), Philippe Lamberts (Greens/EFA, BE) and Vicky Ford (ECR, UK) after the trilogue negotiation meeting on 19 Feb 2013.*

The European Parliament's negotiating team regrets that a compromise deal with the Council was not possible at the trilogue yesterday, as the Council Presidency did not have a sufficient mandate. We were surprised to hear that only last Thursday (14 February) COREPER discussed for the first time political compromises which had been found much earlier between Parliament and previous Council presidencies.

In yesterday's (19 February) negotiating meeting the Council Presidency reopened political compromises previously concluded between the Council and the Parliament, amongst others, on capping the ratio of variable to fixed remuneration.

We are ready to give the Council one more week for internal discussions. If – after ten months of negotiations - a viable compromise cannot be found on 27 February, we do not see any possibility other than to ask the European Parliament to vote on its position in plenary session. We hope that at next week's meeting the Council Presidency will have a sufficient mandate for a political agreement.

It has been agreed with the Council presidency that five areas will be discussed at the meeting on 27 February:

- flexibility for member states to impose stricter rules on banks in certain areas of the CRD IV/ CRR,
- additional Capital Buffer Requirements for systemically important financial institutions (SIFIs) or to address broader systemic risk,
- power of the European Banking Authority (EBA) to mediate on its own initiative in the event of conflicts between national competent authorities,
- possibilities and conditions for bank shareholders to allow bankers' variable remuneration to rise to twice the fixed salary, on the basis that the ratio between the fixed salary and the variable part of the remuneration shall normally be 1:1, as was confirmed at yesterday's (19 February) trilogue, and
- in the area of corporate governance, the question of basic transparency requirements for disclosure of profits made, taxes paid and subsidies received by the institutions on a country-by-country basis („Country-by-Country-Reporting").

We call on the Council to come to a clear, concise and publicly defensible joint position in these areas.

Othmar Karas,
Udo Bullmann,
Sharon Bowles,
Philippe Lamberts,
Vicky Ford

**Table 1: Sample selection**

| | |
|---|---|
| International EU financial institutions with non-missing returns in our main estimation period (Jan. 1$^{st}$, 2012 to Feb. 27$^{th}$, 2013) | 36,952 |
| Less exchanges (SIC codes 6230 to 6299 and manually checking SIC code 6200) | 34,619 |
| Less real estate firms | 27,317 |
| Less missing observations in total assets | 27,076 |
| Less missing observations in GAAP ETR | 27,036 |
| Total observations in final sample | 27,036 |

**Table 2: Frequency distribution of countries included in our sample**

| Foreign Incorporation Code | Observations |
|---|---|
| AUT | 573 |
| BEL | 1428 |
| BGR | 38 |
| CYP | 40 |
| DEU | 3194 |
| DNK | 1090 |
| ESP | 1788 |
| FIN | 259 |
| FRA | 1865 |
| GBR | 6449 |
| GRC | 915 |
| HRV | 222 |
| HUN | 470 |
| IRL | 318 |
| ITA | 1981 |
| LTU | 36 |
| LUX | 506 |
| NLD | 1613 |
| POL | 1084 |
| PRT | 588 |
| SVN | 99 |
| SWE | 2480 |
| *N* | 27036 |

This table presents the frequency distribution of countries that are included in our sample for our main estimation period (Jan. $01^{st}$, 2012 to Feb. $27^{th}$, 2013). AUT = Austria, BEL = Belgium, BGR = Bulgaria, CYP = Cyprus, DEU = GERMANY, DNK = Denmark, ESP = Spain, FIN = Finland, FRA = France, GBR = Great Britain, GRC = Greece, HRV = Croatia, HUN = Hungary, IRL = Ireland, ITA = Italy, LTU = Lithuania, LUX = Luxembourg, MLT = Malta, NLD = Netherlands, POL = Poland, PRT = Portugal, SVN = Slovenia, SWE = Sweden. Although Croatia joined the European Union in the middle of 2013, we assume that the entry was a pro-forma act and investors therefore anticipate that the directive has to be signed into Croatian law in the near future.

**Table 3: Frequency distribution of SIC codes**

| SIC Code | Observations |
|---|---|
| 6020 | 13754 |
| 6099 | 241 |
| 6141 | 287 |
| 6159 | 287 |
| 6162 | 291 |
| 6172 | 291 |
| 6199 | 294 |
| 6200 | 711 |
| 6211 | 2443 |
| 6722 | 1055 |
| 6726 | 1712 |
| 6799 | 5670 |
| $N$ | 27036 |

This table presents the frequency distribution of SIC code for our main estimation period (Jan. $01^{st}$, 2012 to Feb. $27^{th}$, 2013). According to the definitions of the OSHA (https://www.osha.gov/pls/imis/sic_manual.html) and the SEC (https://www.sec.gov/info/edgar/siccodes.htm), the codes above correspond to 6020 = Commercial banks, 6099 = Functions related to commercial banking, 6141 = Personal credit institutions, 6159 = Miscellaneous business credit institutions, 6162 = Mortgage bankers and loan correspondents, 6172 = Finance lessors, 6199 = Finance services, 6200 = Security brokers, dealers, flotation companies (ex exchanges), 6211 = Security brokers, dealers and flotation companies, 6722 = Management investment offices, 6726 = Unit investment trust, 6799 = Investors.

**Table 4: General significance of the event**

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| EU Stoxx 600 | 0.85*** | | | | | |
| | (0.06) | | | | | |
| EU Stoxx 50 | | 0.77*** | | | | |
| | | (0.06) | | | | |
| Stoxx Eur. 600 | | | 1.06*** | | | |
| | | | (0.08) | | | |
| Stoxx Eur. 50 | | | | 1.07*** | | |
| | | | | (0.08) | | |
| MSCI World | | | | | 1.15*** | |
| | | | | | (0.08) | |
| MSCI World-Bank | | | | | | 0.96*** |
| | | | | | | (0.07) |
| Event | 0.0016 | 0.0021 | 0.0011 | 0.0015 | 0.0033 | 0.0041* |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Constant | 0.15** | 0.23*** | -0.055 | -0.066 | -0.15* | 0.042 |
| | (0.06) | (0.06) | (0.08) | (0.08) | (0.08) | (0.07) |
| Observations | 27036 | 27036 | 27036 | 27036 | 27036 | 27036 |
| Adjusted $R^2$ | 0.087 | 0.084 | 0.077 | 0.068 | 0.067 | 0.087 |

