How Have Markets Reacted to Financial Sector Reforms? An Event-Study Analysis*

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Abstract

We analyze the reaction of stock returns and CDS spreads of banks from Europe and the United States to major regulatory reforms in the years 2009 until 2011, employing an event study analysis. We study common international events such as the Basel Process, reforms enacted at the national level, as well as spillovers from national reforms to other countries. We find that markets reacted most strongly to structural reforms, such as the announcement of the US Volcker Rule, the UK Vickers Regime, and the Swiss too-big-to-fail regulation. In case of the Volcker Rule and the Vickers reform, we show in a cross sectional analysis that investment banks were significantly higher affected than pure deposit taking banks when these structural reforms were announced. However, we also observe that both the Volcker and the Vickers reforms were watered down over time. Overall, market reactions suggest that the impact of reforms on banks' safety and profitability, as well as on bail-out expectations has been minor.

Keywords: Financial Sector Reform; Financial Stability; Dodd-Frank Act; Basel III; Event Study.

JEL-Classification: G21, G28.

1 Introduction

Following the breakdown of Lehman Brothers, the near-collapse of large parts of the financial system and unprecedented support measures from the public sector and central banks, the leaders of the G20 agreed on the need for a radical overhaul of the financial system. Since the London summit in March 2009 and the creation of the Financial Stability Board, the supervisory community has been extremely busy proposing, negotiating and enacting a wide range of new regulations both at the national and international level.[1] The most prominent reform streams such as Basel III or the US Dodd-Frank Act have been the subject of passionate discussions far beyond specialist circles and the target of intense criticism in particular from the industry organizations, who warned of overregulation, the danger of a credit crunch and of strangulation of the incipient economic recovery.[2] Given all this noise, it seems only natural to ask if the reforms have had any measurable effects. It also seems natural to address this question to the markets rather than the involved and interested parties.

In this paper, we therefore investigate the following questions: How have financial markets reacted to regulatory events? In particular, have bank equity valuations registered the new rules, and have the prices of banks' credit risk been affected by regulatory measures? Apart from the overall effects, we are also interested in the heterogeneity of financial market reactions across various types of regulatory interventions and different types of banks. Most importantly, we ask whether measures aimed at addressing the too-big-to-fail problem affected systemic banks differently than other banks.

To answer these questions we analyze the reaction of equity returns and CDS spreads following major regulatory steps of the banking industry during the period January 2009 till October 2011 within the framework of an event study. We consider both national events, such as the Dodd-Frank Act, and international regulatory events, as the modification of the Basel Accord ("Basel III"). We also take possible spillover effects of national announcements on other countries' banking systems into account.

[1] See, e. g., Financial Stability Board (2009) for an overview of the different reform areas and regulatory work streams.

[2] See, for example, the impact studies by the Institute of International Finance (2010a,b).

Direct or indirect spillovers may occur either because the relative competitive position of banking centers is affected or because announcements in one country may serve as a signal of regulatory changes to come in other countries.

As in any event study, the timing of events is of the essence. Regulatory reforms are usually discussed over an extended period of time; there are consultations with the affected parties, negotiations between political parties and country representatives, which make a certain outcome more or less likely. Financial market participants are, of course, aware of these procedures even if these happen behind closed doors, and they form outcome expectations, which they update regularly. If a financial reform were a completely predictable process, markets would be able to price in the outcome perfectly and the only real event would be the initial announcement of the reform. However, this is not the way the process of negotiating regulatory reforms works. The process produces compromises and surprises, tougher or weaker regulation than initially expected and therefore new information for markets. One crucial question is how to filter out the important events, the "real" news. Ideally, we would like to identify those events where truly new information (about content or probabilities) became available to markets. We propose to use the editorial process of major financial newspapers as a filtering device: a reform is classified as a first-order event if it was published on the front page of a major newspaper.[3] The objective function of an editor is to give larger prominence to news that people are interested in because they learn new information. For instance, the enactment of a law that has long been agreed on will not make page one. But the deal that paved the way for the law is more likely to make page one. This is the type of event we want to capture.

The methodology of event studies is well-suited to analyze the valuation effects of regulatory events. A number of earlier studies deal with the effects of regulatory reforms on bank equity valuation. Eyssell and Arshadi (1990) analyze the effects of the imposition of risk-based capital requirements under Basel I. Spiegel and Yamori (2003) measure the effect of two regulatory reforms in Japan on bank equity values. Some recent studies deal with support measures in the current financial crisis. Veronesi and Zingales (2010) study the effect of the Paulson Plan on the valuation

[3]This procedure is common in the literature, see, for example, O'Hara and Shaw (1990) who base the timing of events on the publication date in the Wallstreet Journal.

of banks relative to non-financial firms. Fratianni and Marchionne (2009) consider fiscal support measures in the banking sector during the recent financial crisis. Finally, a number of papers focus on the problem of systemic banks. O'Hara and Shaw (1990) investigate the effect of the US Comptroller of the Currency's announcement in 1984 that some banks were "too big to fail." Ueda and Weder di Mauro (2010) include both bail-out (like Bear Stearns) and non-bail-out events (like Lehman) in their study of the changes in the implicit state subsidy to large banks in the US and in Europe.[4] To our knowledge, we are the first to investigate the aftermath of the financial crisis and the impact of the reform process on market valuations.

We find that financial markets reacted most strongly to structural bank reforms enacted at the national level. For instance, bank CDS spreads rose sharply at the first announcement of the Volcker rule. Moreover, the Volcker rule had spillover effects to banks in the United Kingdom, but not to continental Europe. Interestingly, the watering down of this rule in subsequent negotiations is also reflected in market prices. In the United Kingdom, the strongest market reaction resulted from the postponement of the Vickers reforms, which raised banks' stock returns and lowered CDS spreads. Significant market reactions were also observed in response to the Swiss too-big-to-fail regulation, which lowered CDS spreads, but had no effect on stock returns. In contrast, international events, such as the G20 meetings and, in particular, the Basel III negotiations hardly show any significant results. The overall conclusion is that the market impact of most financial sector reforms has been minor, apart from a small number of reforms aiming at changing the structure of banking sectors fundamentally.

The paper is organized as follows. In Section 2, we develop a number of hypotheses regarding the expected effect of financial sector reforms. In Section 3, we present the employed estimation and testing procedures, as well as our procedure of identifying relevant regulatory events. Section 4 contains the estimation results. For each identified financial reform, we thoroughly describe the reform process and the informational content of announcements. Then we discuss the effects on stock returns and CDS spreads. We first consider country-level reforms before turning to interna-

[4]Other studies have analyzed the effect of too-big-to-fail guarantees on banks' risk-taking. See Boyd and Gertler (1994), Schnabel (2009), and Gropp, Hakenes, and Schnabel (2011).

tional reform streams. In the concluding Section 5, we discuss the implications of our research.

2 Financial Sector Reforms and Market Valuations

We first describe our approach of identifying relevant regulatory events. Then we discuss how equity returns and CDS spreads are expected to be affected by different types of reforms.

At the country level, we investigate the major financial reforms of the United States, United Kingdom, Germany, and Switzerland because these countries were the ones carrying out the boldest regulatory reforms. At the international level, we consider the negotiations on the regulatory framework of Basel III and the G20 summits. We first identified the relevant reform streams by examining the bulletins of national and international regulatory institutions as well as governmental notifications regarding country-specific and G20-based regulatory issues. Having identified the most important financial reform streams, we conducted an electronic full-text search on the basis of international reputable newspapers.[5] An event is classified as a first-order event if its content was published on the front page of the considered newspaper.[6] We started our search long before the actual event in order to identify all related occurrences that may have affected reform expectations. This implies that each regulatory event in our study consists of a whole set of sub-events. If all relevant sub-events can be identified, one can hope to identify the full effect of the reform in question even if the reform was taking place in several steps (see Lamdin, 2001). A broad overview of identified regulatory events is given in Table 1. The corresponding sub-events are discussed in the results section.

The spectrum of regulatory events shown in Table 1 is quite diverse. However, they share the goal to increase the resilience of the financial system, for example by raising capital buffers, reducing leverage, decreasing systemic relevance, and increasing

[5]Our major source was the Financial Times, which is published in different editions: UK, US, and Europe. In case of doubt, we consulted additional local newspapers of the respective country.

[6]Note that some reform issues changed their names during the legislation process, e.g. the "Dodd-Frank Act" was initially known as the "Wall Street Reform and Consumer Protection Act."

Table 1: Overview of regulatory events

Regulatory Events	**Country**
Dodd-Frank Act	USA
Volcker Rule	USA
Too-big-to-fail regulation	Switzerland
Bank tax, Bank restructuring law	Germany
Prohibition of short sales	Germany
Regulatory framework of Vickers Commission	United Kingdom
Bank levy	United Kingdom
G 20 summits	International
Basel III	International

resolvability. We now discuss the expected effects of different regulatory measures on equity returns and CDS spreads. This gives us some guidance in the interpretation of the empirical results.

The most important reform streams at the international level aim at increasing bank stability by raising equity buffers and lowering leverage ("Basel III"). Such measures tend to lower CDS spreads, as the probability of default decreases, and to reduce the return on equity, which should be reflected in lower stock prices. The latter prediction hinges on the assumption that bank equity is expensive from the bank perspective. Given the implicit subsidization of bank debt through tax deductibility and government guarantees, this is likely to be the case.[7] For our analysis, this implies that the Basel III reforms generally should be reflected in lower stock returns and lower CDS spreads. A stronger rise in capital requirements for certain bank groups, especially systemic banks, as were introduced in Switzerland and also at the international level, should show up in stronger effects for systemic banks.

A second major goal of financial sector reforms was to tackle the too-big-to-fail problem by increasing the resolvability of systemic banks. Examples are the Dodd-Frank Act containing a resolution procedure for systemic banks, the Vickers Report (especially the ring-fencing approach), and the German restructuring law. Naturally, the effects of such events are expected to be strongest for systemic banks. Moreover, the effect on CDS spreads is expected to be more pronounced than for equity, since

[7]See Admati, DeMarzo, Hellwig, and Pfleiderer (2010) for a detailed discussion of this issue.

creditors are the main beneficiaries of bail-outs. As default becomes more likely, CDS spreads rise. But equity holders are also affected negatively because refinancing costs are likely to increase.

A third instrument are bank levies, as introduced in the United King and Germany. Such taxes lower banks' profitability and therefore tend to lower stock returns. The expected effect on CDS spreads is also negative. Here the effect on equity is expected to be more pronounced. The effect on CDS spreads should be strongest for banks whose distance to default is relatively small. Finally, there are a number of specific instruments, which will be discussed in more detail below.

Any of the described measures may also affect the stability of the entire financial system, rather than just that of individual banks. A more stable financial system would tend to lower CDS spreads. The effect on banks' stock returns is less clear. System effects have to be taken into account in the interpretation of results.

