FACULTEIT ECONOMIE EN BEDRIJFSKUNDE

EFFECTS OF BAIL-INS ON EUROPEAN BANKS

Aantal woorden / Word count: 20.984

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Masterproef voorgedragen tot het bekomen van de graad van:

Master's Dissertation submitted to obtain the degree of:

Master in Business Engineering: Finance

Academiejaar / Academic year: 2019-2020

UNIVERSITEIT GENT

VERTROUWELIJKHEIDSCLAUSULE

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Naam student: Tom Remue

Preface

This dissertation was written with the goal of achieving my master in business engineering : finance.

I want to thank prof. Dr. Vander Vennet and Nicolas Soenen for letting me work on this interesting topic and helping me along the way. I also want to thank Dan, Jan and Steven for proofreading and my family for supporting me during my studies.

Preamble for master's dissertations impacted by the corona measures

The research was originally planned to Investigate the effects of a bail-in on European banks using an event study approach. Because the needed data and information was all available online I didn't experience much trouble due to the coronavirus. The meetings were not done in person anymore, but the online tool (Microsoft teams) worked efficiently and didn't hinder much.

" This preamble is drawn up in consultation between the student and the supervisor and is approved by both".

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1.INTRODUCTION

After the 2008 financial crisis followed by the sovereign debt crisis, there were many complaints about the bail-out procedure. After the collapse of Lehman brothers, European governments understood they needed to save their systemic banks in order to prevent a full collapse of the financial system and consequently the economy. An action of which some countries still carry consequences today, the level of debt of some of the European countries is extremely high compared to their GDP, which decreases fiscal capacity and makes the bail-out procedure increasingly harder to execute.

Adding to that, taxpayers had to pay for the mistakes of the financial institution's management and greed which caused a severe moral hazard problem, breaking a key principle of the free market economy being that owners and creditors are supposed to bear the losses of a failed venture. Another problem was that the subordinated creditors were also being bailed out by taxpayers in the same way as the senior creditors, which caused creditor inertia (Gleeson, 2012).

This has led to the introduction of the EU Bank Recovery and Resolution Directive (BRRD) and the Single Resolution Board (SRB), followed by the Bail-in tool and other resolution functions on January 1, 2016. Although, even before the implementation of those, multiple European countries already adopted the bail-in approach.

In this dissertation I will research the effects of a bail-in event on the total return indices and the CDS spreads of other European banks using an event study approach. I expect, due to a higher risk premium and reduced bail-out expectations, CDS spreads to rise and stock returns to go down after the announcement of a bail-in. I choose most events that used the bail-in tool from several European countries like Denmark, Spain, Portugal,… and also two events concerning the announcement of the European agreement on the implementation of the requirement of using bail-ins.

There exists a wide policy-oriented literature on the use of bail-ins (for example, Gleeson, 2012 ; Avgouleas and Goodhart, 2016; Avgouleas and Goodhart, 2015). (Guliana, 2017) also finds that positive indications of commitment to bail-in increased the difference in yield between unsecured (i.e., bail-inable) and secured (i.e., non-bailinable) bonds. Interestingly, events indicating a decreased commitment towards the bail-in, reduce the yield spread between unsecured and secured bonds. My dissertation adds to the small literature of empirical effects of bail-ins and to the discussion on the credibility of the BRRD and the banking union. It gives us an answer to the question whether the use of a bail-in does have an impact on the market view on the riskiness of banks which could indirectly have a negative impact on banks' funding costs (CDS is an indication of riskiness of the

banks which translates into higher funding costs) and hereby potentially putting more pressure on the profit margins of the European banks. Secondly it also gives us an indication which events had a bigger impact than others and was the impact limited to other domestic banks or more internationally? Lastly, it also analyses bail-in events after the implementation of the bail-in tool together with the SRB which has not been done before to my knowledge.
I will first discuss the bail-in tool with a short explanation of the framework, a theoretical example of how the bail-in should work, arguments for the use of bail-in and possible problems. In the third part I will discuss the data and the empirical method, followed by prior expectations in part four. Next I will give an event overview followed by the selected cases in detail together with the results in part six, and the conclusion of the research will follow in part seven.

2.BAIL-IN

2.1 FRAMEWORK

The bail-in tool is a procedure to be used by the resolution authorities and allows them to write down and convert the claims of creditors into equity. This implicitly means that the creditors will have to take the losses instead of the taxpayers as before during the "bail-outs". The writing down is done by following a hierarchy of creditors determined by the SRM regulation. Creditors that belong to the same hierarchy should be treated equally, however within the same class of creditors exclusions are possible.

Not all liabilities are to be written down, certain liabilities are excluded from the scope of the bail-in tool. For example deposit amounts that fall under the deposit guarantee scheme (DGS) are also excluded, but any amount higher than the DGS could be bailed-in. Secured liabilities are also partially 'at risk' in a way that the difference in value between the liability and the collateral securing it can also be potentially bailed-in.

Some examples of liabilities that haven been excluded from the bail-in tool are:

– covered deposits, i.e. deposits up to the amount covered by a deposit guarantee scheme (DGS)

– employee remuneration or benefits

– liabilities to tax and social security authorities that are preferred by law

For a full overview I refer to 'the Handbook of Basel III Capital: Enhancing Bank Capital in Practice' by Juan Ramirez (2017).

In specific conditions certain liabilities can be partially or fully excluded from the bail-in by the resolution authorities, even if this means that creditors within the same class are not going to be treated equally. Some examples of these exceptional conditions are :

– it is not possible to bail-in the liability within a reasonable timeframe (this could potentially apply to derivatives liabilities, which can be very difficult to value in a short space of time); or

– the exclusion is necessary and proportionate to achieve continuity of critical functions and core business lines.

An important principle to hold in account with this is the NCWOL (No creditor worse off than under liquidation principle). This provision cannot be broken when applying the resolution. Because the resolution authorities can exclude liabilities form the bail-in, it can also increase the level of write-down or conversion of the other liabilities to compensate for this. Following the NCWOL principle, this can only be done if these creditors absorbing the losses would not be worse off than they would have under normal insolvency proceedings. Further valuations will have to be made to determine whether this is the case. The bail-in tool also needs to follow a concrete order of creditors to be bailed-in first. The first ones to bear the losses however must always be the shareholders. The prescribed order for creditors is aligned with the procedure in normal insolvency proceedings, that way the NCWOL provision won't be as easily violated. However the question remains when the bailed-in creditors actually are worse off than under normal insolvency proceedings, by whom should they be compensated and in what form? A suggestion could be shares.

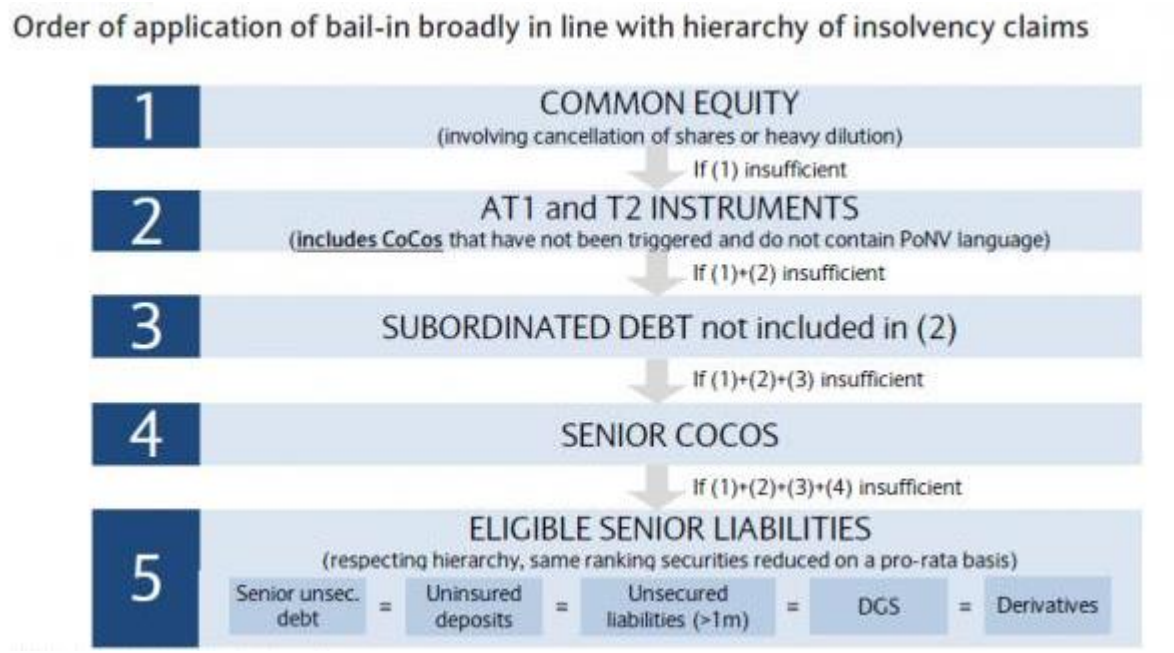
In the case when the non-absorbed losses still needed to be absorbed due to exclusion of liabilities can't be passed on to the other creditors, the resolution financing arrangement can support by making a contribution to cover the unabsorbed losses. They are for example able to purchase shares or capital instruments of the institution so that the bank in resolution will be able to restore itself and be recapitalized sufficiently. However this is conditional to a prior 8% of bail-in that needs to be executed first, before the resolution fund or government support can be used. Thus meaning that the institution under resolution has already absorbed losses of at least 8% of its total liabilities including own funds. This 8% has to be measured at the moment it is decided that the institution is at the point of failing or likely to fail (FOLTF), thus when the resolution is announced. Also, the funding provided by the resolution fund can't exceed 5 % of total liabilities including own funds.

