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Abstract
While there is a vigorous academic and policy debate about the implications of the Incurred Loss Model (ILM) for financial stability, there is no empirical evidence on whether the new Expected Loss Model (ELM) introduced by IASB benefits international investors. We address this relevant issue by investigating the price reaction to announcements related to the impairment rules incorporated in IFRS 9 on a sample of 137 European listed banks for the period from November 2009 to July 2014. We provide evidence that the abnormal returns related to these events are substantially uncorrelated with proxies of timely loss recognition, earnings management, and capital management, suggesting that the new ELM is not perceived to bring about substantial benefits as compared to the ILM. These results are robust to confounding events, international media coverage, and winsorizing techniques. Bootstrap analysis supports the hypothesis that significant results for some of the events and some of the proxies may be due to over-sized tests for the sample period under examination. Our findings shed light on a recent claim in the literature that the quality of financial statements bears at best second-order effects on firm value.

Keywords: *earnings management; IFRS 9; impairment; loan loss provisions; stock market reaction*

1. Introduction

The recent financial crisis has urged standard setters and regulators to reexamine the role of governance practices and accounting standards (Financial Crisis Advisory Group, 2009).

On July 24, 2014, the International Accounting Standards Board (IASB) issued the International Financial Reporting Standard (IFRS) 9 – *Financial Instruments*, to replace (IAS) 39 –*Financial Instruments: Recognition and Measurement*. The IFRS 9 replaces the Incurred Loss Model (ILM) approach for impairment of loans and other financial assets, as defined by IAS 39 with a new Expected Loss Model (ELM).

The adoption of the ELM is expected to carry important consequences in terms of disclosure of information on the value of financial assets. In particular, it may provide the preparers of the financial statements with more discretion in loan loss recognition. Such discretion is deemed necessary because the ILM has been criticized due to its inability to recognize loan losses timely (Financial Stability Forum, 2009; Laux 2012; O'Hanlon, 2013). The main reason for this inability is the need for objective evidence of impairment before a loss is recognized. Bank managers can thus postpone the recognition of losses and evade (albeit momentarily) market discipline. This problem has led to a vigorous international policy debate about potential implications of the ILM for procyclicality and financial stability (Financial Stability Forum, 2009; Basel Committee on Banking Supervision, 2009; Financial Crisis Advisory Group, 2009; Beatty and Liao, 2011; Vyas, 2011; Laux, 2012).

Academics argue that the ILM has been an important factor contributing to the deterioration of transparency of banks' financial statements in the run-up and during the financial crisis (Laux and Leuz, 2010; Beatty and Liao, 2011; Laux, 2012). Moreover, policymakers as well as practitioners have raised vocal concerns about the high complexity and difficult application of IAS 39, especially for firms holding large amounts of financial assets, namely banks (Financial stability Forum, 2009).

The IASB and international policy makers have emphasized the key role of ELM in improving investor confidence in banks' balance sheets (IASB, 2014). Therefore, the ELM is expected to have a massive impact on the European banking system and, because of the potential negative externalities of financial instability, on the European economy as a whole.

Are the new accounting rules for loan loss provisions able to restore the confidence of market participants in the transparency and integrity of financial reporting? Do investors perceive the possibility to recognize losses earlier as critically important to increase shareholder value? We aim to answer these questions by investigating how international investors perceive the potential impact of this new accounting reform.

While there is a lively debate on how the loan loss provisioning accounting rules may affect the macroeconomy, (Laeven and Majnoni, 2003; Bouvatier and Lepetit, 2008; Beatty and Liao, 2011; Cohen et al., 2014) there is no empirical evidence on how international investors react to the new ELM approach introduced by IASB. In particular, while the ELM is expected to increase the timeliness of loss recognition (because of its forward-looking nature), the higher degree of discretion with respect to the ILM (which is, essentially, backward looking) may enable banks to manipulate earnings and/or capital ratios through changes in loan loss provisions.

There is currently a debate among scholars about the possibility to improve firm value through better accounting quality. In particular, while some scholars have found evidence of capital markets effects resulting from IFRS adoption, others claim that CFOs consider financial reporting as a simple compliance exercise and are unlikely to put considerable effort into improving financial reports to increase firm value (Dichev, 2014).

As reported in Table 1,[1] there are already contributions on the potential effects of forward-looking loan loss provisioning, for instance on bank risk-taking (Bushman and Williams, 2012). However, most of existing literature has focused on the ILM under IAS 39 (among others, Gebhardt and Novotny-Farkas, 2011; O'Hanlon, 2013). Among the studies reported in Table 1, Armstrong et al. (2010) is the only one that has investigated IAS 39 from a "capital markets" perspective. However, this study examines the market reaction to IFRS as a whole, and only some of the announcements selected by the authors refer to the adoption of IAS 39.

[Insert Table 1: Papers about international impairment accounting rules and/or earning smoothing in banks.]

In this study, we employ standard event study methodology to investigate the cross-sectional determinants of the price reaction to 13 events related to the impairment rules incorporated in the standard-setting process of IFRS 9 for a sample of 137 listed banks located in 17 European countries for the period between 12 November 2009 and 24 July 2014.

Our main contribution to the literature is twofold. First, we illustrate a novel strategy to capture timely loss recognition, earnings management, and capital management, based on proxies previously employed by the literature. Second, we provide novel evidence on the capital market effects (or lack thereof) of IFRS, with particular reference to new ELM rules, in the European banking industry. This literature is still in its infancy, but we strongly believe it will grow quickly once IFRS 9 loan loss provisions rules are mandatory adopted across Europe and the world. Our findings suggest that the ELM is not perceived to bring about substantial benefits

[1] We are aware that the studies reported in Table 1 do not represent a comprehensive literature review on earnings management in banks or IAS 39. We report the studies that, in our opinion, provide good examples of the importance of the topic we intend to investigate.

as compared to the ILM. While we find evidence that some of the proxies chosen affect the investor reaction to some of the 13 announcements, in most cases stock returns tend to be lower for banks that are likely to engage in earnings and capital management, contrary to the hypothesis that the ELM should benefit international investors. Besides, bootstrap analysis supports the hypothesis that significant results for some of the events and some of the proxies may be due to over-sized tests for the sample period under examination. These findings are relevant because they shed light on a recent claim that the quality of financial reporting bears at best second-order effects on firm value (Zimmerman, 2013): overall, it appears that the new loan loss provisions rules had little or no effect on bank stock prices.

The rest of the paper is structured as follows. Section 2 provides a description of the institutional background by comparing the key features of the impairment accounting rules under IAS 39 and IFRS 9 and by describing the IFRS 9 adoption events related to impairment accounting rules. Section 3 describes our methodology and sample. Section 4 discusses the results. Finally, section 5 concludes the paper.