This table shows three-day cumulative returns for our event window. Our estimation period ranges from Jan. 01$^{st}$, 2012 to Feb. 27$^{th}$, 2013. The dependent variable are firm-level returns, calculated as the ratio between the $\text{price}_{i,t}$ and the $\text{price}_{i,t-1}$, adjusted for stock splits and dividends according to the formula provided by WRDS (https://wrds-www.wharton.upenn.edu/pages/support/support-articles/compustat/global/adjusting-daily-securities-prices-stock-splits-and-dividends/). The difference between model (1) to model (6) are the included market indices, controlling for market effects. **Event** is a binary variable, taking the value 1 for the days between Feb. 19$^{th}$ and Feb. 21$^{st}$, 2013 and zero otherwise. We cluster standard errors by firm. Significance levels are as follows: * 0.1 ** 0.05 *** 0.01

**Table 5: General significance of the event (Phase-in effect)**

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| EU Stoxx 600 | 0.86*** | | | | | |
| | (0.06) | | | | | |
| EU Stoxx 50 | | 0.78*** | | | | |
| | | (0.06) | | | | |
| Stoxx Eur. 600 | | | 1.06*** | | | |
| | | | (0.08) | | | |
| Stoxx Eur. 50 | | | | 1.07*** | | |
| | | | | (0.08) | | |
| MSCI World | | | | | 1.16*** | |
| | | | | | (0.08) | |
| MSCI World-Bank | | | | | | 0.96*** |
| | | | | | | (0.07) |
| Feb. 19$^{th}$, 2013 | -0.011** | -0.012** | -0.0097** | -0.0091** | -0.0069 | -0.0046 |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Feb. 20$^{th}$, 2013 | 0.012** | 0.014** | 0.011** | 0.012** | 0.016*** | 0.0098* |
| | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| Feb. 21$^{st}$, 2013 | 0.0042 | 0.0042 | 0.0020 | 0.0018 | 0.0014 | 0.0069* |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Constant | 0.14** | 0.22*** | -0.063 | -0.074 | -0.16* | 0.038 |
| | (0.06) | (0.06) | (0.08) | (0.08) | (0.08) | (0.07) |
| Observations | 27036 | 27036 | 27036 | 27036 | 27036 | 27036 |
| Adjusted $R^2$ | 0.088 | 0.085 | 0.078 | 0.068 | 0.068 | 0.088 |

This table shows daily abnormal returns for the three days of our event window. Our estimation period ranges from Jan. 01$^{st}$, 2012 to Feb. 27$^{th}$, 2013. The dependent variable are firm-level returns, calculated as the ratio between the price$_{i,t}$ and the price$_{i,t-1}$, adjusted for stock splits and dividends according to the formula provided by WRDS (https://wrds-www.wharton.upenn.edu/pages/support/support-articles/compustat/global/adjusting-daily-securities-prices-stock-splits-and-dividends/). The difference between model (1) to model (6) are the included market indices, controlling for market effects. We cluster standard errors by firm. Significance levels are as follows: * 0.1 ** 0.05 *** 0.01

**Table 6: Int. EU institutions vs. domestic EU institutions**

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| EU Stoxx 600 | 0.48*** | | | | | |
| | (0.03) | | | | | |
| EU Stoxx 50 | | 0.43*** | | | | |
| | | (0.03) | | | | |
| Stoxx Eur. 600 | | | 0.60*** | | | |
| | | | (0.04) | | | |
| Stoxx Eur. 50 | | | | 0.60*** | | |
| | | | | (0.04) | | |
| MSCI World | | | | | 0.65*** | |
| | | | | | (0.04) | |
| MSCI World-Bank | | | | | | 0.54*** |
| | | | | | | (0.03) |
| Event=1 | -0.00011 | 0.00016 | -0.00033 | -0.00011 | 0.00096 | 0.0013* |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Multinational Activities=1 | -0.000091 | -0.000095 | -0.000090 | -0.000090 | -0.000073 | -0.000074 |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Event=1 × Multinational Activities=1 | 0.00010 | 0.00010 | 0.000093 | 0.000087 | 0.000056 | 0.000088 |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Constant | 0.52*** | 0.58*** | 0.40*** | 0.40*** | 0.35*** | 0.47*** |
| | (0.03) | (0.03) | (0.04) | (0.04) | (0.04) | (0.03) |
| Observations | 89987 | 89987 | 89987 | 89987 | 89987 | 89987 |
| Adjusted $R^2$ | 0.029 | 0.027 | 0.027 | 0.023 | 0.023 | 0.029 |

This table shows whether investors perceive a possible introduction of public CbCR differently for international EU institutions compared to domestic EU institutions. Our estimation period ranges from Jan. 01$^{st}$, 2012 to Feb. 27$^{th}$, 2013. The dependent variable are firm-level returns, calculated as the ratio between the price$_{i,t}$ and the price$_{i,t-1}$, adjusted for stock splits and dividends according to the formula provided by WRDS (https://wrds-www.wharton.upenn.edu/pages/support/support-articles/compustat/global/adjusting-daily-securities-prices-stock-splits-and-dividends/). The difference between model (1) to model (6) are the included market indices, controlling for market effects. **Event** is a binary variable, taking the value 1 for the days between Feb. 19$^{th}$ and Feb. 21$^{st}$, 2013 and zero otherwise. **Multinational Activities** is a binary variable, taking the value 1 if either of the Thomson Reuters Worldscope items "international assets", "international operations" or "international sales" are not missing or not zero. We cluster standard errors by firm. Significance levels are as follows: * 0.1 ** 0.05 *** 0.01

**Table 7: Int. EU institutions vs. international non-EU institutions**

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| EU Stoxx 600 | 0.37*** | | | | | |
| | (0.03) | | | | | |
| EU Stoxx 50 | | 0.32*** | | | | |
| | | (0.03) | | | | |
| Stoxx Eur. 600 | | | 0.48*** | | | |
| | | | (0.03) | | | |
| Stoxx Eur. 50 | | | | 0.47*** | | |
| | | | | (0.03) | | |
| MSCI World | | | | | 0.55*** | |
| | | | | | (0.04) | |
| MSCI World-Bank | | | | | | 0.47*** |
| | | | | | | (0.03) |
| Event=1 | -0.0018** | -0.0016** | -0.0019*** | -0.0017** | -0.00076 | -0.00031 |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Europe=1 | -0.00021 | -0.00020 | -0.00020 | -0.00019 | -0.00020 | -0.00020 |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Event=1 × Europe=1 | 0.0013 | 0.0013 | 0.0013 | 0.0013 | 0.0013 | 0.0013 |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Constant | 0.63*** | 0.68*** | 0.52*** | 0.53*** | 0.45*** | 0.53*** |
| | (0.03) | (0.03) | (0.03) | (0.03) | (0.04) | (0.03) |
| Observations | 93560 | 93560 | 93560 | 93560 | 93560 | 93560 |
| Adjusted $R^2$ | 0.024 | 0.021 | 0.023 | 0.019 | 0.022 | 0.030 |