The major challenge in any event study analysis is the identification of "news." This is particularly true for studies of regulatory events, for which there is never an easily identifiable single event date. Essentially, the measured effect comprises only the *unexpected* portion of the total economic effect of the considered reform. A fully anticipated event may have had a substantial effect even if the abnormal return at the day of the announcement is equal to zero. In order to correctly interpret the effect of a reform, it is, therefore, important to judge the informational content of each sub-event of a particular reform. This is done by carefully screening the corresponding newspaper articles. Very often, journalists give a judgment on whether an event was considered surprising or not. It should be noted, however, that the fact that an event makes it to the front page already suggests that there is something "new" in the event. We then check, as suggested by Lamdin (2001), whether the truly surprising events had stronger effects. Moreover, all events carefully have to be interpreted relative to market expectations. If a reform is weaker than had been expected initially, it may well be that the sign of the effect is reversed.

3 Empirical Methodology

3.1 Estimation Procedure

Our analysis is based on market prices (equity and CDS) of the largest banks from the United States, United Kingdom, Germany, and Switzerland. We investigate the biggest banks from each of those countries in terms of their market capitalization.[8] With regard to equity, we use daily returns of stock prices, based on their closing auctions. For the credit side, we use day-to day differences in mid-prices of five-year senior credit default swap spreads (CDS spreads) on an end-of-day basis. We calculate "normal" stock returns on the basis of the market model.[9] We use different benchmark indices for different countries. For the United States, we use the S&P500 index, for the United Kingdom the FTSE100, for Germany the DAX30, and for Switzerland the SMI (Swiss market index).

The empirical model consists of a system of equations, in which bank returns are regressed on a constant, the return of a market index, and dummy variables that are equal to 1 at the respective event date. The left-hand-side variable is the daily return of the stock of bank j at time t, $j = 1, ...J, t = 1, ...T$. R_{Mt} is the return of the market portfolio (proxied by a benchmark index for each country, respectively).

[8]For the United States, we use the ten largest banks. For the other countries, we use the maximum number of banks listed on the respective stock exchange.

[9]Empirical research has shown that the use of the market model yields very robust results, such that the use of more complicated models of stock returns seems unnecessary (see Campbell, Lo, and Mackinlay, 1996). In the robustness section, we also display results for other estimation models.

$$
\begin{aligned}
R_{1t} = \quad & \alpha_1 + \beta_1 R_{Mt} + \sum_{n=T-1}^{T+1} \tau_{1n} D_{1nt} + \epsilon_{1t} \\
\ldots & \\
R_{jt} = \quad & \alpha_j + \beta_j R_{Mt} + \sum_{n=T-1}^{T+1} \tau_{jn} D_{jnt} + \epsilon_{jt} \\
\ldots & \\
R_{Jt} = \quad & \alpha_J + \beta_J R_{Mt} + \sum_{n=T-1}^{T+1} \tau_{Jn} D_{Jnt} + \epsilon_{Jt}
\end{aligned}
$$

Note that estimation coefficients differ across assets: α_j and β_j denote the bank-specific intercept and the beta factor attached to the market return, respectively. D_{jnt} indicates a vector of dummy variables for the events listed below. For each event, there are three dummies: a pre-event dummy, which is equal to 1 one day before the event $T-1$ (and zero otherwise) to capture anticipation effects; an event dummy that takes the value one on the day of the event T (and zero otherwise); and finally a post-event dummy, which is equal to 1 one day after the event $T+1$ (and zero otherwise). When the estimation period includes other dates identified as event dates, such events are "dummied out" by including the respective event dummies in the regression; the estimation window is widened accordingly. In order to check the robustness of our results, we use two different estimation windows. The estimation window begins 80 or 140 trading days before the event and ends one day prior to the event date. The estimated coefficient τ_{jn} on the dummies delivers the abnormal return for each individual bank stock for a given day in the event window. These coefficients are tested separately and in different aggregated manners for significance.

We estimate this system of regressions in a SUR framework (*seemingly unrelated regressions*, Zellner, 1962) instead of employing the traditional two-stage procedure for each individual asset, as described by Campbell, Lo, and Mackinlay (1996). This is the preferred method of dealing with "clustered" events, which affect many firms at the same time.[10]

[10] Cf. Binder (1985) and Karafiath (1988).

Contrary to bank stock returns, we model normal returns of banks' CDS spreads on the basis of the constant returns model (as in Ueda and Weder di Mauro, 2010). The only difference, compared to the market model above, consists in the fact that no market portfolio is used for the estimation of normal returns (see Campbell, Lo, and Mackinlay, 1996):

$$\Delta CDS_{1t} = \mu_1 + \sum_{n=T-1}^{T+1} \tau_{1n} D_{1nt} + \epsilon_{1t}$$

$$\dots$$

$$\Delta CDS_{jt} = \mu_j + \sum_{n=T-1}^{T+1} \tau_{jn} D_{jnt} + \epsilon_{jt}$$

$$\dots$$

$$\Delta CDS_{Jt} = \mu_J + \sum_{n=T-1}^{T+1} \tau_{Jn} D_{Jnt} + \epsilon_{Jt},$$

where ΔCDS_{jt} is the first difference of CDS spreads, and μ_j denotes the mean of first differences of bank j within the estimation window. Otherwise, the estimation procedure is the same as for stock returns.

3.2 Testing

The estimated abnormal returns can be used to carry out a number of different tests. In the regression tables below, we present significance tests for the average abnormal return across banks on the event day T. In a SUR framework, it is straightforward to run such tests, taking into account contemporaneous cross correlations across stocks. We also tested for anticipation effects by considering average abnormal returns on day $T-1$. In addition, we present significance tests for the average cumulated return across banks over several event days (T and $T+1$). Moreover, we carried out various joint significance tests, either for single event days across banks, or for cumulated returns over several event days. Significance tests for individual banks can be instructive if different banks show differing reactions to an event. Results of anticipation effects and of cumulated returns are only displayed in the tables if they

turn out to be significant. Finally, one can test for the significance of the overall cumulated effect of a reform by adding average abnormal returns over all sub-events corresponding to a reform in question.

A Note on Power Event studies of regulatory reforms may suffer from low power. For example, an imprecise timing of events reduces the power of significance tests, i. e. raises the type II error, implying that one may not be able to reject the null hypothesis of no effect when the true effect is nonzero. (Note that short-run anticipation is captured by the pre-event dummies.)

In the estimation procedure, we can raise the power of significance tests by using daily return data, using the broadest sample of banks available, using short event windows (one or two days), and varying the length of the estimation window. These factors have been shown to increase the power of significance tests in event studies (see MacKinlay, 1997). Long event windows lead to a downward bias because they may contain many days without any news. Moreover, the shorter the event window, the less likely is the occurrence of other confounding events. In addition, we check directly whether other events not related to the considered reform took place at the same time. This becomes an issue at the time of the Greek debt crisis. Averaging may reduce the power of tests because positive and negative effects may compensate each other. This would, for example, be the case if a reform benefits some banks and harms others, which could on average lead to a zero effect. This problem can be dealt with in a cross-sectional analysis where abnormal returns are related to bank characteristics, such as size or business model.

4 Results

We now present our empirical results, starting with national reforms in the United States, United Kingdom, Germany, and Switzerland before discussing international reforms (the Basel III Accord and the G20 summits).

4.1 Reforms in the United States – The Dodd-Frank Act

The Dodd-Frank Act was supposed to be the most sweeping financial reform since the Glass-Steagall Act of 1933. We focus on the four most important parts of the original proposal, which are described in the following. Part of the original provisions were diluted later on.

1. **Systemic risk:** In order to tackle the too-big-to-fail problem, the Dodd-Frank Act empowers the Financial Stability Oversight Council with the right to conduct a structured liquidation procedure. According to this procedure, the Financial Stability Oversight Council is allowed to seize a failing institution and to dismiss the management. In addition, banks are forced to write living wills in order to alleviate the winding up of a bank in case of failure.

2. **Bank tax:** The banking sector was bound to pay an upfront tax with a target volume of 170 billion USD. The tax revenue should be used for failed banks within a liquidation process. Beyond that, large banks and hedge funds were to be charged with an additional tax with a target revenue of 19 billion USD.

3. **Hedge Funds, Private Equity, and Proprietary Trading:** According to the Volcker Rule, banks are banned from conducting proprietary trading as well as from investing in hedge funds and private equity shares. The purpose of this reform part is to prevent banks from participating in risky business that could harm the whole banking sector.

4. **Treatment of Derivatives:** The initial version of Dodd-Frank Act was to force banks to trade their derivatives through central clearing houses instead of trading them bilaterally ("over the counter"). The aim of this step is to increase the transparency of trading. In addition, banks were supposed to spin off parts of their derivatives activities into separately capitalized affiliates.

In reaction to such a reform, we would expect stock returns to drop, as future profits are most likely negatively affected, for example by the bank tax or by the obligation to trade derivatives through central clearing houses rather than OTC contracts, which typically yield much higher margins. On the credit side, the Dodd-Frank

Act should provoke a rise in CDS spreads. The provision of an orderly liquidation process combined with banks' need to write living wills would be expected to reduce bail-out expectations and lead therefore to a higher perception of bank default risk on financial markets. The intention to conduct an orderly liquidation process gains credibility if the regulator separates deposit-taking bank activities from investment banking activities. This was the main goal of the Volcker Rule.

The regression results are shown in Table 2. The first column displays the considered sub-events. The left panel shows the results on equity returns, the right panel those on CDS spreads. We also present unadjusted returns on the given event days. Abnormal returns are calculated either from the market model (stocks), or from the constant returns model (CDS), as was explained above. In the discussion of results, we focus on three sub-events: the date when the Dodd-Frank Act initially entered the house, the presentation of the Volcker-Rule by president Obama, as well as the consensus between democrats and republicans. These are the events that are most likely to yield effects because they constituted real surprises. The events not mentioned explicitly below did not yield significant results, as can be seen from the table.

Dodd-Frank Act initially enters the house on 11th December 2009 [11] The initial legislative proposal, which was brought into the House on 11th December 2009, did not provoke any significant effect on CDS spreads or stock prices. P-values are far away from being significant, and abnormal returns are rather tiny. This result does not change when enlarging the estimation window, which suggests that the reform proposal was considered a paper tiger.

Presentation of the Volcker Rule on 21st January 2010 [12] This changes upon the presentation of the Volcker rule when we see a sharp increase in CDS spreads. Enlarging the event window to the day after the announcement day, abnormal returns attached to CDS spreads rise by roughly 17 basis points. This result remains unchanged after enlarging the estimation window to 140 trading days. The

[11] The Washington Post, Suburban Edition, 12th December 2009, page 1.