Bail-In hierarchy

During a Bail-in action, as mentioned before, the existing shareholders are to be hit first. The shares will be cancelled or transferred to the bailed-in creditors. This will thus lead to a severe dilution of the existing shareholders or for them to be totally wiped out depending on the required amount of bail-in.

Usually, the majority of the liabilities being bailed-in will be the unsecured debt instruments. This can be done after the exercise of rights embedded in the terms of the instrument where there is a certain condition that can trigger conversion(contingent convertible bonds for example) or after decision of the resolution authority. Figure 1 gives an overview of the total hierarchy that needs to be followed during the bail-in.

Figure 1: Bail-in hierarchy



source: European commission

Necessary conditions

Three main conditions for resolution should be met in order for the bail-In tool to be used. First, there can't be any prospect that any alternative private sector measures would prevent the failure within a reasonable timeframe. Secondly, the resolution action is necessary and in the public interest and lastly, the financial institution has to be at the point of failing-or-likely-to-fail (FLTF).

This determination is made by the supervisor or the resolution authority, and does not have a quantitative threshold.

MREL and TLAC

In order to avoid that the financial institutions would restructure their liabilities in a way that their borrowings could not be touched and thus give their creditors immunity from the bail-in tool, the BRRD has introduced the Minimum Requirement for Own Funds and Eligible Liabilities (MREL). This expresses a minimum level of loss-absorbing liabilities that need to be held by the financial institution relative to its own funds and total liabilities. It sets up a sufficient loss absorbing and recapitalization capacity in resolution. These loss-absorbing liabilities will mostly consist out of own funds (capital) and bail-inable liabilities. However, it is good to mention that not all of these bail-inable liabilities count towards the institution's MREL. This is because there is uncertainty as to how feasible it is for some of these liabilities to be bailed-in in an actual resolution scenario.

The BRRD requires the MREL to be based on the bank-specific features, including its size (systemic importance), business model, funding model and risk profile. The targets are set by EU resolution authorities together with the prudential supervisors and can also be influenced by the desire to limit contagion effects and the level of possible negative impact on non-professional creditors.

The MREL has a similar aim to the Total loss Absorbing capacity (TLAC) standard that was developed by the Financial Stability Board (FSB). This being that G-SIBs(Globally systemic important banks) need to have the capacity to recapitalize via a bail-in procedure. However some differences are important, one being that the TLAC was designed specifically for global systemically important banks (G-SIBs) at an international level. Another apparent difference is that the TLAC standard also includes measures to strongly dis-incentivize for financial institutions to hold liabilities that are likely to be bailed in at the point of resolution of another institution. Hereby thus limiting contagion effects that could present themselves during a bail-in procedure. G-SIBs must deduct these holdings that are exposed to other external TLAC liabilities issued by other G-SIBs from their own TLAC. In the MREL requirement there is not a similar deduction included. However the national resolution authorities can be instructed to limit the extent to which financial institutions possess another institution's liabilities that are eligible for bail-in.

Level of recapitalization

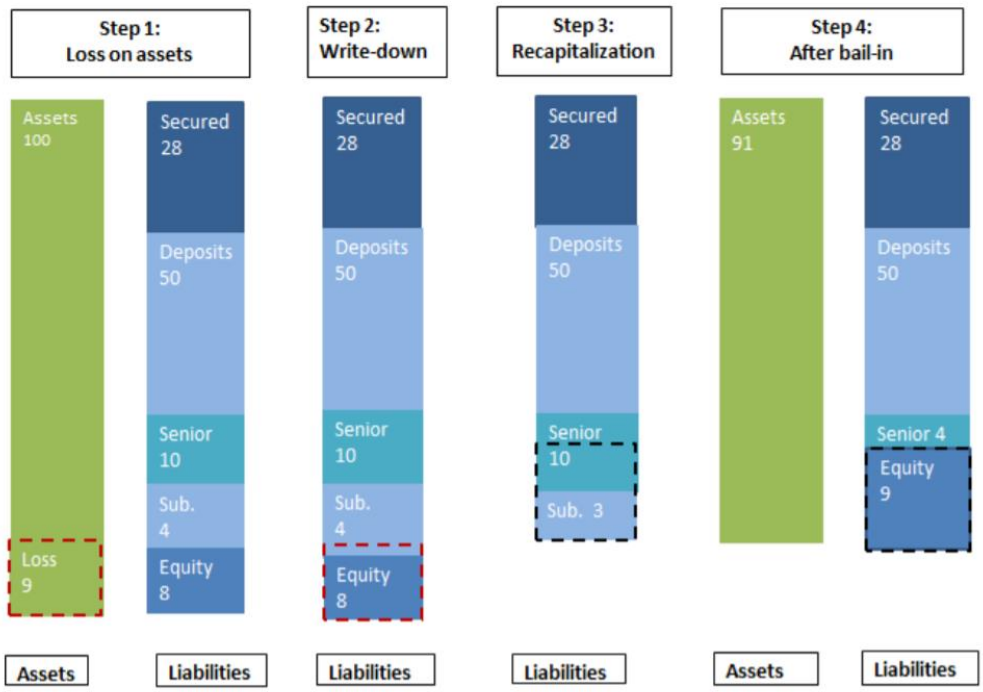
The bail-in tool ultimately is applied to recapitalize the financial institution that is failing or likely to fail (FLTF) to a level that this institution can continue carrying out its normal activities for which it is authorized and to comply with the regulations that are set for the institution to be authorized. On top of that it is extremely important for the institution that market confidence is sufficiently restored.

There is no specific level of recapitalization that needs to be achieved, it is like the FLTF assessment very much more of a qualitative assessment made by the resolution authorities complying with the draft Regulatory Technical Standards(RTS) made by the European Banking Authority (EBA). In short these RTS aim for the institution to have a level of MREL that mainly satisfies the capital requirements applicable, can match the average level of capitalization of a peer group in order to regain market confidence and be able to absorb losses sufficiently.

In order to successfully reorganize, the institution's management or other authority has to prepare a business reorganization plan they have to submit to the resolution authority within one month of the bail-in. With this plan it has to be clear that after implementation the long term viability of the institution is restored. Within a month after the submission the resolution authority must assess and agree to this, or has to give additional instructions which they find necessary.

2.2 EXAMPLE

Figure 2: Example of a bail-in



source: European central bank

With the framework and concept explained, I will now introduce a short example using figure 1 to show how the working principle of the bail-in tool.

To trigger the procedure, the bank in the example incurred a loss of 9 percent on its total assets. To absorb these losses we look at the liabilities side, we can see that in this example the institution's liabilities consist of 8% equity that will be totally wiped out following the bail-in hierarchy (shareholders are the first line of defense). Next, subordinated debt will also be written down until all losses are absorbed. In this example there is sufficient subordinated debt to absorb the remaining losses so not all of it will be used (only 25% of the subordinated debt). During the third phase, still following the hierarchy, the liabilities will be converted into equity until a sufficient recapitalization level is achieved. In our example the total amount of remaining subordinated debt will not be sufficient, so also senior unsecured debt will be bailed-in.

After this conversion has happened the balance sheet will look like the one in step 4. The financial institution is recapitalized and will meet its capital requirements again. Of course this is an example of how it would work ideally, possible problems that might come with the execution of the bail-in will be discussed later.

2.3 ARGUMENTS FOR BAIL-IN

A key element of the bail-in procedure is trying to enhance the market discipline of the financial institutions. By implementing the potential that the costs of the failure of a financial institution would fall on creditors, these who own liabilities of a financial institution which are eligible for bail-in have a stronger motive to monitor the institution's risk of failure. Considering the risk premium attached to the bail-in nature of the debt instruments, banks could offset the increased funding costs ("due to this bail-in risk premium") by increasing/improving their credit profile. (Lewrick et al, 2019) find evidence that this "bail-in risk premium" indeed is being adopted by the investors. Adding to this, they find that investors in riskier banks get rewarded by a larger premium, however the investors' monitoring eases with more comfortable market-wide conditions and this is being used as a good time to issue bail-in instruments by the financial institutions. (Giuliana, 2017) also finds that bail-in events weakly increase investors' incentives to incorporate a bank's risk into the prices of its securities, consistent with an improvement of market discipline.

Another mechanism for enhancing market discipline might be that, as the potential costs of bank failure would fall on creditors, in addition to shareholders, such creditors should become more alert about the levels of leverage the bank carries, limiting one of the most likely causes of bank failures and the governance costs associated with excessive leverage. Normally, shareholders have every incentive to build leverage to maximize their return on equity (Avgouleas and Cullen, 2015).

So overall you could say that the funding costs of the bank will rise taking this risk-premium into account and the requirement of bail-inable liabilities. However opposite to this you could argue that in return the bank should have a safer structure, due to the higher market discipline, and this could then actually lower the funding costs.

Also, once the bail-in and resolution is completed the assets remaining should be less risky compared to before the bail-in as you have written of the bad assets, this hints to the fact that the capital requirements should actually be equal or lower than before bail-in.

One of the biggest advantages of course is the removal of the moral hazard problem that was apparent during bail-outs of financial institutions. Taxpayers, in principle, should not have to cover anymore for the mistakes of the bank's management. You could argue whether it is better to let a few take a lot of loss than a lot taking a relatively small loss and why the investors in pension funds, other institutions or individual savers are better placed to absorb the losses. These investors do often not really have the expertise to act as effective bank monitors. However the reasoning there is that

they have made a clear decision the purchase the claim on the bank as opposed to the taxpayer (unless the instruments have been mis sold like in a specific case in Italy that is discussed later on.)

Another major advantage is that, in principle, the financial institution should be able to continue its operations as a going concern. Execution of the bail-in, if done right, can be very fast with minimum disturbance of the customers and destruction of value.

Furthermore, as mentioned in the framework it would need less of capital injected from the national authorities and is very much needed to improve the fiscal capacity of some European countries.

Finally, as the regulatory requirements focus (MREL) on G-SIBS, there could be an incentive to split banks or reduce the footprint. Hereby thus dealing with the too-big-to-fail problem that is still quite apparent.