This table shows whether investors perceive a possible introduction of public CbCR differently for international EU institutions compared to international non-EU institutions. Our estimation period ranges from Jan. 01$^{st}$, 2012 to Feb. 27$^{th}$, 2013. The dependent variable are firm-level returns, calculated as the ratio between the price$_{i,t}$ and the price$_{i,t-1}$, adjusted for stock splits and dividends according to the formula provided by WRDS (https://wrds-www.wharton.upenn.edu/pages/support/support-articles/compustat/global/adjusting-daily-securities-prices-stock-splits-and-dividends/). The difference between model (1) to model (6) are the included market indices, controlling for market effects. **Event** is a binary variable, taking the value 1 for the days between Feb. 19$^{th}$ and Feb. 21$^{st}$, 2013 and zero otherwise. **Europe** is a binary variable, taking the value 1 if the Compustat foreign incorporation code is equal to the countries in Table 2. We cluster standard errors by firm. Significance levels are as follows: * 0.1 ** 0.05 *** 0.01

**Table 8: Large vs. small int. EU institutions**

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| EU Stoxx 600 | 0.85*** | | | | | |
| | (0.06) | | | | | |
| EU Stoxx 50 | | 0.77*** | | | | |
| | | (0.06) | | | | |
| Stoxx Eur. 600 | | | 1.06*** | | | |
| | | | (0.08) | | | |
| Stoxx Eur. 50 | | | | 1.07*** | | |
| | | | | (0.08) | | |
| MSCI World | | | | | 1.15*** | |
| | | | | | (0.08) | |
| MSCI World-Bank | | | | | | 0.96*** |
| | | | | | | (0.07) |
| Event=1 | 0.0034 | 0.0040 | 0.0029 | 0.0034 | 0.0052* | 0.0060** |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Large=1 | 0.00086*** | 0.00085*** | 0.00087*** | 0.00087*** | 0.00089*** | 0.00089*** |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Event=1 × Large=1 | -0.0097*** | -0.0097*** | -0.0097*** | -0.0097*** | -0.0097*** | -0.0098*** |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Constant | 0.15** | 0.23*** | -0.055 | -0.066 | -0.15* | 0.042 |
| | (0.06) | (0.06) | (0.08) | (0.08) | (0.08) | (0.07) |
| Observations | 27036 | 27036 | 27036 | 27036 | 27036 | 27036 |
| Adjusted $R^2$ | 0.087 | 0.084 | 0.077 | 0.068 | 0.067 | 0.088 |

This table shows whether investors perceive a possible introduction of public CbCR differently for affected, large EU institutions compared to affected, small institutions. Our estimation period ranges from Jan. 01st, 2012 to Feb. 27th, 2013. The dependent variable are firm-level returns, calculated as the ratio between the $\text{price}_{i,t}$ and the $\text{price}_{i,t-1}$, adjusted for stock splits and dividends according to the formula provided by WRDS (https://wrds-www.wharton.upenn.edu/pages/support/support-articles/compustat/global/adjusting-daily-securities-prices-stock-splits-and-dividends/). The difference between model (1) to model (6) are the included market indices, controlling for market effects. **Event** is a binary variable, taking the value 1 for the days between Feb. 19th and Feb. 21st, 2013 and zero otherwise. **Large** is a binary variable, indicating whether an international EU institution is above the mean of the size distribution (total assets). We cluster standard errors by firm. Significance levels are as follows: * 0.1 ** 0.05 *** 0.01

**Table 9: Systemically relevant EU banks vs. systemically non-relevant EU institutions**

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| EU Stoxx 600 | 0.85*** | | | | | |
| | (0.06) | | | | | |
| EU Stoxx 50 | | 0.77*** | | | | |
| | | (0.06) | | | | |
| Stoxx Eur. 600 | | | 1.06*** | | | |
| | | | (0.08) | | | |
| Stoxx Eur. 50 | | | | 1.07*** | | |
| | | | | (0.08) | | |
| MSCI World | | | | | 1.15*** | |
| | | | | | (0.08) | |
| MSCI World-Bank | | | | | | 0.96*** |
| | | | | | | (0.07) |
| Event=1 | 0.0028 | 0.0033 | 0.0023 | 0.0027 | 0.0045* | 0.0053* |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Relevant Banks=1 | 0.00080*** | 0.00080*** | 0.00080*** | 0.00080*** | 0.00082*** | 0.00082*** |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Event=1 × Relevant Banks=1 | -0.0077** | -0.0077** | -0.0077** | -0.0077** | -0.0077** | -0.0078** |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Constant | 0.15** | 0.23*** | -0.055 | -0.066 | -0.15* | 0.042 |
| | (0.06) | (0.06) | (0.08) | (0.08) | (0.08) | (0.07) |
| Observations | 27036 | 27036 | 27036 | 27036 | 27036 | 27036 |
| Adjusted $R^2$ | 0.087 | 0.084 | 0.077 | 0.068 | 0.067 | 0.088 |

This table compares investor reactions for affected, systemically relevant banks to other affected, but systemically non-relevant EU institutions. Our estimation period ranges from Jan. $01^{st}$, 2012 to Feb. $27^{th}$, 2013. The dependent variable are firm-level returns, calculated as the ratio between the $\text{price}_{i,t}$ and the $\text{price}_{i,t-1}$, adjusted for stock splits and dividends according to the formula provided by WRDS (https://wrds-www.wharton.upenn.edu/pages/support/support-articles/compustat/global/adjusting-daily-securities-prices-stock-splits-and-dividends/). The difference between model (1) to model (6) are the included market indices, controlling for market effects. **Event** is a binary variable, taking the value 1 for the days between Feb. $19^{th}$ and Feb. $21^{st}$, 2013 and zero otherwise. **Relevant Banks** is a binary variable, taking the value 1 for years 2011 and 2012 if the institution is listed on the EBA website as systemically relevant in 2013. We cluster standard errors by firm. Significance levels are as follows: * 0.1 ** 0.05 *** 0.01