2. Regulatory background

2.1. The incurred loss model (IAS 39) and the expected loss model (IFRS 9)

During the financial crisis 2007-2009, an international debate arose about the role of IAS 39 – *Financial Instruments: Recognition and Measurement* and its implications for financial reporting and financial stability (Barth and Landsman, 2010; Gebhardt and Novotny-Farkas, 2011; Laux 2012; O'Hanlon, 2013). Criticism against IAS 39 has emphasized its high complexity and difficult application which might be detrimental to the level of transparency of financial statements (Financial Crisis Advisory Group, 2009; Fiechter, 2011; Paananen, 2012). Much of the international debate has targeted the ILM, which requires recognizing only losses incurred as of the balance sheet date, leading to delayed recognition of future expected losses (Gebhardt and Novotny-Farkas, 2011; O'Hanlon, 2013). Delayed recognition of large credit losses has been identified by regulators and policymakers as a weakness in international accounting standards that has exacerbated the severity and length of the financial crisis (IASB, 2014). These concerns are particularly intense for banks, because they are more sensitive to loan loss provisioning rules.

Consistent with these concerns, regulators and policy makers have solicited the IASB to consider a forward-looking loan loss method (Financial Stability Forum, 2009, Basel Committee on Banking Supervisor, 2009; Financial Crisis Advisory Group, 2009). Due to political pressure, in 2009 the IASB proposed to replace IAS 39 with IFRS 9. Following calls for a global solution, the IASB started to work with the Financial Accounting Standards Board

(FASB) for a convergent approach in impairment accounting rules. However, convergence efforts have been unsuccessful. The IASB decided to split the IFRS 9 project into three different phases (1. *Classification and measurement*, 2. *Impairment* and 3. *Hedge accounting*). The final version of IFRS 9 was issued on July 24, 2014 and it is mandatory effective for annual periods beginning on or after 1 January 2018.

IASB argues that one of biggest improvements of the new accounting rules for financial instruments is related to the impairment model (IASB, 2014). This chapter was issued in the final version of IFRS 9, on July 24, 2014, and it provides an alternative impairment method that should address investors' concerns about previous version of IAS 39: IFRS 9 requires companies to recognize expected losses from when they first lend money or invest in financial instruments. The threshold for recognizing lifetime expected losses (expected shortfalls in contractual cash flows) is lower than for IAS 39: rather than delaying provisioning until financial assets are close to default, the new IFRS 9 demands recognition when the credit quality of the financial instrument deteriorates significantly since the initial recognition. Table 2 reports the main differences in the impairment models according to IFRS 9 and IAS 39.

[Insert Table 2: IFRS 9 versus IAS 39: main differences in impairment rules]

2.2. IFRS 9 impairment event dates

We identify the timeline of events related to IFRS 9 impairment rules considering the news and press release related to public announcements provided by the IASB and European Financial Reporting Advisory Group (EFRAG). These announcements are strictly related to the standard-setting process of IFRS 9 for Europe, because under EU accounting regulation each IFRS has to be approved through a specific procedure called "endorsement mechanism", which requires that EFRAG provides recommendations to the European Commission for the endorsement of IFRS in Europe.

In Table 3, we report the events associated with IFRS 9 that refer to changes in impairment accounting rules. To control for potentially confounding events, we use the LEXIS/NEXIS database to scour concurrent capital markets news during each event window. In line with recent literature (Joos and Leung, 2013; Prather-Kinsey and Tanyi, 2014), for each event we evaluate the potential impact of the event on the likelihood of adopting the new impairment accounting rules.[2] Two events are likely to have decreased such likelihood:

1) In April 8, 2011, the comment letter issued by EFRAG did not support the proposals to set a "floor" that reflects credit losses expected to occur within the foreseeable

[2] For events related impairment rules until December 2012, we maintain the same interpretation as in Onali and Ginesti (2014). The authors also report a confounding event on August 5, 2011, when S&P downgrade U.S. sovereign credit rating.

future, and urged the IASB to clarify some points of the revised impairment model prior to finalizing the standard;

2) On August 4, 2011, IASB published a proposal in the form of ED to defer the mandatory effective date of IFRS 9 from 1 January 2013 to January 2015.

[Insert Table 3: IFRS 9 impairment rules events]

3. Methodology and sample characteristics

3.1 Proxies for timely loss recognition, earnings management and capital management

The first step of our analysis consists of defining the proxies to capture timely-loss recognition, earnings management, and capital management. To this end, we examine the recent accounting and finance literature and focus on nine proxies, three for each variable:

- *Timely loss recognition*: banks dislike reporting small losses, and they may manipulate accounts to report small earnings instead (Beatty et al., 2002; Paananen et al., 2012). The three proxies: *SMALL_INC*, *SMALL_DEC*, and *SMALL_ROA*, are indicator variables based on the return on asset (ROA) and the first-difference of ROA ($\Delta ROA = ROA_t - ROA_{t-1}$). Small decreases or increases in ROA (that is, *SMALL_INC* or *SMALL_DEC* is equal to one) or small earnings (*SMALL_ROA*) suggest that the recognition of losses may have been delayed. A more detailed definition of these three proxies is reported in Table 4.
- *Earnings management*: our proxies are based on an adaptation of the accounting-based definitions of discretionary loan loss provisions provided by Gebhardt and Novotny-Farkas (2011) and Norden and Stoian (2014), and on a market-based measure introduced by Bae et al. (2006). The first measure, *DISCR_NI*, is based on the following model for bank *i* (for a total of *N* banks) and year *t*:

$$NI_{it} = \beta_1 + \beta_2 NPL_{it-1} + \beta_3 \Delta NPL_{it} + \beta_4 \Delta LOANS_{it} + \varepsilon_{it}$$

$$DISCR\_NI = \frac{\varepsilon_{it}}{\overline{NI_{it}}} \quad (1)$$

Where *NI* stands for net income, *NPL* for non-performing (impaired) loans, *LOANS* stands for gross loans, ε_{it} is an error term, and $\overline{NI_{it}}$ stands for the linear prediction of *NI* (the fitted values from the regression). We estimate (1) with bank fixed-effects and we cluster the standard errors at the bank level. Intuitively, the larger *DISCR_NI*, the larger the discretionary component of loan loss provisions, and therefore net income, that does *not* depend on non-performing loans and gross loans. The second measure is based on the standard deviation of earnings before loan loss provisions and taxes minus the standard deviation of earnings, scaled by total assets:

$$VOLE\_RATIO = \frac{SD(EBT_{it} + LLP_{it}) - SD(E_{it})}{TA} \quad (2)$$

Where *LLP* stands for loan loss provisions, *E* stands for earnings and *EBT* stands for earnings before tax. Finally, our third measure for earnings management is the monthly skewness of daily stock returns, *SKEW_RET*. Because of the tendency for firms which engage in earnings management to delay the disclosure of bad news, *SKEW_RET* tends to be positive for these firms (Bae et al., 2006). The higher *SKEW_RET*, the higher the degree of earnings management.[3]