[12] The Washington Post, Suburban Edition, 22nd January 2010, page 1.

Table 2: Abnormal returns in the United States for national events

Standard errors in brackets; dependent variable: daily bank stock return (left panel, in %) and first difference in CDS spreads (right panel, in basis points)

		Stock Returns					**CDS Spreads**				
National Regulatory Events			80 trading days		140 trading days			80 trading days		140 trading days	
Dodd-Frank Act	Date	Average Return	Abnormal Return	p-value	Abnormal Return	p-value	Average Return	Abnormal Return	p-value	Abnormal Return	p-value
Reform proposal enters the House	11-Dec-09	0.663	0.144	0.872	0.133	0.914	-1.951	-1.364	0.812	-0.694	0.922
			[0.9]		[1.2]			[5.742]		[7.093]	
Announcement of Volcker Rule	21-Jan-10	-3.060	0.285	0.750	0.132	0.901	7.773	8.473**	0.046	8.502	0.155
			[0.9]		[1.1]			[4.254]		[4.254]	
- Enlarged event window [0-1]		-3.611	0.009	0.994	-0.306	0.840	3.886	17.31***	0.004	17.427**	0.040
			[1.3]		[1.5]			[6.054]		[8.483]	
Proposal of an orderly liquidation process	15-Mar-10	-0.085	-0.096	0.910	-0.182	0.855	0.22	0.252	0.945	0.940	0.851
			[0.8]		[0.9]			[3.655]		[5.006]	
Obama promotes reform issues in NY	22-Apr-10	0.259	-0.144	0.856	-0.064	0.940	5.10	5.354	0.116	5.564	0.166
			[0.8]		[0.9]			[3.409]		[4.016]	
- Enlarged event window [0-1]		0.141	-1.255	0.267	-1.168	0.337	3.87	8.233*	0.090	8.653	0.129
			[1.1]		[1.2]			[4.851]		[5.7]	
Consensuns between parties (dilution)	25-Jun-10	2.825	2.347***	0.001	2.426***	0.002	-4.31	-4.493	0.470	-4.493	0.470
			[0.7]		[0.8]			[6.213]		[6.213]	
Required votes for the bill achieved	12-Jul-10	0.058	1.069	0.105	1.099	0.151	-3.33	-8.673	0.159	-9.036*	0.085
			[0.7]		[0.8]			[6.155]		[5.25]	
Law signed by Obama	21-Jul-10	-0.918	0.722	0.248	-0.683	0.366	-0.94	0.058	0.992	-0.203	0.968
			[0.6]		[0.8]			[6.1]		[5.133]	

Notes: The table shows the results from 36 SUR regressions corresponding to 9 sub-events for stock returns and CDS spreads, respectively, using estimation windows of 80 or 140 trading days. Each system of regressions includes 10 banks. The number of observations ranges between 800 (corresponding to an estimation window of 80 days) and 1400 (140 trading days). All estimations are using balanced samples. If the estimation window contains another sub-event, this is "dummied out" by including the corresponding event dummies (including pre- and post-event dummies). Through an iteration procedure, we make sure that all estimation windows contain exactly the given number of observations (not including other events). The corresponding number of calendar days varies between 105 and 130, depending on weekends, holidays, missing data and other included events. The regressions in the left panel use daily stock returns of banks as dependent variable (in %), those in the right panel use daily first differences in bank CDS spreads (in basis points). The first number column in each panel displays the unadjusted average return of all banks within the sample at the respective event day. "Abnormal returns" refer to the average abnormal return of all banks at the respective event day. The p-values correspond to the test whether the average abnormal return is equal to zero. All regressions include pre-event dummies. The results for an enlarged event window of two days are displayed only if average cumulated abnormal returns are statistically significant. Stars are to be interpreted as follows: *** significant at 1 percent, ** significant at 5 percent, * significant at 10 percent.

significant increase could be explained by the perception of a stricter regulatory stance by the government in the future. The announcement of the Volcker-Rule, which changed the business model of the former investment banks radically, might therefore be interpreted as a wake-up call. In order to examine this impression further, we subdivide our set of US banks into two types, namely investment banks and non-investment banks. Table 4.1 shows that credit prices of investment banks rose enormously at a significance level of 1% while non-investment banks showed rather a minor reaction. The difference in abnormal cds returns of the two types of banks (i.e. abnormal return of investment banks minus abnormal return of non-investment banks) stands at almost 10 basis points and is itself significant at a 1% level. At the first sight we face no significant stock price reaction on the US bank sample. Since the Volcker Rule is expected to harm the business model and to decrease the future profits of the former investment banks perceptibly, we examine again the heterogeneity between investment banks and non-investment banks. A look on table 2.2. shows that investment banks were significantly affected by the announcement of the Volcker Rule whereas non-investment banks were not. The difference in abnormal stock returns of those two groups stands at 3% and shows significance at a 1% level. Those results are strengthening the impression that markets consider the Volcker rule as a serious intention for a stronger regulation of investment banks in the future.

Consensus on 25th of June 2010 [13] The consensus between republicans and democrats diluted the initially intended reform package to the benefit of banks. Both types of bank taxes, as described above, were dropped from the reform package without replacement. The Volcker rule was diluted in the sense that exposures in hedge funds and private equity shares within bank's own accounts were accepted up to a limit of three percent of a bank's capital. Another gain arose to the banking industry from the provision that a significant part of banks' derivatives could be kept in-house and be continued to be conducted in bilateral "over the counter" trades. This implies a boost of bank profitability as margins are typically much higher when clearing houses can be bypassed. However, the entitlement of the Financial Stability Oversight Council to conduct an orderly liquidation process remained unchanged.

[13] Financial Times, U.S. Edition, 26th June 2010, page 1.

The results in Table 2 show that the dilution seems to have benefited mostly equity holders. Abnormal stock returns are positive, large and highly significant, which supports the view that the dilution of the reform increased the profitability of the banking sector. Abnormal returns amount to more than two percent and remains significant after applying different estimation windows. When looking at the credit market, we note that the effects on CDS spreads are negative, supporting the idea of a dilution effect. However, abnormal returns are not statistically significant, which is not surprising since the provision of a structured liquidation process remained unchanged. This leads us to the conclusion that the consensus of the Dodd-Frank Act was in favor of bank profitability and, therefore, affected rather the equity than the credit side. The results of the cross sectional analysis (tables 2.3 and 2.4) are not showing evidence for heterogeneity between investment banks and non-ivestment banks. While credit prices remain almost unchanged, stock returns relaxed significantly for both types of banks with a minor bias in favour of investment banks.

Overall, we do find some significant effects of the initial reform proposals. In particular, the Volcker rule and the orderly liquidation process can be considered a step in the right direction. However, the banking lobby achieved a watering down of several important reform issues, reversing part of the reform process to the benefit of equity holders.

4.2 International Spillover Effects of the Dodd-Frank Act

The Dodd-Frank Act was one of the first and most meaningful regulatory reforms in response to the global financial crisis. Hence, changes in the financial architecture began in the country where the financial crisis had its origin, the United States. Before turning to other national reforms, we therefore test for spillover effects from the United States to the United Kingdom, Germany, and Switzerland. It is well conceivable that reforms in the United States sent a signal to the world that tougher regulation is also going to come about elsewhere. This would also lead to smaller price reactions of future domestic reforms, as market participants would have perceived already the risk of tightened regulation. Hence, we estimate abnormal returns of UK, German and Swiss banks on the event days that we have created for our analysis of the Dodd-Frank Act in the previous section.

Table 2.1: Heterogeneity of abnormal cds-returns at the announcement day of the Volcker Rule

Type of Banks	Abnormal Return	Std. Error	p-value
Investment Banks	**15,425*** **	3.550	**0.000**
Non-Investment Banks	5.494	4.755	0.248
Difference	**9,931*** **	2.678	**0.000**

Table 2.2: Heterogeneity of abnormal stock-returns at the announcement day of the Volcker Rule

Type of Banks	Abnormal Return	Std. Error	p-value
Investment Banks	**-1,868***	0.010	**0.056**
Non-Investment Banks	1.207	0.010	0.210
Difference	**-3,075*** **	0.008	**0.000**

Table 2.3: Heterogeneity of abnormal cds-returns at the announcement day of the consensus

Type of Banks	Abnormal Return	Std. Error	p-value
Investment Banks	-6.020	6.768	0.374
Non-Investment Banks	-3.839	6.243	0.539
Difference	-2.180	3.393	0.520

Table 2.4: Heterogeneity of abnormal stock-returns at the announcement day of the consensus

Type of Banks	Abnormal Return	Std. Error	p-value
Investment Banks	**3,113*** **	0.012	**0.007**
Non-Investment Banks	**2,018*** **	0.006	**0.001**
Difference	1.095	0.010	0.270

Notes: Tables are showing the results of a cross-sectional approach at the given event dates. We calculate the abnormal returns of cds spreads and stock returns by US investment banks and US non-investent banks seperately and in addition to that we evaluate the differences in abnormal returns (i.e. investment banks minus non-investement banks) of both groups. We use the estimation results of the an 80 trading days estimation window and consider the standard event date window t=0. Each table above contains 10 observations. Those are subdivided into two groups, consisting out of 3 investment banks and 7 non-investment banks. Stock returns are given in percentages whereas cds spreads are given in basis points. The p-values correspond to the test whether the average abnormal return of the respective group of banks is equal to zero. Stars are to be interpreted as follows: *** significant at 1 percent, ** significant at 5 percent, * significant at 10 percent.