2.4 POSSIBLE PROBLEMS

The bail-in procedure has to be timed well, if it is done too early, this can lead to multiple rounds of bail-in which is far from ideal. Opposite of this might be that if the timing is too late creditors, especially other institutionals who monitor very closely, could be able to flee from the institution which would put the institution in further problems. Potentially leading to a public bank run if confidence is lost as we have seen in the past and putting a lot of pressure on the liquidity. There is still no theoretical model of the criteria for intervention of resolution authorities (quantification of loss absorption buffer; estimation of potential extreme losses, choice of intervention thresholds)(Goodhart and Segoviano, 2015). This can cause frictions and loopholes, for example during the liquidation of Veneto Banca and Banca popolare di Vicenza there was a lot of criticism on this issue.

This flight of creditors can also be a major problem at other financial institutions, when an institution is in problems due to non-specific firm problems and the bail-in is triggered it might alarm creditors of other institutions. This can create difficulties and contagion effects, especially in worse economic conditions. It is not uncommon in Europe that a banks' debt is held by another bank which could then be bailed-in also, spreading contagion effects further and increasing systemic risk. (Avgouleas and Goodhart, 2016) mention that in times where there is a systemic problem, bail-ins can trigger a bank funder panic both ex ante and ex post. The BRRD acknowledges this problem and therefore Injection of public funds (including temporary public ownership under Article 58 BRRD) is allowed in any case only in 'the very extraordinary situation of a systemic crisis' subject to approval under the

Union state aid framework (BRRD). Obviously this problem should be smallest when the failure of the financial institution is caused by very firm-specific risks, for example because of bank fraud during good conditions.

Adding to this, in Italy for example one third of bondholders were other domestic banks and there was an historically high level of debt held by households (World bank group, 2016). Meaning there is a lack of internationalisation of the Italian debt market as well. This could further spill over effects and could potentially be dangerous in the case of a larger bail-in. This is one of the reasons that the resolution of 'Monte dei Paschi di Siena' in Italy did not follow the BRRD, because they were very concerned that pensioners for instance would lose all their savings in banks' bonds. Hereby hurting the credibility of the BRRD and the SRB. This indicates a major issue of the bail-in, for example when a pension fund is bailed-in and faces big losses, many(f.i. pensioners) will be impacted indirectly. This is not specific to Italy.

Also we have to keep in mind that, after the bail-in, management will probably be replaced and there are other perspectives being introduced. New accountants, appointed by the resolution agency, could view the scenario way more negative than the ones before because they were incentivized to take a more positive view on the valuation. This transition could thus lead to a big drop in published accounting valuations which would mean another hit to the institution.

Another potential problem could be a difference in treatment of the domestic creditors and the foreign creditors. Resolution authorities might be biased as towards which creditors to bail in, as already happened before and was even organized like this for Icelandic banks in the past. We also saw this argument come in to play during the bail-in of 5 selected bonds of Novo Banco (a case I will discuss later). To tackle this problem, the BRRD disallows discrimination between creditors based on their nationality or other characteristics.

Next, with bail-in regimes in place, there is a serious risk of pro-cyclicality which is not wanted in the banking system, hence the countercyclicality buffers. By bailing-in the banks become weaker and it will get more expensive for them to get funding also. Thus, a shift away from bail-out towards bail-in is likely to reinforce pro-cyclicality. The ECB has been cautious about bailing-in bank bondholders for such reasons in the past (Andrew G. et al, 2016).

One more weakness of a bail-in as a bank restructuring tool is that it does not provide any new cash. Thus in order to survive the firm must not only be creditworthy, but credibly creditworthy to at least its central bank, and soon after to the market as a whole.

It is therefore likely that bail-in will require statutory backing in order to convince counterparties to continue dealing with it post-reconstruction.(Gleeson, 2012)

3.EMPIRICAL METHOD AND DATA

3.1 EMPIRICAL METHOD

To investigate whether the bail-in event has an impact on the stock returns and CDS spreads I will make use of the event study regression method as suggested by Pynönnen (2005). An event study is a great method to measure the impact of a specific event on the value of a firm's equity or debt securities(Mackinlay, 1997). It estimates the value of the selected variable during an event by using data prior to the event and then compares these estimated values with the actual values during the event.

First, I choose an estimation window length of 120 days to limit possible estimation errors and I will use event windows with varying lengths to investigate possible anticipation effects. The daily returns from the total return indices or first differences in CDS spreads calculated from the collected data will be regressed on the daily returns or CDS spread difference of the market variable, creating hereby a single index market model with the coefficient β as the market beta. To handle the potential problem of contemporaneous correlation due to having the same event windows for the firms, which might lead to bias in the standard error estimates, I use an equally weighted portfolio suggested by Pynönnen(2005), Jaffe(1974) and Brown and Warner(1985). Brown and Warner (1985) also found that the market model was robust in the presence of cross correlations by simulating abnormal returns using actual return data for randomly selected samples.

Besides this I also create dummy variables which will have a one value on a day which is part of the event window and a zero value when not. This causes the coefficients of the dummy variables to capture abnormal effects during the event windows. If an event window happens to take place during an estimation period for another event we leave this out of that estimation period and we include prior trading days to still have an exact 120 days in the final estimation window.

The regression then goes as follows for the daily returns of the total return indices:

$$r_{p,t} = \alpha_p + \beta_p r_{m,t} + \sum_{n=t1}^{t2} \gamma_{p,n} D_{t,n} + \mu_{p,t}$$

$r_{p,t}$ will equal the average of the daily returns of all the banks included in the sample (equally weighted portfolio) for the event on day t. $r_{m,n}$ equals the daily returns of the market index, in this case it will be the total return index of the EURO STOXX 50 or the STOXX global 1800.

$D_{t,n}$ are dummy variables that equal to one on event day n = t and zero otherwise, n = t1, t1+1,…,t2. Meaning that the coefficient $\gamma_{p,n}$ should capture any abnormal differences that occurred during the event.

For the CDS spreads I use two different methods to run the event study regression.

The first method will use a market model just like the regression used for the total return indices:

$$\Delta CDS_{p,t} = \alpha_p + \beta_p \Delta CDS_{m,t} + \sum_{n=t1}^{t2} \gamma_{p,n} D_{t,n} + \mu_{p,t}$$

The regression will work identical to the first one, With $\Delta CDS_{p,t}$ denoting the average of the daily difference in CDS spreads of the banks included in the sample on day t. $\Delta CDS_{m,t}$ represents the daily difference of the DS EUROPE BANKS 5Y CDS INDEX on day t.

the second method is a constant return model:

$$\Delta CDS_{p,t} = \alpha_p + \sum_{n=t1}^{t2} \gamma_{p,n} D_{t,n} + \mu_{p,t}$$

Where α_p should equal the mean of the first differences of the CDS spreads and the coefficient of the dummy variables should capture the abnormal effects (same mechanism as with the market model). I use these two models firstly to compare results and because I suspect that the DS EUROPE BANKS 5Y CDS INDEX potentially could also have an impact from the event and hereby mitigate the abnormal effects. Another reason I use two methods is because for some regressions the market factor did not seem to be significant, if this is the case the model actually falls back to a similar constant return model statistically but to make sure I then used the second model separately. (Mackinlay, 1997) also finds similar conclusions using these two methods but finds a larger standard error and some loss of precision. After running both, the results are qualitatively largely the same in my research as well. If the difference is remarkable both regressions will be given.

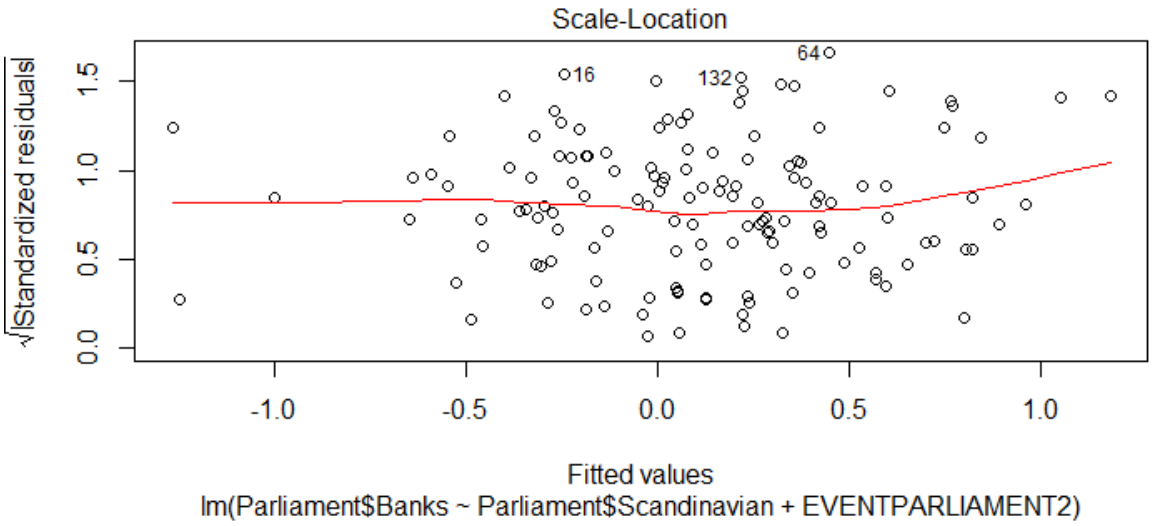
The null hypothesis in these event study regressions is that the actual return on the event day or during the event window does not statistically significantly differ from the estimated return. This means that if the dummy variable for example has a p-value of <0.01, we can reject the null hypothesis with 99% certainty and assume that the actual return does significantly differ (positively or negatively) from the estimated return.