- *Capital management:* our first two proxies for capital management are similar to *DISCR_NI*. However, in this case the dependent variables for the main regressions are the total regulatory capital ratio (*TCR*), or the ratio of total regulatory capital divided by risk-weighted assets, and the tier 1 capital ratio, or the ratio of tier 1 capital divided by risk-weighted assets:[4]

$$TCR_{it} = \beta_1 + \beta_2 NPL_{it-1} + \beta_3 \Delta NPL_{it} + \beta_4 \Delta LOANS_{it} + \varepsilon_{it}$$
$$DISCR\_TCR = \frac{\varepsilon_{it}}{TCR_{it}} \quad (3)$$

$$TIER1_{it} = \beta_1 + \beta_2 NPL_{it-1} + \beta_3 \Delta NPL_{it} + \beta_4 \Delta LOANS_{it} + \varepsilon_{it}$$
$$DISCR\_TIER1 = \frac{\varepsilon_{it}}{TIER1_{it}} \quad (4)$$

Our third proxy, *CLOSE_REG* is a binary variable constructed on the basis of the proximity of these *TCR* and *TIER1* to the regulatory minimum: banks that are closer to these minimum requirements have stronger incentives to engage in capital management activities. Proximity to the minimum regulatory ratios can, for example, affect a bank's capital structure and dividend payout ratio (Gropp and Heider, 2010; Onali, 2014).

Table 4 reports a brief description of each of our nine proxies. The proxies *DISCR_NI*, *VOLE_RATIO*, *SKEW_RET*, *DISCR_TCR* and *DISCR_TIER1* are winsorized at the 1st and 99th percentile.

[Insert Table 4: Measures of timely loss recognition, earnings management, and capital management.]

3.2 Indices calculation

Because of the lack of homogeneity across studies in the proxies used for timely loss recognition, earnings management, and capital management, it is hard to compare previous

[3] For low levels of earnings management, *SKEW_RET* can also take on negative values.
[4] Because our sample covers the period from 2009 to 2014, these ratios are defined as per Basel II accord requirements.

findings (Leuz et al., 2003; Kanagaretnam et al., 2005; Dechow et al., 2010; Filip and Raffournier, 2014; Cohen et al., 2014). We create three indices, one for each variable considered, on the basis of the nine proxies described in section 3.1. For each category, we define the index as the sum of three binary variables constructed on the basis of the three proxies within each category. While we do not argue that these measures are perfect, they help increase the robustness of our results. We propose these measures as a first stab to reduce the numbers of proxies used by different studies in a European setting.

For timely loss recognition, we define *INDEX_LOSS* as follows:

$$INDEX\_LOSS_{it} = SMALL\_INC_{it} + SMALL\_ROA_{it} + SMALL\_DEC_{it} \quad (5)$$

A higher value for *INDEX_LOSS* indicates less timely loss recognition.

For earnings management and capital management, we construct six binary variables based on whether the values of each of the proxy for bank *i* is above or below the median value over the sample period. Then, we aggregate each of the three binary variables within each category. For earnings management, we have:

$$INDEX\_E_{it} = H\_DISCR\_NI_{it} + H\_VOLE\_RATIO_{it} + H\_SKEW\_RET_{it} \quad (6)$$

Where *H_DISCR_NI* is a dummy variable equal to one if *DISCR_NI* is larger than the sample median, and zero otherwise. *H_VOLE_RATIO* and *H_SKEW_RET* are constructed in a similar manner, using *VOLE_RATIO* and *SKEW_RET* instead of *DISCR_NI*.

A higher value for *INDEX_E* indicates a higher degree of earnings management.

For capital management, we construct the following variable:

$$INDEX\_CAP_{it} = H\_DISCR\_TCR_{it} + H\_DISCR\_TIER1_{it} + CLOSE\_REG_{it} \quad (7)$$

Where *H_DISCR_TCR* (*H_DISCR_TIER*) is a dummy variable equal to one if *DISCR_TCR* (*H_DISCR_TIER1*) is larger than the sample median, and zero otherwise, and *CLOSE_REG* is the same dummy variable defined in Table 4.

A higher value for *INDEX_CAP* indicates a higher degree of capital management.

In a preliminary analysis to test the validity of these indices as proxies of timely loss recognition, earnings management, and capital management, we run a probit model where the three indices are the independent variables and the dependent variable is a dummy equal to one if the bank is located in Germany, and zero otherwise. German banks are allowed to build hidden reserves under Section 340f of the German Commercial Code, and these reserves are

generally employed as an earnings management device (Bornemann et al., 2012). Therefore, German banks are, *ceteris paribus*, more likely to engage in earnings smoothing than banks located in other countries. All three indices enter the regression with positive and significant coefficients, consistent with the view that these indices correlate positively with earnings smoothing. We also run a probit regression where the dependent variable is a dummy variable if the bank is located in a code law country (either the UK or Ireland, in our dataset), and the independent variables are the three indices. Banks which are domiciled in code law countries are less likely to engage in earnings management (Leuz et al., 2003). Consistent with expectations, all three indices enter the regression with a negative coefficient, although the coefficient on *INDEX_CAP* is insignificant.

3.3 Estimating abnormal returns

In line with literature that employs event study methodology to assess the market reaction to changes in accounting rules (Armstrong et al., 2010; Joos and Leung, 2013), we estimate for each of the 13 events the Market Adjusted Return (MAR), or the difference between the three-day cumulative log return centered on the event date for each the 137 bank stocks in our sample and the corresponding three-day cumulative log return of our proxy for the market portfolio. The MAR for the two events that we believe to have had a negative effect on the likelihood of IFRS 9 adoption are multiplied by minus one (Armstrong et al., 2010). For comparison with recent empirical studies on the market reaction to IFRS, we choose the DJ STOXX Global 1800 Index Ex Europe which includes the 1,800 world largest international firms excluding the European firms in the index (to avoid including large European banks in our benchmark). This proxy enables us to allow for macroeconomic events that have affected the global economy as a whole. Moreover, we also employ an alternative benchmark, a value-weighted portfolio of 5,069 non-financial listed firms domiciled in the 17 European countries under investigation. This proxy captures macroeconomic events that are specific to Europe.

While there is currently no consensus in the literature with regard to which is the best model for estimating abnormal returns, using the market-adjusted model has several advantages in comparison with other models such as, for example, the market model (MacKinlay, 1997):[5] it is not affected by bias due to significant events in the estimation period (Fuller et al., 2002),[6] and for short event-windows models it produces estimates for the abnormal returns which have comparable precision to that of the market model (Brown and Warner, 1980). We focus on a three-day event window based on recent literature (Joos and Leung, 2013; Prather-Kinsey and Tanyi, 2014), because such a short event window reduces the impact of potentially concurrent

[5] The market-adjusted model can be seen as a specific case of the market model, where the intercept of the regression is set equal to zero and the slope coefficient (the beta) is set equal to one.
[6] Because our sample period covers part of the global financial crisis and all the period related to the Eurozone sovereign debt crisis, the probability of significant events in the estimation period is very high.

events (which become more likely as the event window widens). Moreover, using a three-day window, rather than simply the event dates, avoids bias generated by different trading hours across the 17 stock markets under investigation (which may cause certain events to be priced only the day *after* the event in some exchanges but not others), and allows for possible information leakages occurred on the day before the event is released to the public.