**Table 10: Relevant EU banks vs. large, non-relevant EU institutions**

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| EU Stoxx 600 | 1.51*** | | | | | |
| | (0.10) | | | | | |
| EU Stoxx 50 | | 1.39*** | | | | |
| | | (0.10) | | | | |
| Stoxx Eur. 600 | | | 1.85*** | | | |
| | | | (0.11) | | | |
| Stoxx Eur. 50 | | | | 1.88*** | | |
| | | | | (0.11) | | |
| MSCI World | | | | | 1.98*** | |
| | | | | | (0.12) | |
| MSCI World-Bank | | | | | | 1.69*** |
| | | | | | | (0.11) |
| Event=1 | -0.0045 | -0.0034 | -0.0055 | -0.0047 | -0.0018 | -0.00020 |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Relevant Banks=1 | -0.00033 | -0.00029 | -0.00037 | -0.00036 | -0.00040 | -0.00038 |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Event=1 × Relevant Banks=1 | 0.0022 | 0.0022 | 0.0023 | 0.0022 | 0.0023 | 0.0023 |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Constant | -0.51*** | -0.39*** | -0.85*** | -0.87*** | -0.98*** | -0.69*** |
| | (0.10) | (0.10) | (0.11) | (0.11) | (0.12) | (0.11) |
| Observations | 6508 | 6508 | 6508 | 6508 | 6508 | 6508 |
| Adjusted $R^2$ | 0.469 | 0.462 | 0.404 | 0.358 | 0.339 | 0.465 |

This table compares affected and systemically relevant institutions to other large, affected institutions. Our estimation period ranges from Jan. $01^{st}$, 2012 to Feb. $27^{th}$, 2013. Large is defined as being above the mean of the size distribution (total assets). The dependent variable are firm-level returns, calculated as the ratio between the $\text{price}_{i,t}$ and the $\text{price}_{i,t-1}$, adjusted for stock splits and dividends according to the formula provided by WRDS (https://wrds-www.wharton.upenn.edu/pages/support/support-articles/compustat/global/adjusting-daily-securities-prices-stock-splits-and-dividends/). The difference between model (1) to model (6) are the included market indices, controlling for market effects. **Event** is a binary variable, taking the value 1 for the days between Feb. $19^{th}$ and Feb. $21^{st}$, 2013 and zero otherwise. **Relevant Banks** is a binary variable, taking the value 1 for years 2011 and 2012 if the institution is listed on the EBA website as systemically relevant. We cluster standard errors by firm. Significance levels are as follows: * 0.1 ** 0.05 *** 0.01

**Table 11: International EU banks vs. other international EU financial institutions**

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| EU Stoxx 600 | 0.85*** | | | | | |
| | (0.06) | | | | | |
| EU Stoxx 50 | | 0.77*** | | | | |
| | | (0.06) | | | | |
| Stoxx Eur. 600 | | | 1.06*** | | | |
| | | | (0.08) | | | |
| Stoxx Eur. 50 | | | | 1.07*** | | |
| | | | | (0.08) | | |
| MSCI World | | | | | 1.15*** | |
| | | | | | (0.08) | |
| MSCI World-Bank | | | | | | 0.96*** |
| | | | | | | (0.07) |
| Event=1 | 0.0040 | 0.0046 | 0.0035 | 0.0039 | 0.0058 | 0.0065 |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| BANK=1 | 0.00037 | 0.00036 | 0.00038 | 0.00037 | 0.00039 | 0.00037 |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Event=1 × BANK=1 | -0.0053 | -0.0053 | -0.0053 | -0.0053 | -0.0053 | -0.0053 |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Constant | 0.15** | 0.23*** | -0.055 | -0.066 | -0.15* | 0.042 |
| | (0.06) | (0.06) | (0.08) | (0.08) | (0.08) | (0.07) |
| Observations | 27036 | 27036 | 27036 | 27036 | 27036 | 27036 |
| Adjusted $R^2$ | 0.087 | 0.084 | 0.077 | 0.068 | 0.067 | 0.087 |

In this table, we compare investor reactions of international EU banks to other international EU financial institutions. Our estimation period ranges from Jan. $01^{st}$, 2012 to Feb. $27^{th}$, 2013. Large is defined as being above the mean of the size distribution (total assets). The dependent variable are firm-level returns, calculated as the ratio between the $\text{price}_{i,t}$ and the $\text{price}_{i,t-1}$, adjusted for stock splits and dividends according to the formula provided by WRDS (https://wrds-www.wharton.upenn.edu/pages/support/support-articles/compustat/global/adjusting-daily-securities-prices-stock-splits-and-dividends/). The difference between model (1) to model (6) are the included market indices, controlling for market effects. **Event** is a binary variable, taking the value 1 for the days between Feb. $19^{th}$ and Feb. $21^{st}$, 2013 and zero otherwise. **Bank** is a binary variable, taking the value 1 for SIC code 6020 and zero otherwise. We cluster standard errors by firm. Significance levels are as follows: * 0.1 ** 0.05 *** 0.01

**Table 12: Int. EU institutions with high vs. low pre-event GAAP ETRs**

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| EU Stoxx 600 | 0.86*** | | | | | |
| | (0.06) | | | | | |
| EU Stoxx 50 | | 0.78*** | | | | |
| | | (0.06) | | | | |
| Stoxx Eur. 600 | | | 1.07*** | | | |
| | | | (0.08) | | | |
| Stoxx Eur. 50 | | | | 1.08*** | | |
| | | | | (0.08) | | |
| MSCI World | | | | | 1.16*** | |
| | | | | | (0.08) | |
| MSCI World-Bank | | | | | | 0.97*** |
| | | | | | | (0.07) |
| Event=1 | -0.0024 | -0.0018 | -0.0029 | -0.0025 | -0.00068 | 0.00010 |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Low GAAP ETR=1 | -0.0000076 | -0.0000038 | 0.0000018 | 0.000013 | -0.000012 | -0.000015 |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Event=1 × Low GAAP ETR=1 | 0.0013 | 0.0013 | 0.0014 | 0.0013 | 0.0014 | 0.0014 |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Constant | 0.14** | 0.22*** | -0.069 | -0.082 | -0.16* | 0.033 |
| | (0.06) | (0.06) | (0.08) | (0.08) | (0.08) | (0.07) |
| Observations | 26473 | 26473 | 26473 | 26473 | 26473 | 26473 |
| Adjusted $R^2$ | 0.094 | 0.090 | 0.083 | 0.073 | 0.072 | 0.093 |

This table compares international EU institutions with low GAAP ETRs to those with high GAAP ETRs. Our estimation period ranges from Jan. $01^{st}$, 2012 to Feb. $27^{th}$, 2013. The dependent variable are firm-level returns, calculated as the ratio between the $\text{price}_{i,t}$ and the $\text{price}_{i,t-1}$, adjusted for stock splits and dividends according to the formula provided by WRDS (https://wrds-www.wharton.upenn.edu/pages/support/support-articles/compustat/global/adjusting-daily-securities-prices-stock-splits-and-dividends/). The difference between model (1) to model (6) are the included market indices, controlling for market effects. **Event** is a binary variable, taking the value 1 for the days between Feb. $19^{th}$ and Feb. $21^{st}$, 2013 and zero otherwise. **Low GAAP ETR** is a binary variable, taking the value 1 if the GAAP ETR in 2011 or 2012 is below the mean of the GAAP ETR distribution. We cluster standard errors by firm. Significance levels are as follows: * 0.1 ** 0.05 *** 0.01