Table 3: Spillover effects from the United States

Standard errors in brackets; dependent variable: daily bank stock return (left panel, in %) and first difference in CDS spreads (right panel, in basis points)

		Stock Returns				**CDS Spreads**				
Spillover-effects of US regulation			80 trading days		140 trading days			80 trading days		140 trading days	
United Kingdom	Date	Average Return	Abnormal Return	p-value	Abnormal Return	p-value	Average Return	Abnormal Return	p-value	Abnormal Return	p-value
Announcement of Volcker Rule	21-Jan-10	-5.000	-2.2*	0.065	-2.5*	0.064	1.980	1.952	0.330	2.813	0.487
			[1.2]		[1.4]			[2.005]		[4.048]	
Consensuns between parties (dilution)	25-Jun-10	-1.000	0.700	0.497	0.800	0.516	2.130	1.804	0.787	1.832	0.730
			[1.1]		[1.2]			[6.682]		[5.312]	
Law signed by Obama	20-Jul-10	1.000	0.800	0.402	0.900	0.434	1.580	1.599	0.804	1.447	0.789
			[1.1]		[1.1]			[6.467]		[5.395]	
Germany											
Announcement of Volcker Rule	21-Jan-10	-2.000	0.500	0.739	0.100	0.974	3.400	3.792	0.122	4.081	0.164
			[1.4]		[1.8]			[2.453]		[2.935]	
Consensuns between parties (dilution)	25-Jun-10	0.000	1.000	0.282	1.000	0.350	5.780	5.413	0.417	5.486	0.302
			[0.9]		[11.1]			[6.669]		[5.312]	
Law signed by Obama	20-Jul-10	0.000	0.700	0.416	0.800	0.434	0.430	0.230	0.973	0.367	0.945
			[0.9]		[1.5]			[6.689]		[5.320]	
Switzerland											
Announcement of Volcker Rule	21-Jan-10	-0.333	-0.141	0.742	-0.207	0.630	2.725	3.208	0.230	3.330	0.330
			[4.3]		[4.3]			[2.671]		[3.417]	
Consensuns between parties (dilution)	25-Jun-10	-0.165	0.202	0.644	0.194	0.671	0.000	-0.707	0.928	-0.381	0.951
			[4.4]		[4.6]			[7.775]		[6.263]	
Law signed by Obama	20-Jul-10	-0.008	0.282	0.545	0.292	0.632	-6.840	n/a		n/a	
			[0.5]		[0.6]						

Notes: The table shows the results from 35 SUR regressions corresponding to 3 sub-events for stock returns and CDS spreads, respectively, using estimation windows of 80 or 140 trading days. Each system of regressions includes 5 banks (UK and Germany) or 8 banks (Switzerland, stock returns) and 2 banks (Switzerland, CDS spreads). The number of observations ranges between 160 (Switzerland, CDS spreads, estimation window of 80 days) and 1120 (Switzerland, stock returns, 140 trading days). All estimations are using balanced samples. If the estimation window contains another sub-event, this is "dummied out" by including the corresponding event dummies (including pre- and post-event dummies). Through an iteration procedure, we make sure that all estimation windows contain exactly the given number of observations (not including other events). The corresponding number of calendar days varies between 104 and 141, depending on weekends, holidays, missing data and other included events. The regressions in the left panel use daily stock returns of banks as dependent variable (in %), those in the right panel use daily first differences in bank CDS spreads (in basis points). The first number column in each panel displays the unadjusted average return of all banks within the sample at the respective event day. "Abnormal returns" refer to the average abnormal return of all banks at the respective event day. The p-values correspond to the test whether the average abnormal return is equal to zero. All regressions include pre-event dummies. The results for an enlarged event window of two days are displayed only if average cumulated abnormal returns are statistically significant. On 20 July 2010, CDS spreads for Swiss banks were not available. Stars are to be interpreted as follows: *** significant at 1 percent, ** significant at 5 percent, * significant at 10 percent.

As the British banking industry is strongly connected with the US banking industry and since US and UK financial systems are quite similar, the spillover effects to the UK would be expected to be the strongest. This is indeed the case, as is shown in the top panel of Table 5. The announcement of the Volcker rule led to negative abnormal stock returns of about 2 percent, and the effects are statistically significant at the 10 percent level. This suggests that the British banking sector was expected to be reformed in a similar manner as that of the United States. In contrast, as shown by the medium panel of Table 5, there were no such spillover effects to Germany. None of the coefficients turns out to be significant. Similarly, we do not find any spillover effect to Switzerland (see bottom panel of Table 5). Therefore, we conclude that there were international spillover effect from the United States, but only to the country with the most similar financial system, namely the United Kingdom.

4.3 Reforms in the United Kingdom – The Vickers Reform

We now consider reforms in the United Kingdom. The British banking sector is closely interconnected to that of the United States. An important property of the British banking sector, similar to Switzerland, is its size in terms of assets over GDP (see Sachverständigenrat zur Begutachtung der gesamtwirtschaftlichen Entwicklung, 2011). Consequently, there was the perception that there was an urgent need for a tough regulation, ensuring the safety of the system, but also a strong banking lobby with an incentive to maintain the competitiveness of their businesses. The financial sector reform issues of the United Kingdom are going to be divided into two parts. We first consider the recommendations of the Independent Commission on Banking, also known as the Vickers Commission (after its chairman Sir John Vickers), and then the introduction of the British bank tax.

The Recommendations of the Vickers Commission The most important element of the recommendations of the Vickers commission is the "Ringfencing Approach", aiming at the legal separation of the deposit-taking business and investment banking activities. Hence, when an investment banking branch runs into trouble, the regulator is entitled to dissolve it, ideally without any costs for the taxpayer. Banks are obliged to write their living wills in order to assure an orderly liquidation

process. In addition, the "ringfenced" subsidiaries, i. e. deposit-taking and lending business, are subject to enhanced capital requirements. An implementation of such a reform proposal would be expected to lead to the following reactions on financial markets. We expect stock returns to drop, as equity is "expensive" from the viewpoint of banks. Regarding the credit side, the Vickers reform should provoke a rise in CDS spreads. The provision of an orderly liquidation process supported by the Ringfencing Approach and the banks' need to write living wills would be expected to reduce bail-out expectations and lead to a higher perception of bank default risk on financial markets.

As was discussed above, the first major shock to financial markets was the announcement of the Volcker Rule in January 2010, which produced substantial and significant abnormal returns in stock markets. In contrast, the following public debate of work of the Vickers Commission did not lead to any significant results on market prices during the time between its implementation in June 16th 2010 and the end of August 2011.[14] Hence, much of the planned reforms seem to have either been priced in already, or ineffectual.

In contrast, we do see strong effects on 31st August 2011 when the Vickers reform proposals were postponed to the post-election period in 2015. This cannot be described better than it was done by UK Edition of the Financial Times on September 1, 2010 under the page-one headline: "Banks to avoid big shake-up until 2015 - Major reforms unlikely before general election."[15] Table 6 shows a highly significant abnormal return for stocks prices. The average abnormal return for stocks of almost 4% is significant at the 1% level for both estimation windows. This indicates higher expected profits of the British Banking industry in the future. Turning to the credit side, we find a significant drop of CDS spreads when the postponement was announced. This is again in line with our expectations. Table 4.1 shows that investment banks' cds spreads in the UK decreased significantly whereas those from non-investment banks do not contain significant results. Finally, the publication of

[14]Despite the fact that newspapers named a boost in stock prices due to the preliminary and weaker-than-expected equity requirements, we could not find evidence for such an event. See Börsenzeitung 12th April 2011, page 1.

[15]Since the news were spread after financial markets' closing auctions on 31st August (see financial times online edition), we analyze the effects on the markets over the two following days, i. e. the 1st and 2nd September.

Table 4: Abnormal returns in the United Kingdom for national events

Standard errors in brackets; dependent variable: daily bank stock return (left panel, in %) and first difference in CDS spreads (right panel, in basis points)

		Stock Returns					CDS Spreads				
National Regulatory Events			80 trading days		140 trading days			80 trading days		140 trading days	
British Bank Levy	Date	Average Return	Abnormal Return	p-value	Abnormal Return	p-value	Average Return	Abnormal Return	p-value	Abnormal Return	p-value
Intention to impose bank levy	06-Jun-10	-1.057	-1.100	0.342	-1.000	0.437	10.310	5.455	0.432	5.743	0.283
			[1.1]		[1.3]			[6.946]		[5.341]	
Warning of crisis levy	15-Jun-10	1.430	0.700	0.518	0.900	0.488	1.310	0.940	0.892	1.006	0.854
			[1.2]		[1.2]			[6.937]		[5.477]	
Announcement of bank levy	22-Jun-10	0.466	2.1*	0.066	2.1*	0.084	2.030	1.666	0.805	1.732	0.748
			[1.1]		[1.2]			[6.756]		[5.392]	
Vickers Commission for Banking Regulation											
Implementation of Vickers Commission	16-Jun-10	0.667	-0.200	0.875	-0.100	0.958	3.54	3.273	0.638	3.286	0.549
			[1.1]		[1.2]			[6.950]		[5.489]	
Equity requirements proposal	11-Apr-11	0.799	0.800	0.351	1.000	0.319	-1.41	-1.311	0.670	-1.460	0.640
			[0.9]		[1]			[3.077]		[3.125]	
Osborne's pre-approval of ringfencing approach	15-Jun-11	-1.743	-0.600	0.531	-0.500	0.564	4.39	4.143	0.137	4.112	0.201
			[0.9]		[1]			[2.782]		[3.214]	
Postponement of the reform to 2015	31-Aug-11	4.202	3.9***	0.005	3.8***	0.002	-6.35	-7.669	0.108	-7.119*	0.090
			[1.4]		[1.4]			[4.776]		[4.194]	
- Enlarged event window [0-1]		3.683	3.8*	0.059	2.5**	0.025	-7.50	-17.639***	0.009	-16.541***	0.005
			[1.4]		[1.4]			[6.796]		[5.952]	
Publication of Vickers Report	12-Sep-11	-1.547	1.200	0.374	1.000	0.417	15.14	13.738***	0.004	14.356***	0.001
			[1.382]		[1.2]			[4.755]		[4.197]	

Notes: The table shows the results from 32 SUR regressions corresponding to 8 sub-events for stock returns and CDS spreads, respectively, using estimation windows of 80 or 140 trading days. Each system of regressions includes 5 banks. The number of observations ranges between 400 (corresponding to an estimation window of 80 days) and 700 (140 trading days). All estimations are using balanced samples. If the estimation window contains another sub-event, this is "dummied out" by including the corresponding event dummies (including pre- and post-event dummies). Through an iteration procedure, we make sure that all estimation windows contain exactly the given number of observations (not including other events). The corresponding number of calendar days varies between 100 and 125, depending on weekends, holidays, missing data and other included events. The regressions in the left panel use daily stock returns of banks as dependent variable (in %), those in the right panel use daily first differences in bank CDS spreads (in basis points). The first number column in each panel displays the unadjusted average return of all banks within the sample at the respective event day. "Abnormal returns" refer to the average abnormal return of all banks at the respective event day. The p-values correspond to the test whether the average abnormal return is equal to zero. All regressions include pre-event dummies. The results for an enlarged event window of two days are displayed only if average cumulated abnormal returns are statistically significant. Stars are to be interpreted as follows: *** significant at 1 percent, ** significant at 5 percent, * significant at 10 percent.

the Vickers proposal on 12th September 2011 did not hit the markets as initially expected. There is no evidence of a significant change in stock returns, showing that market participants did not expect a decline in bank profits. In contrast, CDS spreads display a significant and strong increase, which is, however, slightly smaller than the decrease caused by the postponement 12 days before. The reason for not observing any heterogeneity between the two groups of banks might be attributable to the fact the difference in cds spreads was already priced in and did not dilute when the the final publication has taken place.