3.4 The cross-sectional determinants of abnormal returns

To investigate the impact of timely loss recognition, earnings management, and capital management on our proxy for abnormal returns, the MAR, we run bank-level regressions where the dependent variable is the MAR for each bank *i* and event *e*:

$$MAR_{ie} = \beta_1 + \beta_2 X_{ie} + \beta_3 SMB_e + \beta_4 HML_e + \beta_5 WML_e + \sum_{d=2}^{5} D_d + \varepsilon_{ie} \qquad (8)$$

Where X is one of the nine proxies or one of the three indices described in section 3.1 and section 3.2; *SMB* and *HML*, are the size and book-to-market Fama and French (1993) factors, respectively, while *WML* is the Carhart (1997) momentum factor;[7] and are D_d are four weekday dummies that allow for day-of-the-week effects (Kaplanski and Levy, 2010), where d = 2, 3, 4, and 5 and:

$D_d = 1$ if $d = 2$ for Tuesdays, $d = 3$ for Wednesdays, $d = 4$ for Thursdays, and $d = 5$ for Fridays.

$D_d = 0$ otherwise.

In all our estimations, we include bank fixed effects and cluster the standard errors at the bank level. To reduce the effect of multicollinearity, which increases the probability of insignificant coefficients, we run 12 regressions according to equation (8), one for each of our proxies for timely loss recognition, earnings management, and capital management. We also run a regression with all of the three indices, for a total of 13 regressions.

To increase the robustness of our results, we also run the regressions without bank fixed effects, with double-clustering of the standard errors at both country and event level (Petersen, 2009).

Finally, to explore whether certain events were more important than others, we also run the regressions separately for each event. In this case, of course, we omit Fama-French and Carhart factors and weekday dummies as they do not vary across panels.

[7] We have download these three factors for Europe from Kenneth French website: http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/Data_Library/f-f_developed.html

3.5 Sample characteristics

We start our sample selection by selecting from Bankscope all listed banks from 17 European countries that are mandatory IFRS adopters and that have been used in recent empirical studies (Chen et al., 2013).[8] This selection criterion leads to 394 banks, but for 19 of these banks even basic financial data, such as total assets and net income, is missing. For the remaining 375 banks, we collect closing daily stock prices from Datastream. Data on the regulatory capital ratios is available for 242 banks only. After excluding banks for which there is unavailable data for any of the proxies listed in Table 4, we obtain a sample of 137 banks: 6 from Austria, 2 from Belgium, 20 from Denmark, 3 from Finland, 9 from France, 14 from Germany, 3 from Greece, 1 from Ireland, 20 from Italy, 4 from Luxembourg, 3 from the Netherlands, 15 from Norway, 4 from Portugal, 5 from Spain, 3 from Sweden, 18 from Switzerland, and 7 from the United Kingdom.

Table 5 reports the descriptive statistics for our proxies of timely loss recognition, earnings management, and capital management.

[Insert Table 5: Descriptive statistics for proxies of timely loss recognition, earnings management, and capital management.]

4. Results

4.1 Main results

As a preliminary analysis, we estimate the average 3-day MAR for the 13 events for all 137 banks in our sample. When using as a benchmark the DJ STOXX Global 1800 Index Ex Europe, we obtain an average 3-day MAR equal to 0.8%, insignificant at any conventional level (with a t-statistic equal to 1.746). When using as a benchmark the value-weighted portfolio of 5,069 non-financial firms, we obtain an even smaller average 3-day MAR (0.5%), insignificant at any conventional level (with a t-statistic equal to 1.631). As shown in Figure 1-i and 1-ii, most of the positive reaction occurs for event two, related to a joint proposal by IASB and FASB on credit impairment of loans and other financial assets.

Are these results actually a consequence of the new international impairment rules? To answer this question, we explore more in detail how our proxies of timely loss recognition, earnings management and capital management explain the cross-section of the MAR. This investigation is necessary because the simple univariate analysis reported above cannot separate

[8] To avoid sample selection bias due to attrition, we include banks that were delisted over the sample period.

the effect of the global financial crisis and of the Eurozone sovereign debt crisis from that of IFRS announcements, because all these phenomena can impose a system-wide impact (Prather-Kinsey and Tanyi, 2014). A deeper analysis than a univariate analysis of the MAR is necessary to pinpoint the drivers of the MAR.

We report our main results, using DJ STOXX Global 1800 Index Ex Europe as a benchmark, in Table 6. Panel A reports the results for the regressions with bank fixed effects and clustering of the standard errors at the bank level. Panel B reports the results for the regressions without bank fixed effects and clustering of the standard error at both the country and event level. All of our proxies enter our regressions with insignificant coefficients, regardless of the specification considered. Since the total number of observations is 1,319, it is unlikely that this lack of significance is due to a small number of observations. The results for the regressions using the value-weighted portfolio of 5,069 European non-financial firms are reported in Table 7, Panel A and Panel B. Apart from the coefficient for *SMALL_INC* in Panel A, all coefficients are insignificant, corroborating the results reported in Table 6.

[Insert Table 6: Main regression results (benchmark: DJ STOXX Global 1800 Index Ex Europe).]

[Insert Table 7: Main regression results (benchmark: value-weighted portfolio of 5,069 European non-financial firms).]

In Table 8 we report the results, using the DJ STOXX Global 1800 Index Ex Europe as proxy for the market portfolio, for regressions run separately for each of the 13 events and each proxy for timely loss recognition, earnings management, and capital management. The specification of each regression is the same as that for equation (8), although the Fama-French and Carhart factors and weekday dummies are excluded because they do not vary across banks, with Huber-White robust standard errors. Blank cells indicate lack of significance at the 5% level.

Only for five cases out of 156 do we obtain significant and positive coefficients for any of the 12 proxies and 13 events considered. In 18 cases, we obtain instead significant and negative coefficients.

Some of the events under examination seem to bear little or impact on our proxies of timely loss recognition, earnings management, and capital management. For events one, seven, eight, and twelve none of the coefficients is significant at the 5% level. Seven events (number two, three, five, six, nine, ten, and eleven) are associated with three or less significant coefficients. Only two events have more than three proxies with significant coefficients (of either sign):

events number four and thirteen. For event number four, five proxies have positive and significant coefficients (as said above, these are the only five cases with significant and positive coefficients), and one has a negative and significant coefficient. For event number thirteen, which effectively represents the issuance of IFRS 9, there are four significant (and negative) coefficients.