I will always start by evaluating the impact on the full sample of European banks in our data, then I will check for the contagion effects in specific countries. For example for the bail-in of Banco popular Espanol SA I will also check for the contagion effects on only Spanish banks and also on only other Southern countries like Italy and Greece. To be able to do this I split up the full sample of banks in to different subsamples('Mediterranean', 'Scandinavian',…) visible in Table 1.

However, if for example I investigate the Banco popular bail-in event I want to see the contagion effects on Spanish banks and other 'Mediterranean' banks separately so for this case I take the Spanish banks out of this subsample. The same I will do for the Amagerbanken event, taking the Danish banks separately and leaving them outside the 'Scandinavian' sample.

After running the regressions I also check for potential heteroskedasticity problems that could occur due to patterns in the variance of the residuals and hereby potentially causing biased results. I check for this in two ways. I check this graphically by looking at the scale-location plot. If this plot gives a straight line with no specific pattern in the observations the model does not have a heteroskedasticity problem. Hereby an example:

Figure 3: Scale-Location example



To verify a second time I use the Breush-Pagan test developed by T.Breusch and R.Pagan in 1979 implemented in Rstudio. Only if this test has a p-value is lower 0.05 we can reject the null hypothesis of homoskedasticity at the 95% confidence level. None of the events seem to suffer from heteroskedasticity problems.

3.2 DATA

I selected specific cases that made use of the bail-in tool with respect to the size of the institution that was resolved, the amount that was bailed-in, which level of creditors were hit and the importance that it might have on other institutions. Meaning not every single case with a bail-in is included in the study, but those that are included were in my opinion the most indicative, important events and are also well spread over time. To this day, not a single financial institution has been fully resolved by using the bail-in tool alone like in the given example(not in combination with sale of business for example). Besides these I also include events that happened around the implementation and regulation of the bail-in, these should give us a great indication how the market reacted on the introduction and announcement of the bail-in tool as a requirement.

The data I use are the total return indices and the CDS spreads of different banks from across Europe obtained from Datastream and markIt (full overview in section 8. Sample overview). For the market total returns index I use the total return indices of the EuroStoxx50 and I also use the Stoxx global 1800 for comparison for the events I have access to it. The EuroStoxx50 is an index that is designed to represent the 50 largest companies in the Eurozone by market capitalization. The index holds stocks from 11 Eurozone countries and is managed and licensed by STOXX Limited, which is owned by Deutsche Börse AG. It is also reviewed annually to evaluate the index components in September.

As of January 8, 2020, the top ten components in the Euro STOXX50 Index included the following:

- Total SA
- SAP SE
- ASML Holding NV
- LVMH Moet Hennessy Louis Vuitton SE
- Linde PLC
- Sanofi SA
- Siemens AG
- Allianz SE
- Airbus SE
- Unilever NV

The Stoxx global 1800 is more of a broad representation of the world's most developed countries, including 600 European countries, 600 American and 600 Asian/pacific companies.

I mainly use the Euro Stoxx 50 because they seem to be a stronger estimator for the European banks and I lack the data of the Stoxx global 1800 for some events. However I still do compare the results to see if there are no big differences due to the European banks possibly also affecting the Euro Stoxx 50 more as they make up about 7% of the index (at the present) and hereby possibly mitigating effects. After comparison, the results were qualitatively largely the same and only the Euro Stoxx 50 is used in the results tables.

I choose to work with the total return indices because it assumes that any cash distributions, such as dividends for example, are reinvested back into the stock. This way we look at both the yield of the stock and the capital gains creating a more accurate view on the total performance. For example when a stock has a capital gain of 8% over the year and also an annual yield of 3%, the total return will show a growth of 11% in total for the year. If the same stock had a drop of 3% in share price, the total return would be 0%. Comparing to price returns, which do not take into account cash distributions, it makes a significant difference in return.

We will then convert these total return indices into daily returns (DR) in percent by subtracting the index of the day before from the day now and dividing this by the index of the day before.

$$DR_t = \frac{R_t - R_{t-1}}{R_{t-1}} * 100$$

Figure 4: Average total return index of sample

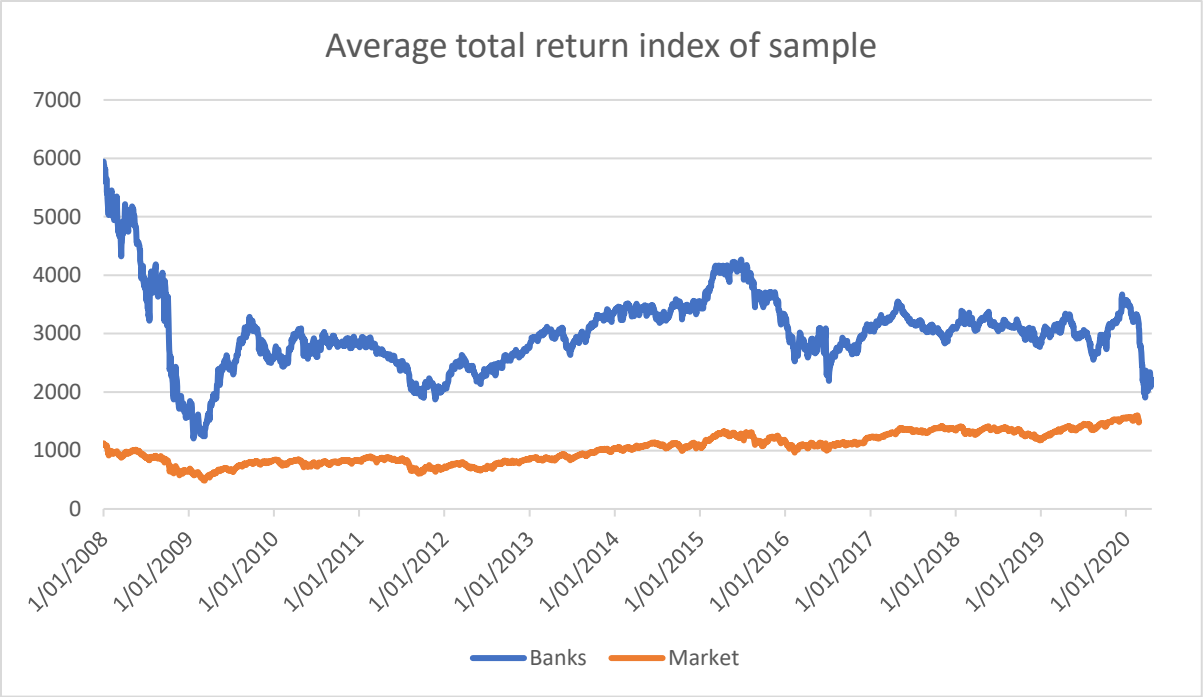
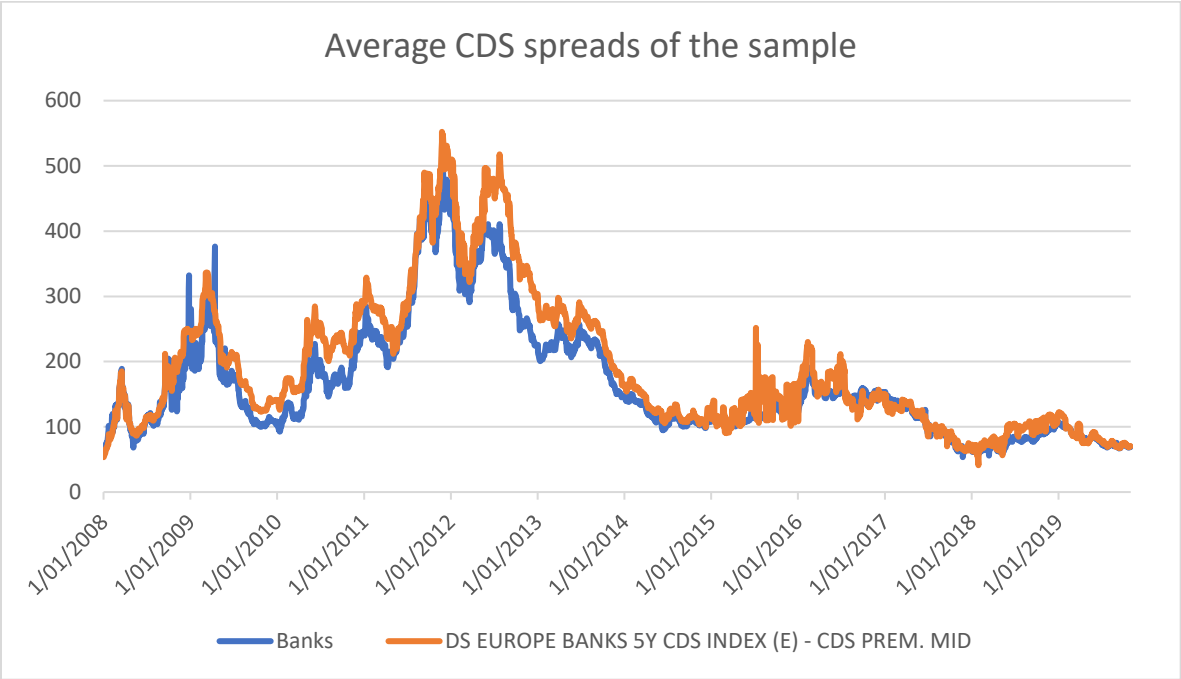


Figure 4 shows an overview of how the total return index has evolved for our sample of banks compared to the market factor (Euro stoxx 50). We can see that since the financial crisis the banks' returns index has gone down by a lot and hasn't been able to fully recover yet to pre-crisis levels. The market however did go up a lot percentage wise since the crisis over these years. At the end of the graph we can also notice the impact of the coronavirus already putting further pressure on the banks.