Against the background of a large banking sector and a powerful banking lobby we might conclude the following. After an initial market shake-up triggered by the announcement of the Volcker-Rule, a sigh of relief was reflected in the market prices when the reform proposals were postponed to a date after the succeeding election in 2015. The publication itself, which was actually tougher than expected, raised CDS spreads, but did not lead to comparable effects on stock markets. The postponement lowered the chance of the reforms being implemented, due to a potential change in parliament as well as sufficient time for lobbyists to dilute the Vickers reform, as had been done with the Dodd-Frank Act.

The British Bank Tax The intention of the British bank tax, also known as the crisis tax, was to transfer parts of the financial crisis costs of 2008 to the British banking sector. The revenue of the tax was finally fixed at 2 billion British Pounds. Its tax base was given by banks' liabilities, and its tax rate ranges from 0.05% to 0.075%, depending on the liabilities' maturity. From a bank's perspective, it lowers profits. For this reason, we expect bank stock returns to decrease, as soon as markets consider the implementation of such a tax as serious. CDS spreads, however, are not expected to differ as the ex-post tax has no incentive effects and hence does not affect the probability of default.

We examine the initial announcement on 6th June 2010, the warning, announced by the chancellor of the exchequer on 16th June 2010, and finally the announcement on 22nd June 2010. The results in Table 6 confirm our expectations as credit markets were not affected. There is no significant change in CDS spreads in reaction to any event of the British Bank Tax. In stock markets, we find an abnormal return

Table 4.1: Heterogeneity of abnormal cds-returns at the announcement day of the Vickers Postponement

Type of Banks	Abnormal Return	Std. Error	p-value
Investment Banks	**-14,798****	6.164	**0.016**
Non-Investment Banks	-6.752	4.006	0.092
Difference	**-8,046*****	2.899	**0.006**

Table 4.2: Heterogeneity of abnormal stock returns at the announcement day of the Vickers Postponement

Type of Banks	Abnormal Return	Std. Error	p-value
Investment Banks	**6,497*****	0.021	**0.002**
Non-Investment Banks	**2,092****	0.010	**0.045**
Difference	**4,405*****	0.014	**0.001**

Table 4.3: Heterogeneity of abnormal cds-returns at the announcement day of the Vickers Publication

Type of Banks	Abnormal Return	Std. Error	p-value
Investment Banks	**15,235****	6.079	**0.012**
Non-Investment Banks	**12,741*****	4.039	**0.002**
Difference	2.493	2.855	0.382

Table 4.4: Heterogeneity of abnormal stock returns at the announcement day of the Vickers Publication

Type of Banks	Abnormal Return	Std. Error	p-value
Investment Banks	0.012	0.021	0.552
Non-Investment Banks	0.012	0.010	0.239
Difference	0.000	0.014	0.994

Notes: Tables showing the results of a cross-scetional approach at given event dates. We calculate the abnormal returns of cds spreads and stock returns by UK investment banks and UK non-investent banks seperately and in addition to that we evaluate the differences in abnormal returns (i.e. investment banks minus non-investement banks) of both groups. We use the estimation results of the an 80 trading days estimation window and consider the standard event date window of t=0. Each table above contains 5 observations. Those are subdivided into 2 groups, consistitng out of 2 investment banks and 3 non-investment banks. Stock returns are given in percentages whereas cds spreads are given in basis points. The p-values correspond to the test whether the average abnormal return of the respective group of banks is equal to zero. Stars are to be interpreted as follows: *** significant at 1 percent, ** significant at 5 percent, * significant at 10 percent.

of 2.1% after the bank tax was finally announced as a part of the British budget. This surprising reaction can be understood if one compares the fixed tax revenue of 2 billion British Pounds with the initial target of between 3 billion and 5 billion British Pounds. This dilution must also be seen in perspective with international events, such as the hostile attitude among many of the G20 ministers towards the introduction of a global bank tax.[16] Overall, the UK results suggest that the most surprising news in the market was that reforms were weaker than had been expected initially.

4.4 Reforms in Germany

German Bank Tax and Restructuring Law The German bank tax was introduced to make banks internalize the externalities from bank failure. Its tax base consists of the liabilities of a bank less its insured deposits and equity. The tax rate is increasing in the tax base, ranging from two to four basis points. Hence, larger banks have to pay a higher tax rate than smaller ones. This accounts for the larger systemic risk emanating from larger banks. Hence, the tax has the flavor of a Pigouvian tax. The proceeds from the tax are used to build up a restructuring fund, which is supposed to support banks in financial distress in the future. The target revenue was announced to be 1.2 billion Euro.

The Restructuring Law was constructed to facilitate the resolution of a failed bank. It provides for a two-pillar approach. The first pillar stands for an internal restructuring process, implying that the management has the right to modify payment structures and to stop dividend payouts in order to avert bankruptcy. The second pillar includes a so-called sovereign process. According to that pillar, the German regulator BaFin has the right to restructure a bank in trouble without approval of the management or shareholders. A weakness of the approach is the ambiguity when the regulator is allowed to start the process. So far, the regular was entitled to conduct this process only if the minimum requirements in terms of liquidity were far too low.

[16] Many representatives at the G20 summit in Busan (South Korea) had a strongly negative attitude towards a global bank tax. The idea of installing an internationally harmonized bank tax was discarded at the following G20 summit in Toronto. See Financial Times 7th June 2010 and 28th June 2010.

Table 5: Abnormal returns in Germany for national events

Standard errors in brackets; dependent variable: daily bank stock return (left panel, in %) and first difference in CDS spreads (right panel, in basis points)

		Stock Returns				**CDS Spreads**				
National Regulatory Events			80 trading days		140 trading days			80 trading days		140 trading days	
Bank Tax & Restructuring-Law	Date	Average Return	Abnormal Return	p-value	Abnormal Return	p-value	Average Return	Abnormal Return	p-value	Abnormal Return	p-value
Announcement bank tax	21-Mar-10	-1.000	-0.600	0.595	-0.800	0.620	3.740	3.658	0.139	4.071	0.122
			[1.2]		[1.7]			[2.473]		[2.634]	
Bank tax agreed by cabinet	31-Mar-10	0.000	-0.200	0.844	-0.400	0.816	-5.810	-5.829**	0.018	-5.419**	0.037
			[1.1]		[1.6]			[2.450]		[2.597]	
Agreement on restructuring law	25-Aug-10	-2.000	-0.900	0.379	-0.900	0.381	2.830	2.796	0.676	2.700	0.613
			[1]		[1]			[6.686]		[5.334]	
Law on bank tax/restructuring approved by Bundesrat	26-Nov-10	-1.000	-1.000	0.247	-0.800	0.379	2.530	8.224**	0.034	-5.419	0.140
			[0.9]		[0.9]			[3.875]		[5.762]	
- Enlarged event window [0-1]		-2.000	-2.5*	0.056	-1.500	0.256	0.320	15.274***	0.006	15.844*	0.053
			[1.3]		[1.3]			[6.512]		[8.178]	
Prohibition of Short-Selling											
Announcement by the minister of finance	18-May-10	1.000	-1.300	0.168	-1.400	0.256	-2.21	-2.626	0.658	-2.315	0.628
			[0.9]		[1.2]			[5.933]		[4.784]	

Notes: The table shows the results from 20 SUR regressions corresponding to 5 sub-events for stock returns and CDS spreads, respectively, using estimation windows of 80 or 140 trading days. Each system of regressions includes 5 banks. The number of observations ranges between 400 (corresponding to an estimation window of 80 days) and 700 (140 trading days). All estimations are using balanced samples. If the estimation window contains another sub-event, this is "dummied out" by including the corresponding event dummies (including pre- and post-event dummies). Through an iteration procedure, we make sure that all estimation windows contain exactly the given number of observations (not including other events). The corresponding number of calendar days varies between 110 and 140, depending on weekends, holidays, missing data and other included events. The regressions in the left panel use daily stock returns of banks as dependent variable (in %), those in the right panel use daily first differences in bank CDS spreads (in basis points). The first number column in each panel displays the unadjusted average return of all banks within the sample at the respective event day. "Abnormal returns" refer to the average abnormal return of all banks at the respective event day. The p-values correspond to the test whether the average abnormal return is equal to zero. All regressions include pre-event dummies. The results for an enlarged event window of two days are displayed only if average cumulated abnormal returns are statistically significant. Stars are to be interpreted as follows: *** significant at 1 percent, ** significant at 5 percent, * significant at 10 percent.

We comment on the following event dates: the initial announcement on 21st March 2010 after a coalition meeting,[17] the decision of the cabinet on 31st March to file the bank tax proposal into the legislative process,[18] and the approval of the law, including bank tax and restructuring law, by the German Bundesrat on 26 November 2010. Whereas the first date conveyed a true surprise, the others may be expected to contain less additional information for financial markets. We would expect the tax to decrease banks' profits. There may also be a mild increase in safety due to the build-up of the restructuring fund. The restructuring law, however, should lead to a positive shift in CDS spreads, as markets should perceive a serious probability of an orderly organized default.

The results are shown in the Table 7. The first event date does not contain any significant results, implying that neither stock, nor credit markets were impressed by the announcement of the bank tax. However, looking at the announcement date, we see that the average abnormal returns point in the expected direction. The second event, however, leads to a significant decrease in CDS spreads. This may be explained by the markets perception of the restructuring fund as a buffer for future financial crises. The insignificance of the results on equity markets can be explained as follows. The progressive tax rate is not drastic enough to fulfill the purpose of a Pigouvian tax. The burden on banks is also relatively small. These results support the opinion expressed in the Annual Report of the German Council of Economics Experts (Sachverständigenrat zur Begutachtung der gesamtwirtschaftlichen Entwicklung, 2010), which argued that the bank tax is a step in the right direction without being powerful enough to truly fulfill its objectives. Looking at the approval of the law on 26 November 2010, we find abnormal returns in stock and CDS markets. However, the results in CDS markets are much stronger and show higher statistical significance: CDS spreads rise by roughly 15 when enlarging the event window to two days. Hence, the approval seems to have hit the markets as a surprise. As several states of Germany did not consider their state banks ("Landesbanken") and savings banks ("Sparkassen") as risky institutions, they had tried to stop the plan of the law by calling the mediation committee. Against this background, the surprising approval had an immediate effect on credit markets.

[17] Börsenzeitung, 23rd March 2010, page 1.

[18] Welt Online, 31st March 2010, retrieved on 17th May 2011.