The coefficients for the proxies *INDEX_LOSS*, *SMALL_ROA*, *VOLE_RATIO*, and *SKEW_RET* are insignificant for all thirteen events. The proxies for which there is the largest number of significant results are the four proxies for capital management (four events are associated with significant coefficients). For *CLOSE_REG*, there are negative and significant coefficients for four of the 13 events. For the other three proxies for capital management (*INDEX_CAP*, *DISCR_TCR*, and *DISCR_TIER1*), three coefficients are significantly negative, while one is significantly positive. For the proxies on timely loss recognition the results seem to suggest a negative reaction (if any): the coefficients on *SMALL_INC* and *SMALL_DEC* are significant only for two events (for each variable) and in three out of four instances these coefficients are negative. There are only three cases with significant coefficients for proxies of earnings management, and two of them are related to negative coefficients. Overall, these results provide very little support to the view that the new international accounting regulation on impairment of loans and financial assets will decrease problems related to earnings and capital management.

When we repeat the estimations using as a benchmark the value-weighted portfolio of 5,069, the results are virtually the same (see Table 9).

[Insert Table 8: Results for separate regressions for each event (benchmark: DJ STOXX Global 1800 Index Ex Europe).]

[Insert Table 9: Results for separate regressions for each event (benchmark: value-weighted portfolio of 5,069 European non-financial firms).]

We run further regressions to test the robustness of our results. All of these results are available upon request from the authors.

4.2 Robustness tests

First, we address the potential impact of confounding events and the lack of coverage in international media. We run our main regressions after excluding the sixth event, because of a potential confounding event on 5th August 2011. This results in a drop in the number of observations from 1,319 to 1,227. The results are virtually the same as those reported in Table 6

and Table 7, for both Panel A and Panel B. We then repeat this analysis after excluding the 10th event (9th July 2013), because we did not find international media coverage for this event, and therefore change in the MAR may be related to events unrelated to the new impairment accounting rules. The number of observations is reduced to 1,204, but the results remain unaltered.

Second, we employ bootstrap simulations to understand whether the lack of significant results is due to an under-sized test for the sample period under examination (that is, the probability of rejecting the null hypothesis when it is actually true is less than the theoretical value). We repeat the estimation of the regressions for 250 randomly selected non-overlapping non-event trading days over the sample period from 3 July, 2009, to 5 August, 2014 (1328 trading days). Since on these days there were no events related to the adoption of IFRS 9 impairment rules, the null hypothesis is true. We find evidence of *over-rejection* of the null hypothesis for all of the 12 proxies. In particular, regardless of what proxy we employ as a benchmark, we find that the type I error for the 5% significance level ranges between 9.6% (for *DISCR_NI*) and 32% (for *DISCR_TIER1*). Therefore, it is likely that the significant coefficients reported in Table 8 for some of the proxies are due to an *over-sized* test over the sample period considered, leading to a rejection of the null hypothesis in cases when it is actually true.

Third, we examine whether our results could be a byproduct of misspecification of the model employed to measure abnormal returns (the market-adjusted model), or an invalid proxy for the market portfolio. We estimate the 3-day MAR around Mario Draghi's speech on July 26, 2012, during which he pledged to do "whatever it takes" to support the Euro. If our method to measure abnormal returns is correct, we should expect that banks in Eurozone countries should have reacted more positively to this event than banks in non-Eurozone countries (Denmark, Norway, Sweden, Switzerland, and United Kingdom). We examine the differential stock price reaction of banks in the Eurozone to those outside of the Eurozone. In particular, we run a two-sample t-test with unequal variances to test whether the average 3-day MAR for Eurozone countries is significantly larger than for non-Eurozone countries. The results support this hypothesis, regardless of which benchmark is used.[9]

Finally, we repeat our main analysis with the variables *DISCR_NI*, *VOLE_RATIO*, *SKEW_RET*, *DISCR_TCR* and *DISCR_TIER1* as they are (without winsorizing them at the 1st and 99th percentile). The results are virtually the same as those reported in Tables 6 and 7.

[9] If we employ the DJ STOXX Global 1800 Index Ex Europe as a benchmark, we have an average 3-day MAR for the Eurozone (non-Eurozone) banks equal to 1.83% (0.54%), with a t-statistic equal to 4.897. If we use the portfolio of 5,069 European non-financial firms, we obtain an average 3-day MAR for the Eurozone (non-Eurozone) banks equal to 0.65% (–0.63%), with a t-statistic equal to 4.839.

5. Conclusions

While a vigorous international debate has solicited IASB to change the accounting rules for loan loss provisioning, the capital markets consequences of adopting the new ELM incorporated in IFRS 9 are not obvious. The ELM provides the preparers of financial statements with more discretion than the ILM (as defined by IAS 39) in terms of the timing of loan loss recognition, which should lead to a more timely recognition of loan losses, but could also make it easier to manipulate earnings and regulatory capital ratios.

This study is a first attempt to understand whether changes in international accounting standards for loan loss provisions is an appropriate "cure" to restore investors' confidence in banks' balance sheets. We employ event study methodology to investigate whether the ELM has been perceived by international investors as value-enhancing. We test this hypothesis on a sample of 137 European listed banks domiciled in countries that adopt IFRS, encompassing 13 announcements related to the standard-setting process of IFRS 9 developed in the period 2009-2014.

We provide evidence that the abnormal returns related to adoption events for the IFRS 9 impairment rules are substantially uncorrelated with a number of proxies for timely loss recognition, earnings management, and capital management. These findings suggest that the ELM is not perceived by international investors to increase the timeliness of loan loss recognition and to decrease earnings and capital management by European banks. Unlike prior event studies on the IFRS adoption (such as Armstrong et al., 2010; Joos and Leung, 2013; Onali and Ginesti, 2014; Prather-Kinsey and Tanyi, 2014), our findings do not support the hypothesis that the expected improvement in accounting standards bears a substantial impact on firm value, consistent with the recent claim that external financial reporting imposes only second-order effects on firm value (Zimmerman, 2013).

Interpreting our results, however, requires some caution. First, there is still some degree of uncertainty among investors regarding the impact of the IFRS 9 impairment accounting rules on the reported earnings of European listed banks. To address this issue, European policymakers need to intervene to help international investors understand these new rules, by providing additional guidance. Second, our findings warrant further research to investigate in greater depth the potential negative externalities of the ELM. This research will be possible, however, only once the implementation of IFRS 9 rules has taken place.

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Table 1: Papers about international impairment accounting rules and/or earning smoothing in banks.