**Table 13: Int. EU institutions with high vs. low pre-event disclosure**

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| EU Stoxx 600 | 0.86*** | | | | | |
| | (0.06) | | | | | |
| EU Stoxx 50 | | 0.78*** | | | | |
| | | (0.06) | | | | |
| Stoxx Eur. 600 | | | 1.07*** | | | |
| | | | (0.08) | | | |
| Stoxx Eur. 50 | | | | 1.08*** | | |
| | | | | (0.08) | | |
| MSCI World | | | | | 1.16*** | |
| | | | | | (0.08) | |
| MSCI World-Bank | | | | | | 0.97*** |
| | | | | | | (0.07) |
| Event=1 | -0.0018 | -0.0012 | -0.0023 | -0.0018 | -0.000033 | 0.00077 |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Low Disclosure=1 | 0.00075** | 0.00075** | 0.00074* | 0.00074* | 0.00074* | 0.00074** |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Event=1 × Low Disclosure=1 | 0.00037 | 0.00038 | 0.00037 | 0.00037 | 0.00037 | 0.00034 |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Constant | 0.14** | 0.22*** | -0.069 | -0.083 | -0.16* | 0.033 |
| | (0.06) | (0.06) | (0.08) | (0.08) | (0.08) | (0.07) |
| Observations | 26473 | 26473 | 26473 | 26473 | 26473 | 26473 |
| Adjusted $R^2$ | 0.094 | 0.090 | 0.083 | 0.073 | 0.072 | 0.094 |

This table compares international EU institutions with low pre-event disclosure to those with high pre-event disclosure. Our estimation period ranges from Jan. 01$^{st}$, 2012 to Feb. 27$^{th}$, 2013. The dependent variable are firm-level returns, calculated as the ratio between the $\text{price}_{i,t}$ and the $\text{price}_{i,t-1}$, adjusted for stock splits and dividends according to the formula provided by WRDS (https://wrds-www.wharton.upenn.edu/pages/support/support-articles/compustat/global/adjusting-daily-securities-prices-stock-splits-and-dividends/). The difference between model (1) to model (6) are the included market indices, controlling for market effects. **Event** is a binary variable, taking the value 1 for the days between Feb. 19$^{th}$ and Feb. 21$^{st}$, 2013 and zero otherwise. **Low Disclosure** is a binary variable, taking the value 1 if the average aggregate score, calculated on the basis of Brown et al. (2019) and Akamah et al. (2018), across all geographic segments is above the distribution mean in 2011 and 2012. We cluster standard errors by firm. Significance levels are as follows: * 0.1 ** 0.05 *** 0.01

**Table 14: General significance of the event (exclusive UK)**

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| EU Stoxx 600 | 0.93*** | | | | | |
| | (0.08) | | | | | |
| EU Stoxx 50 | | 0.84*** | | | | |
| | | (0.07) | | | | |
| Stoxx Eur. 600 | | | 1.12*** | | | |
| | | | (0.09) | | | |
| Stoxx Eur. 50 | | | | 1.13*** | | |
| | | | | (0.09) | | |
| MSCI World | | | | | 1.24*** | |
| | | | | | (0.10) | |
| MSCI World-Bank | | | | | | 1.03*** |
| | | | | | | (0.08) |
| Event | 0.0028 | 0.0034 | 0.0021 | 0.0026 | 0.0046* | 0.0054** |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Constant | 0.074 | 0.16** | -0.12 | -0.13 | -0.24** | -0.033 |
| | (0.08) | (0.07) | (0.09) | (0.09) | (0.10) | (0.08) |
| Observations | 20587 | 20587 | 20587 | 20587 | 20587 | 20587 |
| Adjusted $R^2$ | 0.091 | 0.088 | 0.077 | 0.068 | 0.069 | 0.090 |

In this table, UK observations are deleted. Our estimation period ranges from Jan. 01st, 2012 to Feb.27th, 2013. The dependent variable are firm-level returns, calculated as the ratio between the $\text{price}_{i,t}$ and the $\text{price}_{i,t-1}$, adjusted for stock splits and dividends according to the formula provided by WRDS (https://wrds-www.wharton.upenn.edu/pages/support/support-articles/compustat/global/adjusting-daily-securities-prices-stock-splits-and-dividends/). The difference between model (1) to model (6) are the included market indices, controlling for market effects. **Event** is a binary variable, taking the value 1 for the days between Feb. 19th and Feb. 21st, 2013 and zero otherwise. We cluster standard errors by firm. Significance levels are as follows: * 0.1 ** 0.05 *** 0.01

**Table 15: Large vs. small int. EU institutions (exclusive UK)**

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| EU Stoxx 600 | 0.93*** | | | | | |
| | (0.08) | | | | | |
| EU Stoxx 50 | | 0.84*** | | | | |
| | | (0.07) | | | | |
| Stoxx Eur. 600 | | | 1.12*** | | | |
| | | | (0.09) | | | |
| Stoxx Eur. 50 | | | | 1.13*** | | |
| | | | | (0.09) | | |
| MSCI World | | | | | 1.24*** | |
| | | | | | (0.10) | |
| MSCI World-Bank | | | | | | 1.03*** |
| | | | | | | (0.08) |
| Event=1 | 0.0053* | 0.0059* | 0.0047 | 0.0051 | 0.0071** | 0.0080** |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Large=1 | 0.00082*** | 0.00081** | 0.00083*** | 0.00083*** | 0.00085*** | 0.00085*** |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Event=1 × Large=1 | -0.012*** | -0.012*** | -0.012*** | -0.012*** | -0.012*** | -0.012*** |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Constant | 0.074 | 0.16** | -0.12 | -0.13 | -0.24** | -0.033 |
| | (0.08) | (0.07) | (0.09) | (0.09) | (0.10) | (0.08) |
| Observations | 20587 | 20587 | 20587 | 20587 | 20587 | 20587 |
| Adjusted $R^2$ | 0.091 | 0.088 | 0.078 | 0.068 | 0.069 | 0.090 |

In this table, UK observations are deleted. Our estimation period ranges from Jan. $01^{st}$, 2012 to Feb. $27^{th}$, 2013. The dependent variable are firm-level returns, calculated as the ratio between the $price_{i,t}$ and the $price_{i,t-1}$, adjusted for stock splits and dividends according to the formula provided by WRDS (https://wrds-www.wharton.upenn.edu/pages/support/support-articles/compustat/global/adjusting-daily-securities-prices-stock-splits-and-dividends/). The difference between model (1) to model (6) are the included market indices, controlling for market effects. **Event** is a binary variable, taking the value 1 for the days between Feb. $19^{th}$ and Feb. $21^{st}$, 2013 and zero otherwise. **Large** is a binary variable, indicating whether an international EU institution is above the mean of the size distribution (total assets). We cluster standard errors by firm. Significance levels are as follows: * 0.1 ** 0.05 *** 0.01