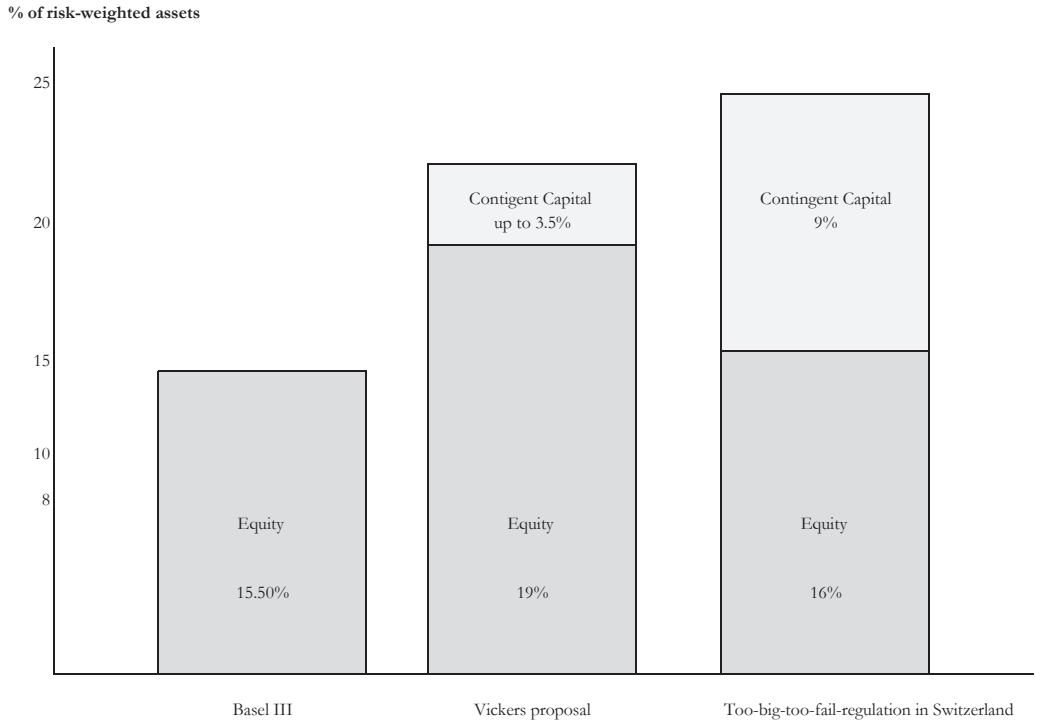
Prohibition of Short-Selling The prohibition of naked short-selling was announced by the finance minister on 18th May 2010. This decision was set in effect by the German BaFin via a temporary injunction and has to be applied for specified stocks of the financial sector as well as for government bonds. Despite its connection to risky bets on decreasing asset prices, it did not provoke any effect on the markets (see last line of Table 7). The reason might be the following. Since banks and hedge funds conducting short sales have access to international subsidiaries and prime brokers, a meaningful prohibition can be achieved only if such a prohibition is enacted globally. For that reason, the German way of such a unilateral reform was criticized by other countries of the European Union.

4.5 Reforms in Switzerland - The Too-Big-to-Fail-Regulation

As mentioned above, Switzerland - similar to the United Kingdom - has a huge banking sector, measured in bank assets over GDP. In particular, the Swiss banking sector is dominated by two supersized banks, namely UBS and Credit Suisse. Comparable to the banking sector in the United Kingdom, the task of the regulator consists in creating a loss-absorbing security cushion in order to enhance systemic stability. This could be achieved by tougher equity requirements. However, an adequate capital buffer for such an oversized system could be very costly for banks and therefore deteriorate the competitiveness of the Swiss banking industry. Such considerations were important factors in the Swiss reforms. We are going to examine the "too-big-to-fail regulation" in Switzerland, which was the Swiss regulatory answer to the subprime crises in 2008. The too-big-to-fail regulation focuses on capital requirements. Compared to the British banking system, the Swiss regulator decided to choose a lower ratio of equity, as is depicted in Figure 1. However, instead of implementing a pure equity buffer, the Swiss regulator decided to complement the equity ratio of 16% (slightly more than Basel III of 15.5%) by an additional 9% of contingent capital. The latter belongs to the class of hybrid capital. Initially issued as debt (bonds), contingent capital is converted into equity, once a particular trigger has been undercut. The advantage of this hybrid instrument consists in the tax deductibility of its interest payments. Hence, contingent capital is less costly than equity and can be considered as an attempt to assure both: a safe and sound

banking system while maintaining competitiveness.

Figure 1: Capital requirements according to Basel III, the Vickers Proposal and the too-big-to-fail regulation in Switzerland



The picture shows the maximum capital ratios for systemic banks according to the Basel III Accord, the Vickers Proposal, and the too big-too-fail regulation in Switzerland. Capital ratios are expressed in percent of risk-weighted assets. For simplicity, we do not distinguish between different equity classes in the picture. The chart has been adapted from the Annual Report of the German Council of Economic Advisors (Sachverständigenrat zur Begutachtung der gesamtwirtschaftlichen Entwicklung, 2011).

We would expect the following effects on market prices. The effect on profits and hence equity depends on by how much the interest rate on contingent capital exceeds the interest rates on ordinary debt, which is going to be replaced by contingent capital. If the market anticipates a noticeable higher funding spread on the contingent capital portion, due to the fact that it bears the risk of being converted, it would lead to smaller future gains and therefore to decreasing stock returns. Regarding the credit side, the expected impact on CDS spreads is negative as an increased capital buffer lowers the probability of a default. This is important because the two large Swiss banks may not only be too big to fail, but also too big to be saved. Therefore, an implicit government guarantee has less credibility in a country where the banking sector is very large compared to GDP. Therefore, we expect the implementation of the too-big-to-fail regulation in Switzerland to lead to a drop in CDS spreads.

Table 6: Abnormal returns in Switzerland for national events

Standard errors in brackets; dependent variable: daily bank stock return (left panel, in %) and first difference in CDS spreads (right panel, in basis points)

		Stock Returns				**CDS Spreads**				
National Regulatory Events			80 trading days		140 trading days			80 trading days		140 trading days	
Too-big-to-fail-Regulation	Date	Average Return	Abnormal Return	p-value	Abnormal Return	p-value	Average Return	Abnormal Return	p-value	Abnormal Return	p-value
Press conference on preliminary report	22-Apr-10	-1.104	-0.400	0.457	-0.186	0.738	9.953	9.78***	0.003	10.004***	0.001
			[5.9]		[5.6]			[3.323]		[3.144]	
- Enlarged event window [0-1]		-0.078	0.061	0.94	0.307	0.694	4.62	9.06*	0.055	9.509**	0.033
			[0.8]		[0.77]			[4.731]		[4.467]	
Swiss Federal Council presents agenda	12-May-10	1.341	0.600	0.288	0.600	0.305	-29.161	-29.669***	0.000	-29.083***	0.000
			[0.6]		[0.6]			[5.232]		[4.456]	
- Enlarged event window [0-1]		0.670	0.646	0.225	0.640	0.351	-11.073	-23.338***	0.002	-22.165***	0.000
			[0.6]		[0.6]			[5.232]		[6.324]	
Final proposal of expert comission	30-Sep-10	-0.481	-0.400	0.285	-0.304	0.585	-7.030	-6.362	0.264	-7.101	0.323
			[0.4]		[0.6]			[5.693]		[5.944]	
Press conference final report	04-Oct-10	-0.477	-0.500	0.924	-0.074	0.894	-3.220	-3.748	0.569	-3.601	0.542
			[0.5]		[0.5]			[6.581]		[5.904]	
First approval by Swiss Federal Council	13-Oct-10	0.587	-0.300	0.493	-0.226	0.609	-5.765	-6.215	0.342	-5.982	0.307
			[0.5]		[0.4]			[6.544]		[5.852]	

Notes: The table shows the results from 20 SUR regressions corresponding to 5 sub-events for stock returns and CDS spreads, respectively, using estimation windows of 80 or 140 trading days. Each system of regressions includes 8 banks (stock returns) or 2 banks (CDS spreads). The number of observations ranges between 160 (CDS spreads, estimation window of 80 days) and 1120 (stock returns, 140 trading days). All estimations are using balanced samples. If the estimation window contains another sub-event, this is "dummied out" by including the corresponding event dummies (including pre- and post-event dummies). Through an iteration procedure, we make sure that all estimation windows contain exactly the given number of observations (not including other events). The corresponding number of calendar days varies between 112 and 144, depending on weekends, holidays, missing data and other included events. The regressions in the left panel use daily stock returns of banks as dependent variable (in %), those in the right panel use daily first differences in bank CDS spreads (in basis points). The first number column in each panel displays the unadjusted average return of all banks within the sample at the respective event day. "Abnormal returns" refer to the average abnormal return of all banks at the respective event day. The p-values correspond to the test whether the average abnormal return is equal to zero. All regressions include pre-event dummies. The results for an enlarged event window of two days are displayed only if average cumulated abnormal returns are statistically significant. Stars are to be interpreted as follows: *** significant at 1 percent, ** significant at 5 percent, * significant at 10 percent.

We first look at the press conference on the preliminary report on 22nd April 2010, then at the presentation of the agenda by the Swiss federal council on 12th May 2010, and finally at three minor dates around the first approval by the Swiss Federal Council on 13th October 2010. Table 8 shows that the Swiss too-big-to-fail regulation does not affect stock returns at all. None of the examined dates shows a significant abnormal stock return. On the basis of our earlier considerations, this may imply that the interest rate on contingent capital is not expected to be significantly higher than that on regular debt. Consequently, the banking sector would not face an additional burden due to the too-big-to-fail regulation. In contrast, credit markets show significant reactions. We find a significant increase in CDS spreads during the time of the preliminary press conference, the effect of which is, however, confounded by the Greek debt crisis.[19] Moreover, CDS spreads drop significantly and strongly at the date of the presentation of the agenda by the Swiss federal council on 12th May 2010. Table 8 shows an abnormal negative return in CDS spreads of more than 20 basis points, which is highly significant. This supports the view that markets perceived the large Swiss banks as being too big to be saved, such that additional (contingent) capital was welcomed by credit markets.

Overall, in terms of the two objectives - increasing the safety of the banking sector while maintaining the competitiveness of the industry -, the Swiss banking regulation seems to have been a success. However, the effectiveness of contingent capital in a crisis has not yet been proven. One also has to see at what level the interest rate on contingent capital will settle down.

4.6 International Events

In the final section, we analyze the effects from international regulatory events on the different banking sectors. We consider the Basel III framework proposed by the Basel Committee on Banking Supervision as well as on the G20 summits. The Basel III framework was initially proposed on 26th September 2009, and the first

[19] At this time, global markets started to distrust Greece, and CDS spreads increased on a broad base over different countries and asset classes. In future research, we will control for the effect of the Greek debt crises by including a benchmark country to identify the effect of the Greek crisis separately.

draft was published on 19th December of the same year. The main regulatory element of the Basel III Accords consists in a revision of the rules for banks' capital requirements. Compared to its predecessor Basel II, the new regulation modifies the definition of capital and includes additional layers of equity. In addition to a base layer of 8% equity-ratio, the Basel III regulation requests banks to hold a counter-cyclical equity cushion of 2.5% and a capital preservation buffer of 2.5% in order to absorb losses in case of financial stress, and finally an additional buffer of up to 2.5% if the bank is considered as a systemically important financial institution (SIFI) (Sachverständigenrat zur Begutachtung der gesamtwirtschaftlichen Entwicklung, 2011). The total (maximum) capital ratio thus stands at 15.5%, as is depicted in Figure 1. Since the Basel III equity requirements were mainly discussed on the G20 summits, we analyze those dates as sub-events of the international reform process. Given bail-out expectations and tax deductibility of debt, we expect a decrease in stock returns as a higher portion of equity increases banks' funding costs. Higher capital requirements may also be expected to lower CDS spreads because banks' probability of default decreases. The effect may be confounded if other measures, agreed upon on the same summits have the goal to reduce implicit bail-out guarantees.