Paper	Topic	Method	Sample composition and period	Main findings
O'Hanlon (2013)	Effect of IAS 39 on timeliness of loan-loss provisioning by UK banks	Regression analysis	212 UK Banks Period: 2000-2009	Overall, the adoption of IAS 39 does not result in a less timely loan loss provisions
Bushman and Williams (2012)	Effect of discretion in loan loss provisioning on bank risk taking	Regression analysis	Banks from 27 countries[10] Period: 1995-2006	Forward-looking loan loss provisioning reduces (increases) the impact of market discipline if its purpose is earnings smoothing (timely loan loss recognition).
Paananen et al. (2012)	Determinants and the capital market consequences of banks' decision to reclassify financial assets under IAS 39	Regression analysis	95 banks from 38 countries Period: 2007-2008	Reclassifying banks have lower capital adequacy ratios, lower profitability and higher earnings volatility than non-reclassifying banks
Beatty and Liao (2011)	Effect of delayed expected loss recognition under incurred loss model on bank lending	Regression analysis	1,270 US banks	Delayed loss recognition is negatively correlated with reductions in lending during recessionary periods
Gebhardt and Novotny-Farkas (2011)	Effect of IAS 39 on earnings management in banks	Regression analysis	90 European banks Period: 2000-2007	Incurred loss model reduces income smoothing and delays recognition of future expected losses
Armstrong et al. (2010)	Investor reaction to the adoption of IFRS (and especially IAS 39)	Event study	3,265 European listed firms Period: 2002-2005	Incrementally positive reaction for firms with lower pre-adoption information quality, which is more pronounced for banks
Bouvatier and Lepetit (2008)	Effect of provisioning system on credit fluctuations	Regression analysis	186 European Banks Period: 1992-2004	Non-discretionary loan loss provisions amplify credit fluctuation. Discretionary loan loss provisions do not affect credit fluctuations

[10] Bushman and Williams (2012) report the number of bank-year observations (3091) but do not report the number of banks in the sample.

Table 1: Papers about international impairment accounting rules and/or earning smoothing in banks. (*continued*)				
Kanagaretnam et al. (2005)	Bank loan loss provisions	Regression analysis	705 US banks Period: 1980-1997	Bank managers' propensity to signal their private information vary cross-sectionally. Propensity to signal correlates negatively with bank size and positively with earnings variability, future investment opportunities, and degree of income smoothing
Laeven and Majnoni (2003)	Relation between bank loan loss provisions and business cycle	Regression analysis	1,419 banks from 44 countries Period: 1988-1999	Loan loss provisioning is pro-cyclical and can exacerbate the impact of the economic cycle on banks' profitability and capital position
Beatty et al. (2002)	Earnings smoothing to avoid earnings declines	Regression analysis	707 publicly held US banks and 1,160 private banks Period: 1993-2009	Public banks report fewer small decreases in earnings than private banks and longer string sequences of earnings increases
Ahmed et al. (1999)	Capital management as a determinant of loan loss provisioning	Regression analysis	113 US Banks Period: 1986-1995	Overall, capital management is an important determinant of loan loss provisions. Earnings management is not an important determinant of loan loss provisions

Table 2: IFRS 9 versus IAS 39: main impairment requirements.

IFRS 9 (*Forward-looking impairment model*)	**IAS 39** (*Incurred-loss impairment model*)
Impairment recognition: *Three-stage model. Stage 1 (12 month-Expected Credit Losses - ELM). It includes financial instruments with high credit quality (that have not had a significant increase in credit risk since initial recognition or that have low credit risk at the reporting date). The amount of impairment provision is determined based on 12- month Expected Loss (EL).* *Stage 2 (ELM). It includes financial instruments that have had a significant increase in credit risk since the initial recognition. The amount of impairment provision has to be determined based on ELM relating to the remaining time to maturity.* *Stage 3 (ELM). It includes financial assets that have objective evidence of impairment at the reporting date. Lifetime ELM are recognized*. [*IFRS 9, project summary 2014*]	**Impairment recognition:** *At each balance sheet date, entities have to consider the "objective evidence of impairment" when assessing whether a financial asset or group of financial assets is to be impaired. The loss events that signify impairment must be observable. Expected losses as a result of events expected to occur after the balance sheet date may not be recognized.* [*IAS 39, paragraph 59*] *A list of non-exclusive 'trigger events' that are indicators of objective evidence that a financial asset or group of assets is impaired are provided by the standard.* [*IAS 39, paragraph 59*]
Measurement: *The measurement of impairment is the same regardless of the type of instrument held and how it is classified.* *[IFRS 9 project summary 2014]*	**Measurement:** *The measurement of impairment depends on how a financial instrument is classified.* *[IAS 39, paragraph 59]*
Disclosure: *More disclosure to assist investors and analysts to understand the amount of expected credit losses and credit risk, such as the information that explain the expected credit loss calculations, the measurement of expected credit losses and the assessment of changes in credit risk.* [*IFRS 9, project summary 2014*]	**Disclosure:** *Disclosures related to IAS 39 are also prescribed in other standards (e.g. IFRS 7).*

Table 3: IFRS 9 impairment rules events.

Date	Event	Probability of adoption
12 November 2009	IASB issues IFRS 9 (completing the first phase - Classification and Measurement).	*Increase*
13 January 2011	IASB and FASB publish a joint proposal on credit impairment of loans and other financial assets managed in an open portfolio.	*Increase*
31 January 2011	IASB and FASB publish a joint proposal on accounting for impairment of financial assets such as loans managed in an open portfolio.	*Increase*
4 March 2011	EFRAG recommends that IASB and FASB agree on a joint timetable to finalize an accounting standard for financial instruments.	*Increase*
8 April 2011	EFRAG releases the final comment letter to IASB in response to Supplementary Document Financial Instruments: Impairment issued on 31 January 2011.	*Decrease*
4 August 2011	IASB proposes adjustments to the effective date of IFRS 9 from January 1, 2013 to January 1, 2015.	*Decrease*
16 December 2011	IASB releases amendments that defer the mandatory effective date from 1 January 2013 to 1 January 2015.	*Increase*
27 January 2012	IASB and FASB announce their intention to continue to develop a common approach on the impairment model.	*Increase*
7 March 2013	IASB publishes revised proposals for loan-loss provisioning.	*Increase*
9 July 2013	EFRAG publishes its comment letter in response to IASB Exposure Draft - Financial Instruments: Expected Credit Losses.	*Increase*
22 July 2013	EFRAG reports on the findings of the field-test on IASB Exposure Draft- Financial Instruments: Expected Credit Losses. The field-test serves also as an input to the European Commission's endorsement process.	*Increase*
10 July 2014	The president of ECB, Mario Draghi, during the IFRS Foundation Trustees' meeting in London, urges policy makers in Europe to progress swiftly in adopting of IFRS 9.	*Increase*
24 July 2014	IASB issues the final version of IFRS 9.	*Increase*

Table 4: Measures of timely loss recognition, earnings management, and capital management.

Proxy	Calculation of the proxy	Variable proxied	Related literature
SMALL_INC	1 if $0 < \Delta ROA < 0.0008$ and 0 otherwise	Timely loss recognition	Adapted from Beatty et al. (2002)
SMALL_DEC	1 if $-0.0008 < \Delta ROA < 0$ and 0 otherwise	Timely loss recognition	Adapted from Beatty et al. (2002)
SMALL_ROA	1 if $-0.0005 < ROA < 0.0005$ and 0 otherwise	Timely loss recognition	Adapted from Paananen et al. (2012)
DISCR_NI	See equation (1)	Earnings management	Adapted from Gebhardt and Novotny-Farkas (2011). and Norden and Stoian (2013)
VOLE_RATIO	Standard deviation of earnings before loan loss provisions and tax minus standard deviation of net income scaled by total assets – see equation (2)	Earnings management	Adapted from Norden and Stoian (2014)
SKEW_RET	Skewness of stock returns	Earnings management	Adapted from Bae et al. (2006)
DISCR_TCR	See equation (3)	Capital management	Adapted from Gebhardt and Novotny-Farkas (2011). and Norden and Stoian (2014)
DISCR_TIER1	See equation (4)	Capital management	Adapted from Gebhardt and Novotny-Farkas (2011). and Norden and Stoian (2014)
CLOSE_REG	1 if - either TCR $\leq$ 10% - or TIER 1 ratio $\leq$ 6% and 0 otherwise	Capital management	Adapted from Gropp and Heider (2010) and Onali (2014)

Table 5. Descriptive statistics for proxies of timely loss recognition, earnings management, and capital management.