The second variable we want to perform the event study on are the credit default swap spreads of the financial institutions. A credit default swap (CDS) is a derivative instrument you can buy which will pay you if a certain company defaults. The "spread" of a CDS is the annual amount the protection buyer must pay the protection seller over the length of the contract, expressed as a percentage of the notional amount. So this translates to, the higher the spread you need to pay, the higher the probability of default. Furthermore, Bouveret (2009) finds that CDS spreads serve to estimate default probabilities expected by markets and are thus a leading indicator of fears over the solvency of borrowers. So this is a good variable to be used to measure market confidence and indirectly also the funding costs. The market factor used for the regression here is the DS EUROPE BANKS 5Y CDS INDEX.

$$\Delta CDS_t = \frac{CDS_{t\_} CDS_{t-1}}{CDS_{t-1}} * 100$$

Figure 5:Average CDS spreads of sample



Looking at the evolution of the CDS spreads in Figure 5 we can notice that, like the total returns, the CDS spreads evolved in a negative way after the financial crisis and peaked around the sovereign debt crisis in 2012. However, opposed to the total returns, the CDS spreads were able to recover to normal levels recently. We can also notice that the banks are very alike with our market factor, that is why I also include the constant return model, the DS EUROPE BANKS 5Y CDS INDEX might absorb too much of the effects.

For selecting the event date used for the event window I choose to pick the announcement dates that the troubled bank was officially going to be bailed-in. This should be the day that it gets out to the public and where the effects should happen. As it is difficult to determine possible sentiment or expectations the event window will be started 5 days before the event date and end 5 days after. In this way I will be able to notice possible anticipations on the event or leaked information. I was able to find the event dates online through news articles from qualitative financial newspapers (for example 'The financial times') , other academic research (f.i. Schäfer et al., 2016) and press announcements from the resolution authorities like the SRB.

4.EXPECTATIONS

Before running the event regressions I expect to see a drop in the stock returns and an increase in the CDS spreads. The use of a bail-in means that shareholders and other creditors take a loss, when shareholders of other banks see this happen this should lead to a drop in confidence but also leads to a higher risk level. These effects could translate to lower share prices and a drop in the total returns of European banks, but also to a higher risk of defaulting thus higher CDS spreads.

Another reasoning could be that when there is a use of the bail-in method, the expectations of a bailout at other banks could decrease. Thus implying a direct increase in the probability of default and the feeling that the shareholders and other creditors won't get saved like they maybe expected. This, again, leading to higher risks and ultimately to a drop in returns and a rise in CDS spreads. These higher CDS spreads or higher 'riskiness' can ultimately also lead to higher costs of funding and thus reduces profits also (this could be potentially compensated by banks increasing their loan rates).

Furthermore, I expect the reactions to be different to each specific bail-in case, as we haven't seen any very similar resolutions with a bail-in yet. Reactions should be higher according to the level of creditors that were bailed in, because here is where the most difference is being made comparing to a bail-out and the strongest signal is sent. For example I expect effects to be higher if senior debt and uninsured deposits also get bailed-in.

I also expect these effects to be most apparent at banks located in the same country as were the bail-in takes place. This because they fall under the same national regulations, but also because they have more similar market conditions and it will be more covered in the news influencing local investors.

For announcements or decisions relating to the regulations of the SRB and the bail-in tool I expect participating countries of the Eurozone of course to be more affected than non-participating. It will be interesting to see if these non-participating countries do get affected at all. Furthermore, I expect G-SIBs to be affected more as well in their CDS spreads because as previously mentioned, they have higher capital and MREL requirements than other banks. I also expect the 'Mediterranean' sample specifically to experience a higher impact because during this period these banks were most affected by the sovereign-debt crisis resulting to be seen by the public as most vulnerable and unstable banks, like Greece for example. Opposite to this I expect the 'Scandinavian' banks to be least affected, they have been seen as more healthy banks situated in a financially better environment. The asset quality between the two groups has been divided also, with the 'Southern' banks having much worse asset quality (Fitch: EU Bank North/South Asset Quality Divide Persists).

Because of this worse position they are in it is logical that they are seen as more risky and been perceived to be more likely to make use of bail-in because of lower fiscal capacity to bail-out in the first place. Besides that Denmark for example already had a similar regulation in place with "Bank Package III" and also Sweden and Denmark have their own currency and are not part of the banking union at the time.

5.EVENT OVERVIEW

Event	*Date*	*Country*
Amagerbanken	07.02.2011	Denmark
SNS Reaal	1.02.2013	Netherlands
Bank of Cyprus and Laiki	18.03.2013	Cyprus
	25.03.2013	
UK Co-Operative bank	17.06.2013	UK
Proposal	20.03.2014	EU
EU Parliament back SRM	15.04.2014	
Banco Espirito Santo	04.08.2014	Portugal
Andelskassen	05.10.2015	Denmark
Banca Marche, Cassa di Risparmio di Ferrara, Banca Etruria e CariChieti	23.11.2015	Italy
Novo Banco	29.12.2015	Portugal
Banco popular Espanol	06.06.2017	Spain
Veneto Banca, Banca popolare di Vicenza	23.06.2017	Italy

Here we have a complete overview of all the selected events together with the event date and the country where the resolution took place. We can split these events up into 4 different groups. The first 5 events can be seen as the pre-regulatory events which happened before the agreement on the requirement of the bail-in tool. Then we have two events regarding to the dates where the agreement on the bail-in happened. After that we have 4 events which happened between the decision on the bail-in tool and the implementation of the regulations (January 1, 2016). The last two events are then events that happened after the implementation. To start I will show some graphs from these four event groups over an event window of [-5,5], thus starting 5 days before the event and ending 5 days after.

The following graphs of these four groups will give us a general idea of what to expect results wise during the event windows. The graphs represent the average percentual change of the banks during the event windows and also of the market index that is used in our regressions.

Going over these graphs we can immediately see some differences in the reactions, especially in the CDS spreads there seems to be quite a difference between the pre-regulation events and the post-regulation events. Where the pre-regulation events seem to be following our expectations, the post-regulation events' CDS spreads seem to react quite differently which is interesting to see. In figure 6 for example on the event day t we see the total returns of banks dropping while the market went up by around the same amount.

However it is important to say that we can't really make any conclusions on these graphs because we need to first filter out the dependence on the market movements also which can play a big role in these evolutions. Also these graphs are averaged over the full sample of banks, thus we can't see reactions for specific groups. In the next part I will go into detail on each case.

Pre-regulation

Figure 6: Cumulative total returns pre-regulation

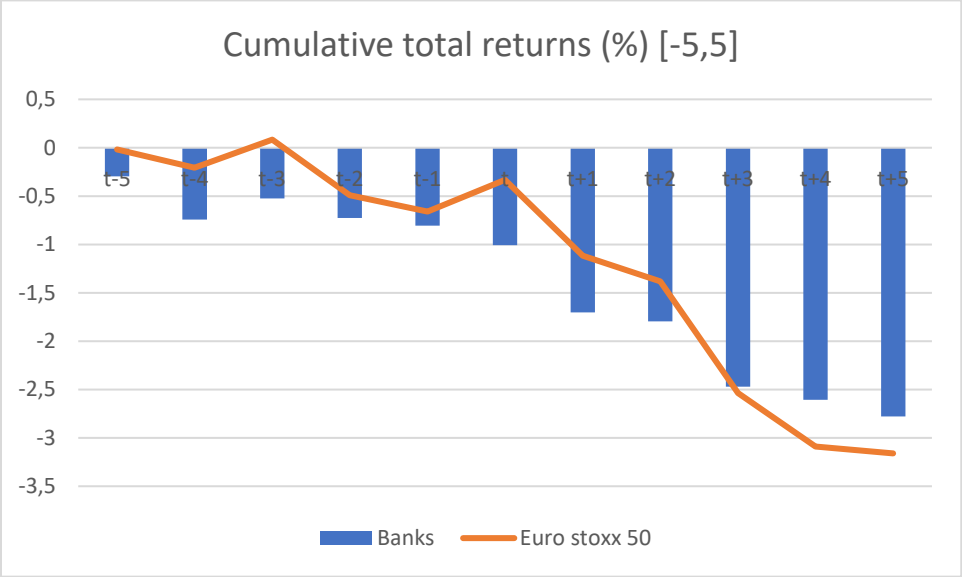
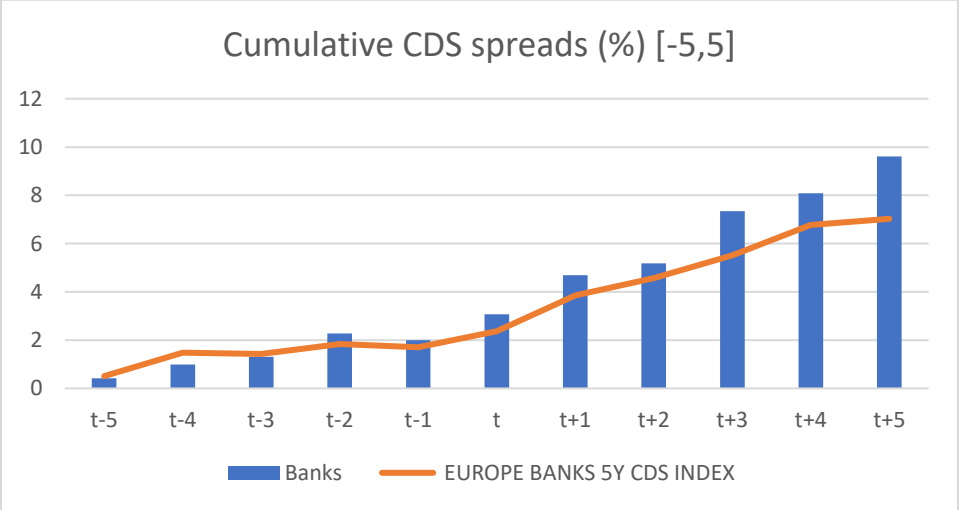