Apart from capital regulation, the following reform measures were discussed at the G20 summits. At the first summit in London, the G20 leaders agreed to regulate the shadow banking system, e. g. hedge funds, and to fight tax arbitrage across different financial systems. The summit in Pittsburgh was characterized by a call for internationally binding capital requirements. This is where the idea of Basel III was born. The meeting in Washington again strengthened the need for higher capital ratios. During the summit in St. Andrews (United Kingdom) participants agreed to further strengthen the global financial system without agreeing on any explicit reform measures. The meeting in Busan (South Korea) already showed a hostile attitude towards a globally harmonized bank tax, and the summit in Toronto ended with a final rejection of such a tax.

Tables A.1 till A.4 show the abnormal returns for US, UK, German and Swiss banks in reaction to international reforms. The Basel III reforms did not have any significant impact on the markets in Germany, Switzerland, and the United Kingdom. These results can easily be understood for the two latter countries. Comparing the

Basel III requirements with the Swiss and the British regulatory frameworks (see Figure 1), we see clearly that the Basel III framework provides for a weaker capital cushion. Therefore, it is not surprising that no noticeable effect can be observed in Switzerland and in the United Kingdom. In other words, these markets already anticipated stronger requirements from their national regulators and did consequently not care much about the Basel III framework. Another explanation for the insignificance of results is the prolonged negotiation process, which makes it hard to clearly identify reform dates. This is a particular problem with international reforms. For the United States we find mixed results with respect to the Basel III sub-events. Whereas the conference in Washington had a negative impact on stock returns and a positive impact on CDS spreads, we could see a sigh of relief when the first equity requirements were published on 12th September 2010. Until that point in time, the market may have expected higher capital ratios than those requested by Basel III.

In case of the G20 summits, the results point in different directions for the different countries. This is due to the fact that international events have to be evaluated in the light of expectations, which are formed by domestic regulations. Moreover, different types of banks tend to react differently on the various events. Overall, we can conclude that the results for international events are not consistent with the idea that the international reforms were a milestone in financial regulation. The disappointing results may reflect the difficulty to agree at an international level on common regulation and the uncertainty about the actual implementation in national law.

5 Conclusion

In this study, we analyzed market reactions to major national and international financial sector reforms, employing an event-study analysis. The strongest effects are found for a small number of national events, such as the announcement of the Volcker rule in the United States, which fundamentally altered the structure of national banking sectors. Even stronger effects are found, however, when earlier reforms were diluted. Those reforms that more or less stuck to the old regulatory approaches have not had any significant impact on financial markets.

How can we interpret the statistical insignificance of our results? One possibility is that this is merely a reflection of the fact that markets correctly anticipated the regulatory measures. Even though we cannot completely discard this explanation, we believe this is unlikely. Our filtering method should make sure that we only capture significant and surprising news. If something is not news, it would not make it to newspapers' front pages. A more serious concern is that statistical insignificance is to be expected because the effects of regulatory reform may be ambiguous. For example, a reform that diminishes bail-out expectations should increase CDS spreads, but if the same reform makes banks safer, this should decrease CDS spreads. While this may be a problem, the first effect is likely to dominate - at least for bigger banks. In order to shed more light on such issues, we will distinguish between different types of banks and bank sizes in future research. The final explanation of insignificance is the most worrying of all. It may simply mean that the major financial reforms announced and enacted over the past two years have been just that – insignificant.

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A Appendix

Table A1: Abnormal returns in the United States for International events

Standard errors in brackets; dependent variable: daily bank stock return (left panel, in %) and first difference in CDS spreads (right panel, in basis points)

			Stock Returns					CDS Spreads			
International Regulatory Events			80 trading days		140 trading days			80 trading days		140 trading days	
Basel III	Date	Average Return	Abnormal Return	p-value	Abnormal Return	p-value	Average Return	Abnormal Return	p-value	Abnormal Return	p-value
Initial proposal	26-Sep-09	3.100	-0.200	0.894	0.700	0.801	2.240	1.887	0.816	1.904	0.897
			[1.3]		[2.8]			[8.109]		[14.745]	
First draft published	19-Dec-09	1.000	-0.300	0.702	-0.300	0.825	1.950	2.296	0.681	9.313	0.391
			[0.9]		[1.2]			[5.589]		[10.850]	
G 20 Meeting: Washington, USA	23-Apr-10	0.000	-1.100	0.159	-1.100	0.197	2.630	2.879	0.396	3.089	0.440
			[0.8]		[0.9]			[3.392]		[4.004]	
- Enlarged event window [0-1]		-1.000	-3.2***	0.008	-2.8**	0.021	5.99	12.487***	0.010	12.907**	0.023
			[1.1]		[1.1]			[4.826]		[4.826]	
G 20 Meeting: Busan, Korea	05-Jun-10	-2.000	0.700	0.393	1.100	0.214	11.61	10.342*	0.099	10.51**	0.047
			[0.8]		[0.9]			[4.826]		[5.284]	
- Enlarged event window [0-1]		0.000	0.000	0.992	0.700	0.591	9.82	21.624**	0.015	21.959***	0.003
			[1.1]		[1.2]			[8.906]		[7.499]	
G 20 Summit: Toronto, Canada	27-Jun-10	-1.000	-0.900	0.211	-0.800	0.336	-2.14	-2.474	0.693	10.51	0.660
			[0.7]		[0.8]			[6.272]		[5.288]	
Basel committee sets equity requirements	12-Sep-10	3.000	1*	0.088	1.1**	0.016	-2.69	-2.953	0.646	-2.707	0.618
			[0.6]		[0.7]			[6.420]		[5.434]	
Official publication of framework	16-Dec-10	0.000	-0.600	0.450	-0.600	0.426	2.13	1.947	0.625	1.547	0.779
			[0.8]		[0.8]			[3.984]		[5.507]	
G 20 Meetings & Summits											
London, UK	02-Apr-09	2.000	-4.200	0.325	-34.600	0.408	-21.81	-24.340	0.168	-24.559	0.375
			[4.2]		[4.2]			[17.650]		[27.670]	
St. Andrews, UK	07-Nov-09	4.000	-1.000	0.368	-1.100	0.556	-4.52	1.505	0.830	2.812	0.780
			[1.1]		[1.9]			[7.010]		[10.070]	
Incheneon, South Korea	26-Feb-10	1.000	0.900	0.342	0.100	0.444	-2.28	-2.385	0.513	-1.379	0.801
			[0.9]		[1]			[3.644]		[5.470]	
Seoul, South Korea	12-Nov-10	-2.000	0.200	0.768	0.100	0.920	2.50	3.309	0.406	2.706	0.617
			[0.8]		[0.8]			[3.982]		[5.411]	

Notes: The table shows the results from 44 SUR regressions corresponding to 11 sub-events for stock returns and CDS spreads, respectively, using estimation windows of 80 or 140 trading days. Each system of regressions includes 10 banks. The number of observations ranges between 800 (corresponding to an estimation window of 80 days) and 1400 (140 trading days). All estimations are using balanced samples. If the estimation window contains another sub-event, this is "dummied out" by including the corresponding event dummies (including pre- and post-event dummies). Through an iteration procedure, we make sure that all estimation windows contain exactly the given number of observations (not including other events). The corresponding number of calendar days varies between 110 and 140, depending on weekends, holidays, missing data and other included events. The regressions in the left panel use daily stock returns of banks as dependent variable (in %), those in the right panel use daily first differences in bank CDS spreads (in basis points). The first number column in each panel displays the unadjusted average return of all banks within the sample at the respective event day. "Abnormal returns" refer to the average abnormal return of all banks at the respective event day. The p-values correspond to the test whether the average abnormal return is equal to zero. All regressions include pre-event dummies. The results for an enlarged event window of two days are displayed only if average cumulated abnormal returns are statistically significant. Stars are to be interpreted as follows: *** significant at 1 percent, ** significant at 5 percent, * significant at 10 percent.

Table A2: Abnormal returns in the United Kingdom for International events

Standard errors in brackets; dependent variable: daily bank stock return (left panel, in %) and first difference in CDS spreads (right panel, in basis points)

		Stock Returns					CDS Spreads				
International Regulatory Events			80 trading days		140 trading days			80 trading days		140 trading days	
Basel III	Date	Average Return	Abnormal Return	p-value	Abnormal Return	p-value	Average Return	Abnormal Return	p-value	Abnormal Return	p-value
Initial proposal	26-Sep-09	1.000	0.100	0.957	0.800	0.775	-0.800	0.919	0.765	1.039	0.847
			[1.5]		[2.6]			[3.068]		[5.400]	
First draft published	19-Dec-09	2.000	-0.400	0.729	-0.500	0.678	-0.010	0.192	0.932	0.318	0.909
			[1.2]		[1.4]			[2.241]		[2.780]	
G 20 Meeting: Washington, USA	23-Apr-10	2.000	-0.100	0.896	0.300	0.785	2.390	2.357	0.463	2.359	0.395
			[1.1]		[1.2]			[3.211]		[2.772]	
- Enlarged event window [0-1]		-1.000	-1.100	0.356	-1.000	0.428	10.31	5.411	0.428	4.491	0.295
			[1.2]		[1.6]			[6.831]		[4.287]	
G 20 Meeting: Busan, Korea	05-Jun-10	-2.000	-0.400	0.810	-0.200	0.898	7.43	14.886	0.126	15.525	0.040
			[1.2]		[1.8]			[9.719]		[7.542]	
- Enlarged event window [0-1]		0.000	-1.200	0.272	-1.100	0.367	-2.91	-3.274	0.626	-3.236	0.544
			[1.1]		[1.2]			[6.720]		[5.331]	
G 20 Summit: Toronto, Canada	27-Jun-10	2.000	-0.100	0.915	-0.200	0.848	-3.13	-3.036	0.637	-3.201	0.561
			[1]		[1.1]			[6.442]		[5.399]	
Basel committee sets equity requirements	12-Sep-10	0.000	0.300	0.769	0.200	0.870	-0.01	-0.136	0.964	0.004	0.999
			[1]		[1]			[2.971]		[5.379]	
Official publication of framework	16-Dec-10	-1.000	-0.600	0.661	-2.100	0.041	2.75	2.484	0.557	2.752	0.609
			[1.4]		[1]			[4.228]		[5.380]	
G 20 Meetings & Summits											
London, UK	02-Apr-09	11.000	0.500	0.934	4.100	0.420	-2.00	-3.018	0.706	n/a	
			[5.6]		[5.1]			[7.989]			
St. Andrews, UK	07-Nov-09	2.000	2.200	0.128	2.000	0.295	-0.70	1.194	0.678	1.242	0.749
			[1.4]		[1.9]			[2.872]		[1.242]	
Incheneon, South Korea	26-Feb-10	0.000	-2.7**	0.048	-2.6*	0.061	-4.55	-4.936	0.008	-4.436	0.122
			[1.4]		[1.4]			[2.890]		[2.868]	
- Enlarged event window [0-1]		-2.000	-7.2***	0.000	-7***	0.000	-3.77	-8.306	0.043	-7.305***	0.073
			[1.9]		[2]			[4.111]		[4.070]	
Seoul, South Korea	12-Nov-10	0.000	1.000	0.331	0.900	0.369	-2.76	-2.379	0.383	-2.657	0.614
			[1]		[1]			[2.727]		[5.271]	