Statistics	**INDEX_LOSS**	**SMALL_INC**	**SMALL_DEC**	**SMALL_ROA**
Mean	0.7900	0.1516	0.1205	0.5178
St. Dev.	0.7005	0.3588	0.3257	0.4999
Minimum	0.0000	0.0000	0.0000	0.0000
Maximum	2.0000	1.0000	1.0000	1.0000
Statistics	**INDEX_E**	**DISCR_NI**	**VOLE_RATIO**	**SKEW_RET**
Mean	1.4951	-1.0608	-0.0003	0.0333
St. Dev.	0.8372	8.7453	0.0048	1.2898
Minimum	0.0000	-64.8253	-0.0280	-4.9043
Maximum	3.0000	23.7924	0.0212	4.1921
Statistics	**INDEX_CAP**	**DISCR_TCR**	**DISCR_TIER1**	**CLOSE_REG**
Mean	1.0637	0.0731	0.1027	0.0644
St. Dev.	0.8791	0.3962	0.4939	0.2456
Minimum	0.0000	-0.5353	-0.6646	0.0000
Maximum	2.0000	2.0327	2.1802	1.0000

Table 6. Main regression results (benchmark: DJ STOXX Global 1800 Index Ex Europe).

PANEL A: *With bank fixed effects and standard errors clustered at the bank level*													
Dependent variable: 3-day MAR	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
INDEX_LOSS	-0.001												-0.002
	(-0.484)												(-0.551)
SMALL_INC		0.004											
		(1.584)											
SMALL_DEC			-0.005										
			(-1.215)										
SMALL_ROA				-0.002									
				(-0.597)									
INDEX_E					0.003								0.003
					(1.528)								(1.604)
DISCR_NI						0.000							
						(0.663)							
VOLE_RATIO							-2.259						
							(-1.205)						
SKEW_RET								0.001					
								(0.721)					
INDEX_CAP									0.005				0.005
									(1.339)				(1.389)
DISCR_TCR										0.014			
										(1.208)			
DISCR_TIER1											0.013		
											(1.052)		
CLOSE_REG												-0.007	
												(-1.595)	
Constant	-0.001	-0.002	-0.001	-0.001	-0.006*	-0.002	-0.003	-0.002	-0.007*	-0.003	-0.004	-0.002	-0.010**
	(-0.253)	(-0.941)	(-0.440)	(-0.207)	(-1.760)	(-0.664)	(-1.103)	(-0.760)	(-1.658)	(-1.211)	(-1.216)	(-0.595)	(-2.280)
Weekday dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fama-French and Carhart factors	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bank Fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,319	1,319	1,319	1,319	1,319	1,319	1,319	1,319	1,319	1,319	1,319	1,319	1,319
R-squared	0.061	0.061	0.062	0.061	0.062	0.061	0.063	0.061	0.063	0.063	0.063	0.061	0.064
Number of banks	137	137	137	137	137	137	137	137	137	137	137	137	137

Table 6. Main regression results (benchmark: DJ STOXX Global 1800 Index Ex Europe). (*continued*)

PANEL B: *Without bank fixed effects and standard errors double-clustered at the country and event level*													
Dependent variable: 3-day MAR	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
INDEX_LOSS	-0.000												-0.001
	(-0.211)												(-0.285)
SMALL_INC		-0.002											
		(-0.564)											
SMALL_DEC			0.000										
			(0.028)										
SMALL_ROA				-0.000									
				(-0.051)									
INDEX_E					0.001								0.001
					(0.576)								(0.581)
DISCR_NI						0.000							
						(0.581)							
VOLE_RATIO							-0.363						
							(-1.270)						
SKEW_RET								0.000					
								(0.268)					
INDEX_CAP									-0.001				-0.001
									(-0.422)				(-0.440)
DISCR_TCR										-0.002			
										(-0.622)			
DISCR_TIER1											-0.002		
											(-0.661)		
CLOSE_REG												-0.004	
												(-0.517)	
Constant	-0.001	-0.002	-0.002	-0.002	-0.003	-0.002	-0.002	-0.002	-0.001	-0.002	-0.001	-0.002	-0.002
	(-0.225)	(-0.285)	(-0.312)	(-0.277)	(-0.492)	(-0.286)	(-0.336)	(-0.322)	(-0.174)	(-0.284)	(-0.277)	(-0.285)	(-0.274)
Weekday dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fama-French and Carhart factors	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bank Fixed effects	No	No	No	No	No	No	No	No	No	No	No	No	No
Observations	1,319	1,319	1,319	1,319	1,319	1,319	1,319	1,319	1,319	1,319	1,319	1,319	1,319
R-squared	0.055	0.055	0.055	0.055	0.055	0.055	0.056	0.055	0.055	0.055	0.055	0.055	0.055
Number of banks	137	137	137	137	137	137	137	137	137	137	137	137	137

Table 7. Main regression results (benchmark: value-weighted portfolio of 5,069 European non-financial firms).

PANEL A: *With bank fixed effects and standard errors clustered at the bank level*													
Dependent variable: 3-day MAR	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
INDEX_LOSS	-0.000												-0.000
	(-0.100)												(-0.164)
SMALL_INC		0.007***											
		(2.915)											
SMALL_DEC			-0.005										
			(-1.273)										
SMALL_ROA				-0.002									
				(-0.494)									
INDEX_E					0.002								0.003
					(1.482)								(1.537)
DISCR_NI						0.000							
						(0.825)							
VOLE_RATIO							-2.332						
							(-1.249)						
SKEW_RET								0.001					
								(0.538)					
INDEX_CAP									0.005				0.006
									(1.563)				(1.608)
DISCR_TCR										0.017			
										(1.398)			
DISCR_TIER1											0.015		
											(1.231)		
CLOSE_REG												-0.008*	
												(-1.863)	
Constant	0.003	0.002	0.003	0.004	-0.001	0.003	0.002	0.003	-0.003	0.001	0.001	0.003	-0.007
	(0.809)	(0.749)	(1.216)	(1.068)	(-0.261)	(1.090)	(0.805)	(1.043)	(-0.763)	(0.477)	(0.302)	(1.186)	(-1.538)
Weekday dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fama-French and Carhart factors	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bank Fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,319	1,319	1,319	1,319	1,319	1,319	1,319	1,319	1,319	1,319	1,319	1,319	1,319
R-squared	0.031	0.033	0.032	0.031	0.032	0.031	0.033	0.031	0.034	0.035	0.034	0.032	0.035
Number of banks	137	137	137	137	137	137	137	137	137	137	137	137	137