Figure 7: Cumulative CDS spreads pre-regulation



Regulation events

Figure 8: Cumulative total returns of regulation events

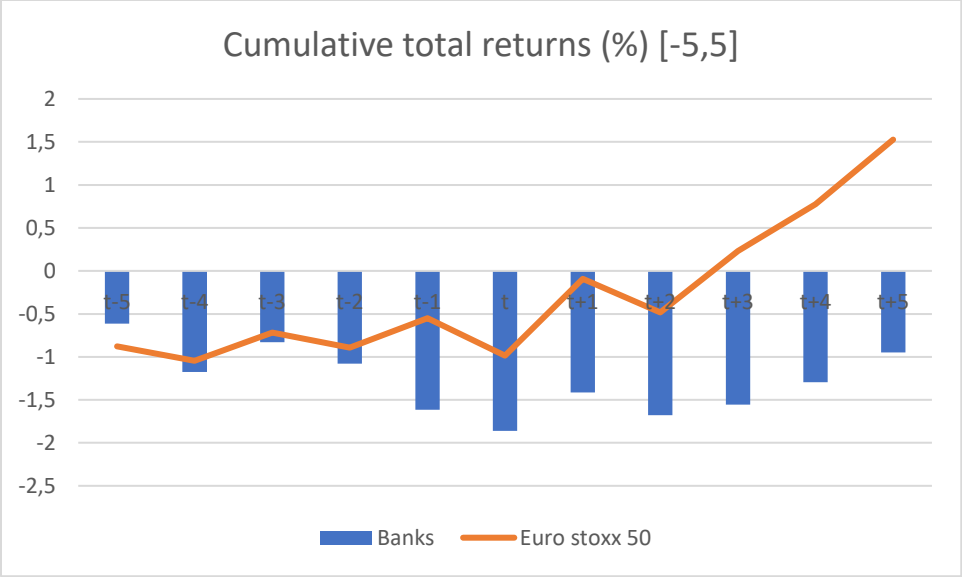
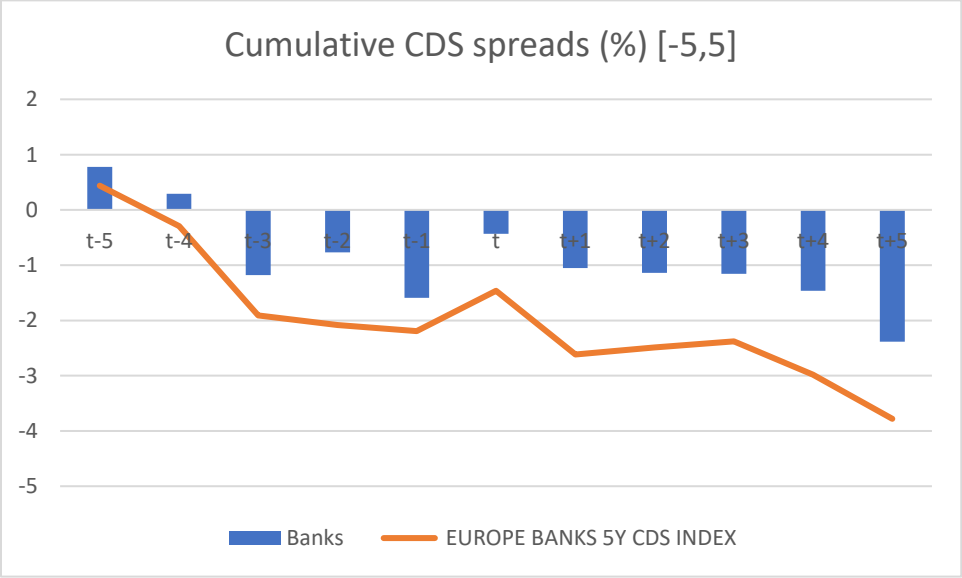


Figure 9: Cumulative CDS spreads of regulation events



Between regulation decision and implementation date

Figure 10: Cumulative total returns between regulation and implementation

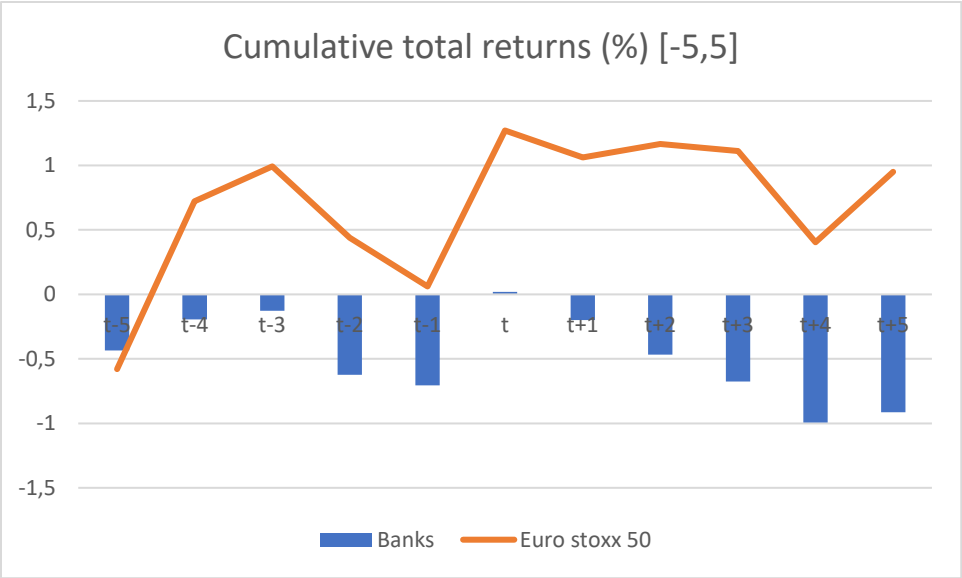
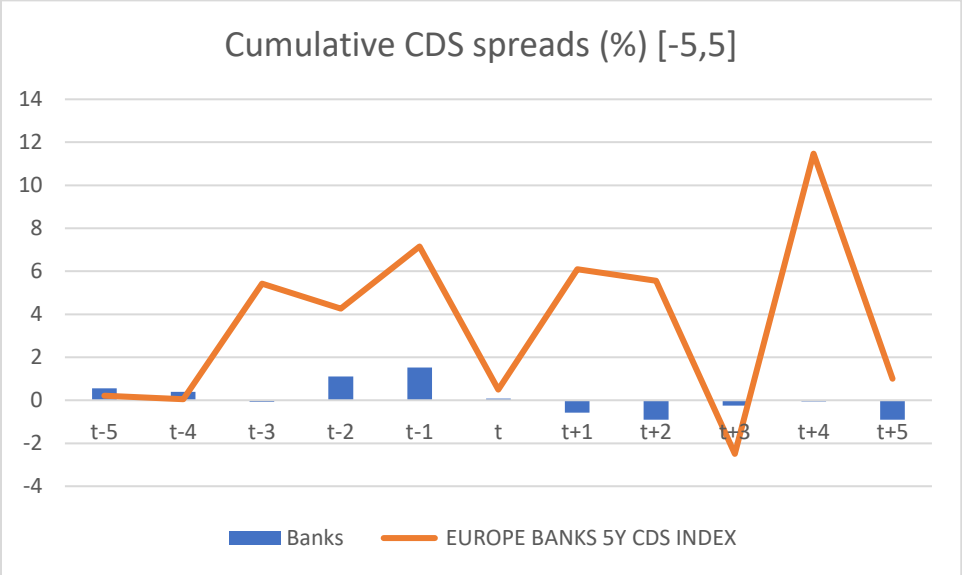


Figure 11:Cumulative CDS spreads between regulation and implementation



Post-implementation

Figure 12: Cumulative total returns post-implementation

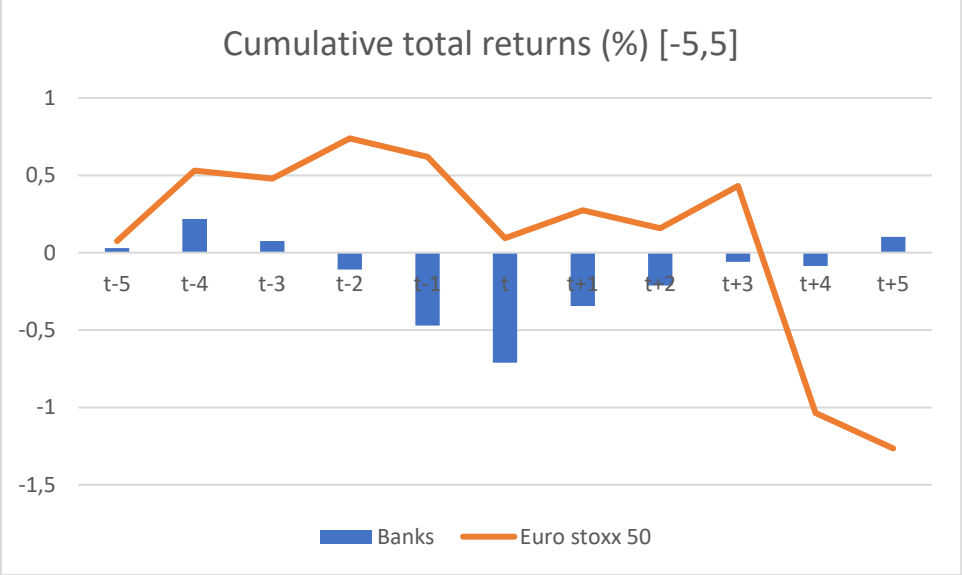
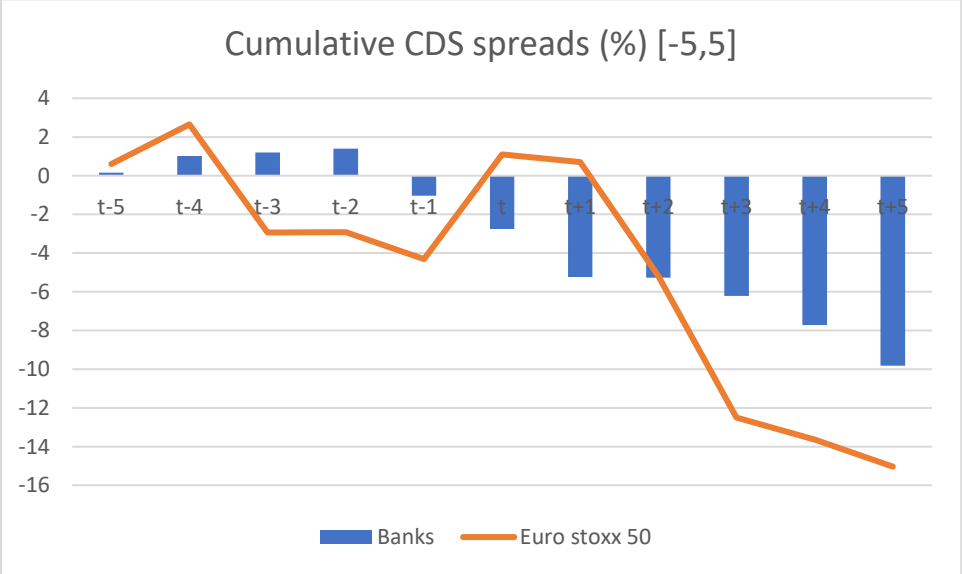