Notes: The table shows the results from 44 SUR regressions corresponding to 11 sub-events for stock returns and CDS spreads, respectively, using estimation windows of 80 or 140 trading days. Each system of regressions includes 5 banks. The number of observations ranges between 400 (corresponding to an estimation window of 80 days) and 700 (140 trading days). All estimations are using balanced samples. If the estimation window contains another sub-event, this is "dummied out" by including the corresponding event dummies (including pre- and post-event dummies). Through an iteration procedure, we make sure that all estimation windows contain exactly the given number of observations (not including other events). The corresponding number of calendar days varies between 107 and 134, depending on weekends, holidays, missing data and other included events. The regressions in the left panel use daily stock returns of banks as dependent variable (in %), those in the right panel use daily first differences in bank CDS spreads (in basis points). The first number column in each panel displays the unadjusted average return of all banks within the sample at the respective event day. "Abnormal returns" refer to the average abnormal return of all banks at the respective event day. The p-values correspond to the test whether the average abnormal return is equal to zero. All regressions include pre-event dummies. The results for an enlarged event window of two days are displayed only if average cumulated abnormal returns are statistically significant. Stars are to be interpreted as follows: *** significant at 1 percent, ** significant at 5 percent, * significant at 10 percent.

Table A3: Abnormal returns in Germany for International events

Standard errors in brackets; dependent variable: daily bank stock return (left panel, in %) and first difference in CDS spreads (right panel, in basis points)

		Stock Returns				CDS Spreads				
International Regulatory Events			80 trading days		140 trading days		80 trading days		140 trading days	
Basel III	Date	Average Return	Abnormal Return	p-value	Abnormal Return	p-value	Average Return	Abnormal Return	p-value	Abnormal Return	p-value
Initial proposal	26-Sep-09	3.000	-0.900	0.688	-0.200	0.941	-1.600	0.964	0.813	0.715	0.870
			[2.1]		[2.5]			[4.077]		[4.357]	
First draft published	19-Dec-09	1.000	-15.300	0.437	-1.100	0.538	-0.020	0.581	0.827	0.736	0.809
			[1.9]		[1.9]			[2.656]		[3.046]	
G 20 Meeting: Washington, USA	23-Apr-10	2.000	-0.500	0.598	-0.800	0.611	2.630	-3.061	0.201	-2.825	0.271
			[1.5]		[1.9]			[2.391]		[2.565]	
G 20 Meeting: Busan, Korea	05-Jun-10	-1.000	-0.600	0.598	-0.300	0.816	-3.14	8.236	0.177	8.546***	0.077
			[1.1]		[1.2]			[6.101]		[6.101]	
G 20 Summit: Toronto, Canada	27-Jun-10	2.000	0.400	0.739	0.300	0.809	-1.15	-1.627	0.793	-1.701	0.737
			[1]		[1.1]			[6.195]		[5.0672]	
Basel committee sets equity requirements	12-Sep-10	1.000	-0.100	0.903	0.100	0.883	-4.33	-3.620	0.541	-4.279	0.420
			[1]		[0.9]			[5.919]		[5.311]	
Official publication of framework	16-Dec-10	-1.000	-0.600	0.504	-0.600	0.537	0.76	0.386	0.921	0.950	0.856
			[0.9]		[1.3]			[3.872]		[5.219]	
G 20 Meetings & Summits											
London, UK	02-Apr-09	7.000	-1.200	0.658	-0.600	0.878	-5.60	-5.338	0.575	-4.415	0.707
			[2.6]		[4.2]			[9.521]		[9.521]	
St. Andrews, UK	07-Nov-09	4.000	0.300	0.867	0.300	0.897	-1.33	3.203	0.352	3.052	0.436
			[2.1]		[2]			[3.447]		[3.903]	
Incheneon, South Korea	26-Feb-10	1.000	-0.500	0.670	-0.500	0.762	-0.83	-0.857	0.729	-0.306	0.922
			[1.2]		[1.7]			[2.472]		[3.120]	
Seoul, South Korea	12-Nov-10	1.000	0.900	0.286	0.900	0.316	-3.06	-3.149	0.434	-3.111	0.587
			[0.8]		[0.9]			[4.023]		[5.728]	

Notes: The table shows the results from 44 SUR regressions corresponding to 11 sub-events for stock returns and CDS spreads, respectively, using estimation windows of 80 or 140 trading days. Each system of regressions includes 5 banks. The number of observations ranges between 400 (corresponding to an estimation window of 80 days) and 700 (140 trading days). All estimations are using balanced samples. If the estimation window contains another sub-event, this is "dummied out" by including the corresponding event dummies (including pre- and post-event dummies). Through an iteration procedure, we make sure that all estimation windows contain exactly the given number of observations (not including other events). The corresponding number of calendar days varies between 106 and 142, depending on weekends, holidays, missing data and other included events. The regressions in the left panel use daily stock returns of banks as dependent variable (in %) those in the right panel use daily first differences in bank CDS spreads (in basis points). The first number column in each panel displays the unadjusted average return of all banks within the sample at the respective event day. "Abnormal returns" refer to the average abnormal return of all banks at the respective event day. The p-values correspond to the test whether the average abnormal return is equal to zero. All regressions include pre-event dummies. The results for an enlarged event window of two days are displayed only if average cumulated abnormal returns are statistically significant. Stars are to be interpreted as follows: *** significant at 1 percent, ** significant at 5 percent, * significant at 10 percent.

Table A4: Abnormal returns in Switzerland for International events

Standard errors in brackets; dependent variable: daily bank stock return (left panel, in %) and first difference in CDS spreads (right panel, in basis points)

		Stock Returns				CDS Spreads				
International Regulatory Events			80 trading days		140 trading days			80 trading days		140 trading days	
Basel III	Date	Average Return	Abnormal Return	p-value	Abnormal Return	p-value	Average Return	Abnormal Return	p-value	Abnormal Return	p-value
Initial proposal	26-Sep-09	1.188	-0.612	0.241	-0.569	0.445	3.600	n/a		n/a	
			[0.5]		[0.7]						
First draft published	19-Dec-09	0.841	0.249	0.542	0.198	0.710	-0.005	0.468	0.890	0.791	0.866
			[0.4]		[0.5]			[3.393]		[4.684]	
G 20 Meeting: Washington, USA	23-Apr-10	0.948	-0.413	0.325	-0.481	0.431	2.490	2.449	0.456	2.396	0.459
			[0.4]		[0.6]			[3.327]		[3.239]	
G 20 Meeting: Busan, Korea	05-Jun-10	0.008	-0.069	0.887	-0.073	0.871	16.84	5.488	0.329	5.922	0.216
			[0.5]		[0.5]			[5.619]		[4.785]	
G 20 Summit: Toronto, Canada (t=1)	27-Jun-10	0.651	0.540	0.279	0.548	0.234	-8.265	-4.018	0.666	-3.619	0.673
			[0.5]		[0.5]			[9.251]		[8.572]	
Basel committee sets equity requirements	12-Sep-10	0.358	0.206	0.651	0.211	0.726	-3.370	-3.287	0.628	-3.544	0.528
			[0.5]		[0.6]			[9.251]		[5.6149]	
Official publication of framework	16-Dec-10	-0.241	-0.261	0.505	-0.270	0.511	-0.795	-1.013	0.778	-0.729	0.983
			[0.4]		[0.4]			[3.904]		[9.329]	
G 20 Meetings & Summits											
London, UK	02-Apr-09	4.172	1.362	0.199	1.256	0.184	-7.456	-8.425	0.413	-8.263	0.597
			[1.1]		[0.9]			[10.294]		[15.633]	
St. Andrews, UK	07-Nov-09	1.307	n/a		n/a		-5.415	1.449	0.702	-8.263	0.597
								[3.782]		[15.633]	
Incheneon, South Korea (t=1)	26-Feb-10	0.640	-0.633	0.890	-0.242	0.597	-2.597	-2.791	0.346	-3.755	0.415
			[0.5]		[0.5]			[2.962]		[4.604]	
Seoul, South Korea	12-Nov-10	-0.090	0.050	0.902	0.477	0.635	-6.86	-6.298	0.146	-7.146	0.274
			[0.4]		[1]			[4.328]		[6.527]	

Notes: The table shows the results from 40 SUR regressions corresponding to 11 sub-events for stock returns and CDS spreads, respectively, using estimation windows of 80 or 140 trading days. Each system of regressions includes 8 banks (stock returns) or 2 banks (CDS spreads). The number of observations ranges between 160 (corresponding to an estimation window of 80 days) and 1120 (140 trading days). All estimations are using balanced samples. If the estimation window contains another sub-event, this is "dummied out" by including the corresponding event dummies (including pre- and post-event dummies). Through an iteration procedure, we make sure that all estimation windows contain exactly the given number of observations (not including other events). The corresponding number of calendar days varies between 106 and 180, depending on weekends, holidays, missing data and other included events. The regressions in the left panel use daily stock returns of banks as dependent variable (in %), those in the right panel use daily first differences in bank CDS spreads (in basis points). The first number column in each panel displays the unadjusted average return of all banks within the sample at the respective event day. "Abnormal returns" refer to the average abnormal return of all banks at the respective event day. The p-values correspond to the test whether the average abnormal return is equal to zero. All regressions include pre-event dummies. The results for an enlarged event window of two days are displayed only if average cumulated abnormal returns are statistically significant. For two events, no CDS data for Swiss banks were available. Stars are to be interpreted as follows: *** significant at 1 percent, ** significant at 5 percent, * significant at 10 percent.