**Table 16: Relevant EU banks vs. large, non-relevant EU institutions (exclusive UK)**

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| EU Stoxx 600 | 1.60*** | | | | | |
| | (0.12) | | | | | |
| EU Stoxx 50 | | 1.47*** | | | | |
| | | (0.11) | | | | |
| Stoxx Eur. 600 | | | 1.92*** | | | |
| | | | (0.13) | | | |
| Stoxx Eur. 50 | | | | 1.94*** | | |
| | | | | (0.13) | | |
| MSCI World | | | | | 2.08*** | |
| | | | | | (0.14) | |
| MSCI World-Bank | | | | | | 1.77*** |
| | | | | | | (0.13) |
| Event=1 | -0.0070* | -0.0059 | -0.0082* | -0.0074* | -0.0042 | -0.0026 |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Relevant Banks=1 | -0.00065 | -0.00060 | -0.00070 | -0.00069 | -0.00074 | -0.00073 |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Event=1 × Relevant Banks=1 | 0.0043 | 0.0042 | 0.0043 | 0.0043 | 0.0044 | 0.0043 |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Constant | -0.60*** | -0.47*** | -0.92*** | -0.94*** | -1.08*** | -0.77*** |
| | (0.12) | (0.11) | (0.13) | (0.13) | (0.14) | (0.13) |
| Observations | 5113 | 5113 | 5113 | 5113 | 5113 | 5113 |
| Adjusted $R^2$ | 0.494 | 0.490 | 0.411 | 0.361 | 0.351 | 0.474 |

In this table, UK observations are deleted. Our estimation period ranges from Jan. $01^{st}$, 2012 to Feb. $27^{th}$, 2013. This table compares affected and systemically relevant institutions to other large, affected institutions. Large is defined as being above the mean of the size distribution (total assets). The dependent variable are firm-level returns, calculated as the ratio between the $\text{price}_{i,t}$ and the $\text{price}_{i,t-1}$, adjusted for stock splits and dividends according to the formula provided by WRDS (https://wrds-www.wharton.upenn.edu/pages/support/support-articles/compustat/global/adjusting-daily-securities-prices-stock-splits-and-dividends/). The difference between model (1) to model (6) are the included market indices, controlling for market effects. **Event** is a binary variable, taking the value 1 for the days between Feb. $19^{th}$ and Feb. $21^{st}$, 2013 and zero otherwise. **Relevant Banks** is a binary variable, taking the value 1 for years 2011 and 2012 if the institution is listed on the EBA website as systemically relevant. We cluster standard errors by firm. Significance levels are as follows: * 0.1 ** 0.05 *** 0.01

**Table 17: Int. EU institutions with high vs. low GAAP ETRs (exclusive UK)**

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| EU Stoxx 600 | 0.94*** | | | | | |
| | (0.08) | | | | | |
| EU Stoxx 50 | | 0.85*** | | | | |
| | | (0.07) | | | | |
| Stoxx Eur. 600 | | | 1.14*** | | | |
| | | | (0.09) | | | |
| Stoxx Eur. 50 | | | | 1.15*** | | |
| | | | | (0.09) | | |
| MSCI World | | | | | 1.25*** | |
| | | | | | (0.10) | |
| MSCI World-Bank | | | | | | 1.04*** |
| | | | | | | (0.08) |
| Event=1 | -0.0044* | -0.0038 | -0.0050** | -0.0045* | -0.0025 | -0.0017 |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Low GAAP ETR=1 | -0.00022 | -0.00022 | -0.00020 | -0.00018 | -0.00022 | -0.00024 |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Event=1 × Low GAAP ETR=1 | 0.0049 | 0.0049 | 0.0048 | 0.0048 | 0.0048 | 0.0049 |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Constant | 0.062 | 0.15** | -0.14 | -0.15 | -0.25** | -0.042 |
| | (0.08) | (0.07) | (0.09) | (0.09) | (0.10) | (0.08) |
| Observations | 20184 | 20184 | 20184 | 20184 | 20184 | 20184 |
| Adjusted $R^2$ | 0.098 | 0.095 | 0.084 | 0.073 | 0.075 | 0.096 |

In this table, UK observations are deleted. Our estimation period ranges from Jan. 01$^{st}$, 2012 to Feb. 27$^{th}$, 2013. The dependent variable are firm-level returns, calculated as the ratio between the price$_{i,t}$ and the price$_{i,t-1}$, adjusted for stock splits and dividends according to the formula provided by WRDS (https://wrds-www.wharton.upenn.edu/pages/support/support-articles/compustat/global/adjusting-daily-securities-prices-stock-splits-and-dividends/). The difference between model (1) to model (6) are the included market indices, controlling for market effects. **Event** is a binary variable, taking the value 1 for the days between Feb. 19$^{th}$ and Feb. 21$^{st}$, 2013 and zero otherwise. **Low GAAP ETR** is a binary variable, taking the value 1 if the GAAP ETR is below the mean of the GAAP ETR distribution. We cluster standard errors by firm. Significance levels are as follows: * 0.1 ** 0.05 *** 0.01

**Table 18: Int. EU institutions with high vs. low disclosure in 2012 (Exclusive UK)**

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| EU Stoxx 600 | 0.94*** | | | | | |
| | (0.08) | | | | | |
| EU Stoxx 50 | | 0.85*** | | | | |
| | | (0.07) | | | | |
| Stoxx Eur. 600 | | | 1.14*** | | | |
| | | | (0.09) | | | |
| Stoxx Eur. 50 | | | | 1.15*** | | |
| | | | | (0.09) | | |
| MSCI World | | | | | 1.25*** | |
| | | | | | (0.10) | |
| MSCI World-Bank | | | | | | 1.04*** |
| | | | | | | (0.08) |
| Event=1 | -0.0025 | -0.0019 | -0.0031 | -0.0026 | -0.00059 | 0.00021 |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Low Disclosure=1 | -0.00072* | -0.00073* | -0.00071* | -0.00071* | -0.00070 | -0.00071 |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Event=1 × Low Disclosure=1 | 0.0030 | 0.0030 | 0.0030 | 0.0030 | 0.0029 | 0.0030 |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Constant | 0.063 | 0.15** | -0.14 | -0.15 | -0.25** | -0.042 |
| | (0.08) | (0.07) | (0.09) | (0.09) | (0.10) | (0.08) |
| Observations | 20184 | 20184 | 20184 | 20184 | 20184 | 20184 |
| Adjusted $R^2$ | 0.099 | 0.096 | 0.084 | 0.074 | 0.075 | 0.096 |