Figure 13:Cumulative CDS spreads post-implementation



6.SELECTED CASES AND RESULTS

6.1 AMAGERBANKEN

The very first case using the bail-in tool happened in Denmark, which had the "Bank Package III" ("Bank Package III saw the general state guarantee removed and creditors expected to bear the risk of the failure of a financial institution as an incentive to reinvigorate the market mechanism and the pricing of risk", World bank Group) setup in their national resolution procedure at the time and this prescribed the use of bail-in. Aiming for the same goals as the SRB now does. Amagerbanken was a small retail bank in Copenhagen with total assets amounting to around 4.5 billion euro so the amount was not very high. However senior debt was also hit during the procedure, which gave of a strong signal. Hence, depositors and other unsecured creditors of this distressed bank could not be sure to receive full coverage of their claims.

I quote Ivan Zubo of BNP Paribas at the time : "At a Friday night Board meeting on 4 February, the Directors of the bank determined that the additional write-downs in Q4 2010 of DKK3.14bn implied the equity capital of the bank as of 1 January 2011 would be proforma negative DKK0.7bn. The bank subsequently informed the Danish FSA that it did not meet the solvency requirements. The FSA responded with an order for the solvency requirements to be met by 7pm on 6 February. As no acquirer or investor could be found in such a short period of time (i.e. over the weekend), the supervisory board of the bank elected for the bank to be wound down under the new Danish legislation approved in June 2010 and in force since 1 October 2010. Hence, all the assets and some liabilities have been transferred to a new company, Amagerbanken af 2011 A/S, which is wholly owned by Financial Stabilitet A/S ('Financial Stability'), the government's bank resolution fund. Equity and subordinated debt are to stay at the bankrupt entity and hence most likely be wiped out."

After the resolution, it was estimated that holders of senior debt and unsecured depositors would face a haircut of 41 percent. This was a first time in Europe so the Amagerbanken resolution is a very important case to include into our research.

In the aftermath of the resolution several Danish banks were complaining about a higher cost of funding due to the risk that creditors could be bailed-in. Moody's also downgraded credit ratings of six Danish banks which has an impact on the cost of funding. Other European countries were looking at the situation closely because they were thinking about adopting the bail-in rules in their regulations also, especially Sweden indicated this. For these reasons I expect there to be a contagion

effect surely on other Danish banks and possibly on other countries as well. However we have to keep in mind that Denmark does not belong to the Eurozone and this could definitely limit contagion effects.

Results

The Amagerbanken bail-in was a very local event because of the bank and the bail-in amount being relatively small. Next to that, the bail-in regulation was specific to the national regulation of Denmark at the time and this is what we find back in the results here. We can see a statistically significant drop in daily returns for the Danish banks in our sample on the announcement date until three days after the announcement. Three days after the event we can even see a statistically significant drop for our full sample of banks, which is due to not only the Danish banks but also mostly due to the 'Mediterranean' banks which are included here. This is not totally against the expectations because the banks of these countries were probably in the most vulnerable situation with the European sovereign debt crisis in mind.

For the CDS spreads we only have one Danish bank in sample(Danske bank, which is a very big and stable bank) so it is hard to draw conclusions here although we can say that we don't see any negative abnormal reactions for Danske. For the other banks there seems to be no abnormal reactions in the CDS spreads.

Thus, although being a relatively small event we do find some contagion effects for the daily returns, especially at Danish banks as expected.

Table 1: Amagerbanken[-5,5], total return index

	Dependent variable:			
	Banks	Scandinavian	Danish	Mediterranean
	(1)	(2)	(3)	(4)
`EURO STOXX 50`	0.510***	0.609***	0.153***	1.028***
	(0.028)	(0.060)	(0.046)	(0.064)
EVENT	0.022	-0.181	**-0.513*** **	-0.005
	(0.108)	(0.233)	(0.179)	(0.251)
Constant	-0.042	0.057	0.053	-0.202***
	(0.031)	(0.068)	(0.052)	(0.073)
Observations	131	131	131	131
R2	0.729	0.449	0.128	0.667
Adjusted R2	0.725	0.440	0.114	0.662
Residual Std. Error (df = 128)	0.342	0.740	0.568	0.798
F Statistic (df = 2; 128)	172.113***	52.128***	9.385***	128.198***
Note:			*p<0.1; **p<0.05; ***p<0.01	

Table 2:Amagerbanken[-5,5], daily total return index, t='07-02-2011'

	Dependent variable:			
	Banks	Scandinavian	Danish	Mediterranean
	(1)	(2)	(3)	(4)
`EURO STOXX 50`	0.509***	0.610***	0.156***	1.024***
	(0.028)	(0.061)	(0.046)	(0.065)
t-5	-0.303	0.382	-0.537	0.425
	(0.338)	(0.745)	(0.562)	(0.802)
t-4	0.215	-0.045	-0.349	0.704
	(0.342)	(0.752)	(0.568)	(0.810)
t-3	0.407	-1.007	-0.198	0.203
	(0.338)	(0.745)	(0.562)	(0.802)
t-2	0.423	0.052	-0.006	0.466
	(0.339)	(0.746)	(0.563)	(0.803)
t-1	0.007	**-1.439***	0.252	-0.456
	(0.338)	(0.745)	(0.562)	(0.802)
t	-0.051	-0.082	**-1.697*****	-0.340
	(0.339)	(0.747)	(0.563)	(0.804)
t+1	-0.088	0.058	-0.184	-0.177
	(0.338)	(0.745)	(0.562)	(0.802)
t+2	-0.017	-0.117	**-1.529*****	0.711
	(0.338)	(0.745)	(0.562)	(0.802)
t+3	**-0.942*****	-0.712	**-1.157****	**-2.040****
	(0.338)	(0.745)	(0.562)	(0.802)
t+4	0.365	**1.311***	-0.274	0.491
	(0.338)	(0.745)	(0.562)	(0.802)
t+5	0.232	-0.392	0.031	-0.033
	(0.338)	(0.745)	(0.562)	(0.802)
Constant	-0.042	0.057	0.053	-0.202***
	(0.031)	(0.068)	(0.051)	(0.073)
Observations	131	131	131	131
R2	0.757	0.490	0.218	0.692
Adjusted R2	0.733	0.439	0.139	0.661
Residual Std. Error (df = 118)	0.337	0.742	0.560	0.798
F Statistic (df = 12; 118)	30.677***	9.461***	2.747***	22.130***
Note:			*p<0.1; **p<0.05; ***p<0.01	

Table 3: Amagerbanken [-5,5], CDS spreads, daily dummy variables

Note: Only one Danish bank in sample, t='07-02-2011'

	Dependent variable:			
	Banks	Scandinavian	Danish	Mediterranean
	(1)	(2)	(3)	(4)
`EUROPE BANKS 5Y CDS INDEX`	0.894***	0.568***	0.504***	0.970***
	(0.074)	(0.062)	(0.084)	(0.085)
t-5	-1.417	0.909	-0.757	-1.729
	(1.558)	(1.310)	(1.774)	(1.792)
t-4	-0.844	-0.914	-5.822***	-2.272
	(1.569)	(1.319)	(1.787)	(1.805)
t-3	-0.315	-0.018	-0.194	-0.727
	(1.554)	(1.307)	(1.770)	(1.788)
t-2	0.990	0.047	-0.013	-0.983
	(1.553)	(1.306)	(1.769)	(1.786)
t-1	-1.476	0.137	-0.190	-1.776
	(1.554)	(1.307)	(1.770)	(1.788)
t	0.433	0.653	0.660	0.210
	(1.553)	(1.306)	(1.769)	(1.787)
t+1	1.096	0.229	-0.600	1.237
	(1.554)	(1.307)	(1.770)	(1.788)
t+2	0.575	0.386	1.589	-0.084
	(1.558)	(1.310)	(1.775)	(1.793)
t+3	0.655	0.063	-1.184	-0.130
	(1.553)	(1.306)	(1.769)	(1.787)
t+4	-0.667	-0.283	1.198	-0.418
	(1.553)	(1.306)	(1.769)	(1.787)
t+5	1.484	0.621	-1.336	1.788
	(1.553)	(1.306)	(1.769)	(1.786)
Constant	0.089	-0.009	0.397**	0.217
	(0.144)	(0.121)	(0.164)	(0.166)
Observations	131	131	131	131
R2	0.577	0.431	0.324	0.557
Adjusted R2	0.534	0.373	0.255	0.512
Residual Std. Error (df = 118)	1.546	1.300	1.761	1.779
F Statistic (df = 12; 118)	13.435***	7.442***	4.711***	12.387***