Table 7. Main regression results (benchmark: value-weighted portfolio of 5,069 European non-financial firms). (*continued*)

PANEL B: *Without bank fixed effects and standard errors double-clustered at the country and event level*													
Dependent variable: 3-day MAR	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
INDEX_LOSS	0.000												-0.000
	(0.006)												(-0.064)
SMALL_INC		-0.000											
		(-0.010)											
SMALL_DEC			0.000										
			(0.031)										
SMALL_ROA				-0.000									
				(-0.004)									
INDEX_E					0.001								0.001
					(0.454)								(0.447)
DISCR_NI						0.000							
						(0.665)							
VOLE_RATIO							-0.389						
							(-1.326)						
SKEW_RET								-0.000					
								(-0.076)					
INDEX_CAP									-0.001				-0.001
									(-0.428)				(-0.421)
DISCR_TCR										-0.002			
										(-0.585)			
DISCR_TIER1											-0.002		
											(-0.616)		
CLOSE_REG												-0.005	
												(-0.648)	
Constant	0.003	0.003	0.003	0.003	0.002	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.002
	(0.485)	(0.560)	(0.544)	(0.503)	(0.283)	(0.599)	(0.554)	(0.566)	(0.721)	(0.609)	(0.619)	(0.611)	(0.410)
Weekday dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fama-French and Carhart factors	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bank Fixed effects	No	No	No	No	No	No	No	No	No	No	No	No	No
Observations	1,319	1,319	1,319	1,319	1,319	1,319	1,319	1,319	1,319	1,319	1,319	1,319	1,319
R-squared	0.029	0.029	0.029	0.029	0.029	0.029	0.030	0.029	0.029	0.029	0.029	0.029	0.029
Number of banks	137	137	137	137	137	137	137	137	137	137	137	137	137

Table 8. Results for separate regressions for each event (benchmark: DJ STOXX Global 1800 Index Ex Europe).

Event number	Obs.ns	*INDEX_LOSS*	*SMALL_INC*	*SMALL_DEC*	*SMALL_ROA*	*INDEX_E*	*DISCR_NI*	*VOLE_RATIO*	*SKEW_RET*	*INDEX_CAP*	*DISCR_TCR*	*DISCR_TIER1*	*CLOSE_REG*
1	88												
2	93									-3.698*	-3.548*	-4.197*	
3	93									-3.567*	-2.449*	-2.369*	
4	93		1.993*				2.236*			2.727*	2.505*	2.462*	-2.48*
5	94					-2.57*							
6	92						-2.872*						
7	92												
8	98												
9	114			-3.059*									-3.711*
10	115												-2.06*
11	115			-2.075*									-1.995*
12	116												
13	116		-3.13*							-2.266*	-3.025*	-3.147*	
Total Observations	1319												

Notes: All regressions include Fama-French and Carhart factors, and weekday dummies. Standard errors are heteroskedasticity-robust (Huber-White sandwich estimator).
* denotes significance at the 5% level. Black cells indicate that the coefficient on that particular proxy is insignificant at the 5% level.

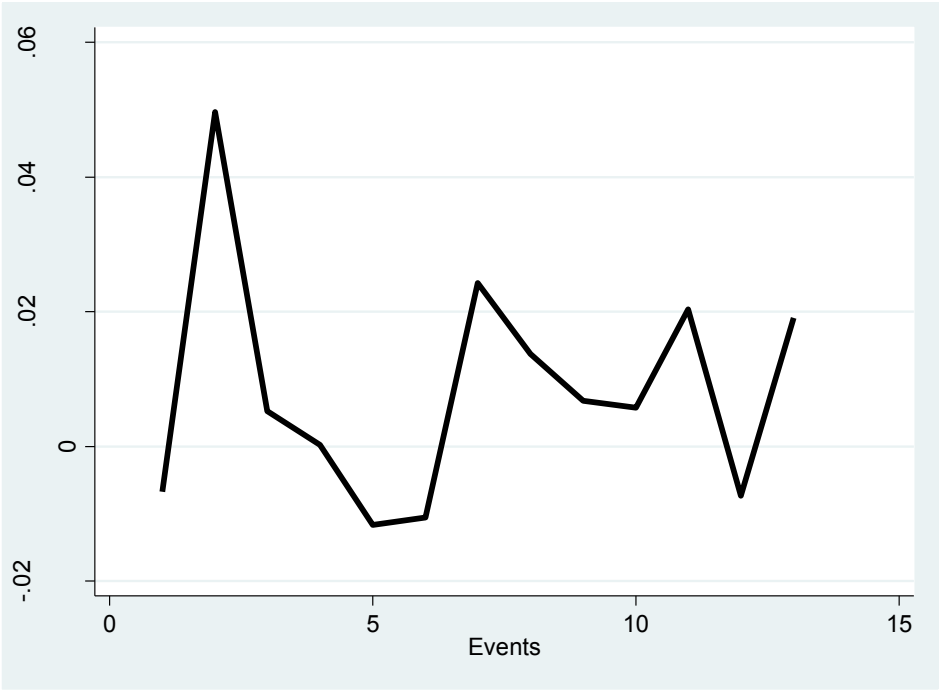
Table 9. Results for separate regressions for each event (benchmark: value-weighted portfolio of 5,069 European non-financial firms).

Event number	Obs.ns	*INDEX_LOSS*	*SMALL_INC*	*SMALL_DEC*	*SMALL_ROA*	*INDEX_E*	*DISCR_NI*	*VOLE_RATIO*	*SKEW_RET*	*INDEX_CAP*	*DISCR_TCR*	*DISCR_TIER1*	*CLOSE_REG*
1	88												
2	93									-3.787*	-3.566*	-4.233*	
3	93									-3.568*	-2.449*	-2.369*	
4	93		2.083*				2.23*			2.671*	2.48*	2.425*	-2.499*
5	94					-2.525*							
6	92						-2.878*						
7	92												
8	98												
9	114			-3.057*									-3.71*
10	115												-2.069*
11	115			-2.1*									-2.004*
12	116												
13	116		-3.13*							-2.266*	-3.025*	-3.147*	
Total Observations	1319												

Notes: All regressions include Fama-French and Carhart factors, and weekday dummies. Standard errors are heteroskedasticity-robust (Huber-White sandwich estimator).
* denotes significance at the 5% level. Black cells indicate that the coefficient on that particular proxy is insignificant at the 5% level.

Figure 1. Average 3-day MAR for each event (sample: 137 banks).

i) Benchmark: DJ STOXX Global 1800 Index Ex Europe.



ii) Benchmark: Value-weighted portfolio of 5,069 non-financial firms.