In this table, UK observations are deleted. Our estimation period ranges from Jan. 01$^{st}$, 2012 to Feb. 27$^{th}$, 2013. The dependent variable are firm-level returns, calculated as the ratio between the price$_{i,t}$ and the price$_{i,t-1}$, adjusted for stock splits and dividends according to the formula provided by WRDS (https://wrds-www.wharton.upenn.edu/pages/support/support-articles/compustat/global/adjusting-daily-securities-prices-stock-splits-and-dividends/). The difference between model (1) to model (6) are the included market indices, controlling for market effects. **Event** is a binary variable, taking the value 1 for the days between Feb. 19$^{th}$ and Feb. 21$^{st}$, 2013 and zero otherwise. **Low Disclosure** is a binary variable, taking the value 1 if the average aggregate score, calculated on the basis of Brown et al. (2019) and Akamah et al. (2018), across all geographic segments is above the distribution mean. We cluster standard errors by firm. Significance levels are as follows: * 0.1 ** 0.05 *** 0.01

**Table 19: General significance of the event (Bank only sample)**

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| EU Stoxx 600 | 1.21*** | | | | | |
| | (0.08) | | | | | |
| EU Stoxx 50 | | 1.10*** | | | | |
| | | (0.08) | | | | |
| Stoxx Eur. 600 | | | 1.46*** | | | |
| | | | (0.10) | | | |
| Stoxx Eur. 50 | | | | 1.47*** | | |
| | | | | (0.10) | | |
| MSCI World | | | | | 1.60*** | |
| | | | | | (0.10) | |
| MSCI World-Bank | | | | | | 1.34*** |
| | | | | | | (0.09) |
| Event | 0.00016 | 0.00097 | -0.00064 | -0.000058 | 0.0025 | 0.0037** |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Constant | -0.21** | -0.099 | -0.46*** | -0.47*** | -0.60*** | -0.34*** |
| | (0.08) | (0.08) | (0.10) | (0.10) | (0.10) | (0.09) |
| Observations | 13754 | 13754 | 13754 | 13754 | 13754 | 13754 |
| Adjusted $R^2$ | 0.155 | 0.152 | 0.131 | 0.115 | 0.116 | 0.153 |

This table shows our results when we only keep commercial banks (SIC code 6020) in our sample. Our estimation period ranges from Jan. 01$^{st}$, 2012 to Feb. 27$^{th}$, 2013. Large is defined as being above the mean of the size distribution (total assets). The dependent variable are firm-level returns, calculated as the ratio between the $\text{price}_{i,t}$ and the $\text{price}_{i,t-1}$, adjusted for stock splits and dividends according to the formula provided by WRDS (https://wrds-www.wharton.upenn.edu/pages/support/support-articles/compustat/global/adjusting-daily-securities-prices-stock-splits-and-dividends/). The difference between model (1) to model (6) are the included market indices, controlling for market effects. **Event** is a binary variable, taking the value 1 for the days between Feb. 19$^{th}$ and Feb. 21$^{st}$, 2013 and zero otherwise. Significance levels are as follows: * 0.1 ** 0.05 *** 0.01

**Table 20: General significance of event (Alternate event date: May 30th, 2012)**

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| EU Stoxx 600 | 0.87*** | | | | | |
| | (0.06) | | | | | |
| EU Stoxx 50 | | 0.81*** | | | | |
| | | (0.05) | | | | |
| Stoxx Eur. 600 | | | 1.03*** | | | |
| | | | (0.06) | | | |
| Stoxx Eur. 50 | | | | 1.07*** | | |
| | | | | (0.07) | | |
| MSCI World | | | | | 1.04*** | |
| | | | | | (0.06) | |
| MSCI World-Bank | | | | | | 0.87*** |
| | | | | | | (0.06) |
| Event | -0.00044 | -0.00061 | 0.000062 | -0.00061 | -0.00013 | -0.00074 |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Constant | 0.13** | 0.18*** | -0.034 | -0.074 | -0.039 | 0.13** |
| | (0.06) | (0.05) | (0.06) | (0.07) | (0.06) | (0.06) |
| Observations | 27308 | 27308 | 27308 | 27308 | 27308 | 27308 |
| Adjusted $R^2$ | 0.159 | 0.155 | 0.148 | 0.139 | 0.132 | 0.159 |

In this table, we choose an alternate event date (May 30th, 2012). Our estimation period ranges from Apr. 01st, 2011 to Jun. 6th, 2012. The dependent variable are firm-level returns, calculated as the ratio between the $\text{price}_{i,t}$ and the $\text{price}_{i,t-1}$, adjusted for stock splits and dividends according to the formula provided by WRDS (https://wrds-www.wharton.upenn.edu/pages/support/support-articles/compustat/global/adjusting-daily-securities-prices-stock-splits-and-dividends/). The difference between model (1) to model (6) are the included market indices, controlling for market effects. **Event** is a binary variable, taking the value 1 for the days between May 29th and May 31st, 2012 and zero otherwise. We cluster standard errors by firm. Significance levels are as follows: * 0.1 ** 0.05 *** 0.01

**Table 21: General significance of event (Alternate event date: March 5$^{th}$, 2013)**

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| EU Stoxx 600 | 0.85*** | | | | | |
| | (0.06) | | | | | |
| EU Stoxx 50 | | 0.77*** | | | | |
| | | (0.06) | | | | |
| Stoxx Eur. 600 | | | 1.05*** | | | |
| | | | (0.08) | | | |
| Stoxx Eur. 50 | | | | 1.06*** | | |
| | | | | (0.08) | | |
| MSCI World | | | | | 1.15*** | |
| | | | | | (0.08) | |
| MSCI World-Bank | | | | | | 0.95*** |
| | | | | | | (0.07) |
| Event | -0.0078*** | -0.0083*** | -0.0071*** | -0.0073*** | -0.0073*** | -0.0045** |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Constant | 0.15** | 0.23*** | -0.052 | -0.062 | -0.15* | 0.048 |
| | (0.06) | (0.06) | (0.08) | (0.08) | (0.08) | (0.07) |
| Observations | 27862 | 27862 | 27862 | 27862 | 27862 | 27862 |
| Adjusted $R^2$ | 0.086 | 0.083 | 0.076 | 0.067 | 0.066 | 0.085 |

In this table, we choose an alternate event date (Mar. 5$^{th}$, 2013). Our estimation period ranges from Jan. 01$^{st}$, 2012 to Mar. 12$^{th}$, 2013. The dependent variable are firm-level returns, calculated as the ratio between the $\text{price}_{i,t}$ and the $\text{price}_{i,t-1}$, adjusted for stock splits and dividends according to the formula provided by WRDS (https://wrds-www.wharton.upenn.edu/pages/support/support-articles/compustat/global/adjusting-daily-securities-prices-stock-splits-and-dividends/). The difference between model (1) to model (6) are the included market indices, controlling for market effects. **Event** is a binary variable, taking the value 1 for the days between Mar. 4$^{th}$ and Mar. 6$^{th}$, 2013 and zero otherwise. We cluster standard errors by firm. Significance levels are as follows: * 0.1 ** 0.05 *** 0.01

**Table 22: General significance of event (Alternate estimation period)**

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| EU Stoxx 600 | 0.83*** | | | | | |
| | (0.06) | | | | | |
| EU Stoxx 50 | | 0.74*** | | | | |
| | | (0.05) | | | | |
| Stoxx Eur. 600 | | | 0.98*** | | | |
| | | | (0.07) | | | |
| Stoxx Eur. 50 | | | | 0.96*** | | |
| | | | | (0.07) | | |
| MSCI World | | | | | 1.04*** | |
| | | | | | (0.07) | |
| MSCI World-Bank | | | | | | 0.90*** |
| | | | | | | (0.06) |
| Event | 0.0014 | 0.0019 | 0.00074 | 0.0011 | 0.0028 | 0.0035 |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Constant | 0.18*** | 0.26*** | 0.024 | 0.040 | -0.039 | 0.10 |
| | (0.06) | (0.05) | (0.07) | (0.07) | (0.07) | (0.06) |
| Observations | 45936 | 45936 | 45936 | 45936 | 45936 | 45936 |
| Adjusted $R^2$ | 0.054 | 0.052 | 0.048 | 0.042 | 0.038 | 0.051 |

This table shows results for an alternate estimation period, ranging from Jan. 1st, 2012 to Dec. 31st, 2013. The dependent variable are firm-level returns, calculated as the ratio between the $\text{price}_{i,t}$ and the $\text{price}_{i,t-1}$, adjusted for stock splits and dividends according to the formula provided by WRDS (https://wrds-www.wharton.upenn.edu/pages/support/support-articles/compustat/global/adjusting-daily-securities-prices-stock-splits-and-dividends/). The difference between model (1) to model (6) are the included market indices, controlling for market effects. **Event** is a binary variable, taking the value 1 for the days between Feb. 19th and Feb. 21st, 2013 and zero otherwise. We cluster standard errors by firm. Significance levels are as follows: * 0.1 ** 0.05 *** 0.01

**Table 23: General significance of event (Five-day event window)**

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| EU Stoxx 600 | 0.85*** | | | | | |
| | (0.06) | | | | | |
| EU Stoxx 50 | | 0.77*** | | | | |
| | | (0.06) | | | | |
| Stoxx Eur. 600 | | | 1.06*** | | | |
| | | | (0.08) | | | |
| Stoxx Eur. 50 | | | | 1.07*** | | |
| | | | | (0.08) | | |
| MSCI World | | | | | 1.15*** | |
| | | | | | (0.08) | |
| MSCI World-Bank | | | | | | 0.96*** |
| | | | | | | (0.07) |
| Event | 0.00046 | 0.00023 | 0.00049 | 0.00029 | 0.0023 | 0.0024 |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Constant | 0.15** | 0.23*** | -0.055 | -0.065 | -0.15* | 0.044 |
| | (0.06) | (0.06) | (0.08) | (0.08) | (0.08) | (0.07) |
| Observations | 27036 | 27036 | 27036 | 27036 | 27036 | 27036 |
| Adjusted $R^2$ | 0.087 | 0.084 | 0.077 | 0.068 | 0.067 | 0.087 |

In this table, we choose a five-day event window. Our estimation period ranges from Jan. 01$^{st}$, 2012 to Feb. 27$^{th}$, 2013. The dependent variable are firm-level returns, calculated as the ratio between the $\text{price}_{i,t}$ and the $\text{price}_{i,t-1}$, adjusted for stock splits and dividends according to the formula provided by WRDS (https://wrds-www.wharton.upenn.edu/pages/support/support-articles/compustat/global/adjusting-daily-securities-prices-stock-splits-and-dividends/). The difference between model (1) to model (6) are the included market indices, controlling for market effects. **Event** is a binary variable, taking the value 1 for the days between Feb. 18$^{th}$ and Feb. 22$^{nd}$, 2013 and zero otherwise. We cluster standard errors by firm. Significance levels are as follows: * 0.1 ** 0.05 *** 0.01

**Table 24: General significance of event (Seven-day event window)**

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| EU Stoxx 600 | 0.85*** | | | | | |
| | (0.06) | | | | | |
| EU Stoxx 50 | | 0.77*** | | | | |
| | | (0.06) | | | | |
| Stoxx Eur. 600 | | | 1.06*** | | | |
| | | | (0.08) | | | |
| Stoxx Eur. 50 | | | | 1.07*** | | |
| | | | | (0.08) | | |
| MSCI World | | | | | 1.15*** | |
| | | | | | (0.08) | |
| MSCI World-Bank | | | | | | 0.96*** |
| | | | | | | (0.07) |
| Event | 0.00046 | 0.00023 | 0.00049 | 0.00029 | 0.0023 | 0.0024 |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Constant | 0.15** | 0.23*** | -0.055 | -0.065 | -0.15* | 0.044 |
| | (0.06) | (0.06) | (0.08) | (0.08) | (0.08) | (0.07) |
| Observations | 27036 | 27036 | 27036 | 27036 | 27036 | 27036 |
| Adjusted $R^2$ | 0.087 | 0.084 | 0.077 | 0.068 | 0.067 | 0.087 |

In this table, we choose a seven-day event window. Our estimation period ranges from Jan. 01$^{st}$, 2012 to Feb. 27$^{th}$, 2013. The dependent variable are firm-level returns, calculated as the ratio between the $\text{price}_{i,t}$ and the $\text{price}_{i,t-1}$, adjusted for stock splits and dividends according to the formula provided by WRDS (https://wrds-www.wharton.upenn.edu/pages/support/support-articles/compustat/global/adjusting-daily-securities-prices-stock-splits-and-dividends/). The difference between model (1) to model (6) are the included market indices, controlling for market effects. **Event** is a binary variable, taking the value 1 for the days between Feb. 17$^{th}$ and Feb. 23$^{rd}$, 2013 and zero otherwise. We cluster standard errors by firm. Significance levels are as follows: * 0.1 ** 0.05 *** 0.01

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