Note: *p<0.1; **p<0.05; ***p<0.01

Table 4:Amagerbanken [-5,5], CDS spreads, one event dummy

	Dependent variable:			
	Banks	Scandinavian	Danish	Mediterranean
	(1)	(2)	(3)	(4)
`EUROPE BANKS 5Y CDS INDEX`	0.903***	0.570***	0.529***	0.985***
	(0.071)	(0.059)	(0.083)	(0.082)
EVENT	0.054	0.168	-0.584	-0.433
	(0.480)	(0.398)	(0.564)	(0.553)
Constant	0.085	-0.010	0.387**	0.211
	(0.141)	(0.117)	(0.166)	(0.162)
Observations	131	131	131	131
R2	0.561	0.424	0.253	0.539
Adjusted R2	0.554	0.415	0.242	0.532
Residual Std. Error (df = 128)	1.512	1.256	1.777	1.743
F Statistic (df = 2; 128)	81.899***	47.058***	21.725***	74.853***
Note:				*p<0.1; **p<0.05; ***p<0.01

6.2 SNS REAAL

SNS Reaal, consisting out of SNS bank and the insurance company Reaal N.V., fell short EUR 1.9 billion of its capital requirements in February 2013. Consequently the Dutch national bank (DNB) ordered an immediate redress. A month before this, share prices already tumbled due to negative press reports and deposits were being withdrawn. SNS did not meet the deadline of the DNB, and the group got nationalized. As the BRRD was not in place during that time, many other options were considered first but proved to be unable. SNS Reaal qualified as a systemic important financial institution and its bankruptcy would have had serious consequences for the stability of the financial system in the Netherlands. The Bail-in tool was partially used in the final resolution, shareholders and subordinated debt holders were being fully bailed-in and resulted in losses of approximately EUR 240 million and EUR 1.67 billion respectively. As this resolution approach was also unprecedented in the Netherlands at this level many legal proceedings followed, this could point ant the unexpectedness of the bail-in approach, something we should take into account for our results**.** As the bail-in of shareholders and subordinated debt holders alone was not enough there was also an injection of

capital of EUR 3.7 billion by the ministry of finance, restructuring and a levy by the treasury of a 'one-off tax' on the banking sector amounting EUR 1 billion. As a result the group was nationalized and the board members were replaced. Although the creditors that were included were limited (senior debt was saved) it was the first bail-in that involved a considerable amount of money and also a first systemically important bank using the bail-in.

The financial institution was also considerably big in the Netherlands which made it an important event. It took place when there were already talks of reforming the European banking regulations. The Finance Minister in the Netherlands at the time was Dijsselbloem, he was also the president of the Eurogroup (which has a very prominent institutional role in the resolutions of EU banks) and was recognized as a strong advocate for the bail-in policy (Sandbu, 2015). All these elements made this bail-in pretty indicative for further resolution developments at the time, so I do expect a significant negative reaction on this event. Especially in the Netherlands and surrounding countries. However it is important to note that deposits were being withdrawn before the event and negative news was released well before the announcement of bail-in which could mitigate possible reactions during the event window, but this could also give us a 'cleaner' reaction on the use of a bail-in.

Results

We do see a statistically significant positive reaction in the daily returns for our Dutch bank, but this is only one bank (ING group) so it is hard to draw any conclusions from this. Besides that total returns don't seem to be affected much. For the CDS spreads in the market model we see a significant rise of about 3 percent at the Dutch banks in our sample three days before the event and we can also notice high positive coefficients for all of our banks on the event day and the day after. For the first time, we can see a difference between the constant return model and the market model of the CDS spreads. The constant return model points at a high significant reaction on the CDS spreads on the full sample of banks and highest at the neighbour countries one day after the event. The market model also had high positive coefficients on this day but lacks significance. We can conclude for the event that there are no specific effects on the daily total returns, but we do suspect a rise in the CDS spreads, and for the first time affecting the full sample of our banks. This can be due to the centrality of the event with it being in a economically important country in Europe and also because of the unexpectedness of the bail-in. Our expectations of effects being higher at surrounding countries also get confirmed here.

Table 5:SNS Reaal [-5,5], total return index

Note : only one bank from the Netherlands in sample for the total return indices.
'Neighbours' include : Belgium, Germany, France

	Dependent variable:		
	Banks	'Neighbours'	Netherlands
	(1)	(2)	(3)
`EURO STOXX 50`	0.544***	0.733***	1.639***
	(0.036)	(0.051)	(0.250)
EVENT	-0.070	-0.027	**2.094****
	(0.147)	(0.209)	(1.020)
Constant	0.071*	0.135**	-0.336
	(0.043)	(0.061)	(0.296)
Observations	131	131	131
R2	0.643	0.619	0.259
Adjusted R2	0.638	0.613	0.247
Residual Std. Error (df = 128)	0.465	0.658	3.220
F Statistic (df = 2; 128)	115.476***	104.137***	22.371***
Note:		*p<0.1; **p<0.05; ***p<0.01	

Table 6: SNS Reaal [-5,5], Total return index, daily dummy variable

Note : only one bank from the Netherlands in sample for the total return indices. t = '1-02-2013'
'Neighbours include' : Belgium, Germany, France

	Dependent variable:		
	Banks	'Neighbours'	Netherlands
	(1)	(2)	(3)
`EURO STOXX 50`	0.547***	0.748***	1.383***
	(0.039)	(0.055)	(0.233)
t-5	-0.035	-0.027	8.565***
	(0.479)	(0.676)	(2.868)
t-4	-0.227	0.345	-4.730
	(0.479)	(0.675)	(2.864)
t-3	-0.348	-1.002	**7.723*** **
	(0.479)	(0.675)	(2.864)
t-2	-0.203	0.170	0.697
	(0.480)	(0.676)	(2.869)
t-1	-0.062	0.346	-4.445
	(0.481)	(0.678)	(2.877)
t	-0.654	0.216	**7.059** **
	(0.479)	(0.675)	(2.864)
t+1	-0.047	0.343	-4.116
	(0.495)	(0.698)	(2.963)
t+2	0.103	-0.886	**7.762*** **
	(0.480)	(0.676)	(2.871)
t+3	0.489	0.093	**-6.001** **
	(0.482)	(0.679)	(2.882)
t+4	0.080	-0.042	**9.081*** **
	(0.480)	(0.676)	(2.871)
t+5	0.155	0.217	0.199
	(0.481)	(0.677)	(2.875)
Constant	0.071	0.133**	-0.301
	(0.044)	(0.062)	(0.262)
Observations	131	131	131
R2	0.655	0.635	0.464
Adjusted R2	0.620	0.598	0.410
Residual Std. Error (df = 118)	0.477	0.672	2.852
F Statistic (df = 12; 118)	18.642***	17.085***	8.514***

Table 7:SNS Reaal [-5,5], CDS spreads

t = '1-02-2013'

'Neighbours' include : Belgium, Germany, France

	Dependent variable:		
	Banks	'Neighbours'	Netherlands
	(1)	(2)	(3)
`EUROPE BANKS 5Y CDS INDEX`	0.710***	0.719***	0.556***
	(0.070)	(0.075)	(0.074)
t-5	-1.094	-1.485	-0.451
	(1.190)	(1.271)	(1.253)
t-4	0.092	0.028	-0.088
	(1.189)	(1.270)	(1.251)
t-3	1.531	1.138	**2.947****
	(1.188)	(1.269)	(1.250)
t-2	0.577	0.244	0.115
	(1.188)	(1.270)	(1.251)
t-1	0.677	0.607	0.717
	(1.188)	(1.269)	(1.251)
t	0.636	0.279	1.034
	(1.191)	(1.273)	(1.254)
t+1	1.311	1.812	1.757
	(1.210)	(1.293)	(1.274)
t+2	-0.798	-1.459	-1.255
	(1.187)	(1.268)	(1.249)
t+3	0.470	0.963	-0.422
	(1.187)	(1.268)	(1.249)
t+4	0.470	0.912	0.153
	(1.187)	(1.268)	(1.249)
t+5	1.382	1.216	1.243
	(1.196)	(1.278)	(1.259)
Constant	-0.117	-0.073	-0.039
	(0.113)	(0.121)	(0.119)
Observations	131	131	131
R2	0.505	0.483	0.393
Adjusted R2	0.454	0.431	0.331
Residual Std. Error (df = 118)	1.182	1.262	1.244
F Statistic (df = 12; 118)	10.021***	9.191***	6.367***

Table 8:SNS Reaal [-5,5], Daily CDS spreads, constant return model

t = '1-02-2013'
'Neighbours' include : Belgium, Germany, France

	Dependent variable:		
	Banks	'Neighbours'	Netherlands
	(1)	(2)	(3)
t-5	-0.181	-0.561	0.264
	(1.613)	(1.682)	(1.512)
t-4	0.804	0.749	0.470
	(1.613)	(1.682)	(1.512)
t-3	2.124	1.738	3.411**
	(1.613)	(1.682)	(1.512)
t-2	1.260	0.936	0.650
	(1.613)	(1.682)	(1.512)
t-1	1.315	1.253	1.217
	(1.613)	(1.682)	(1.512)
t	1.715	1.371	1.879
	(1.613)	(1.682)	(1.512)
t+1	**3.717****	**4.247****	**3.641****
	(1.613)	(1.682)	(1.512)
t+2	-0.510	-1.168	-1.029
	(1.613)	(1.682)	(1.512)
t+3	0.781	1.279	-0.178
	(1.613)	(1.682)	(1.512)
t+4	0.792	1.238	0.405
	(1.613)	(1.682)	(1.512)
t+5	-0.163	-0.349	0.033
	(1.613)	(1.682)	(1.512)
Constant	-0.460***	-0.420***	-0.308**
	(0.147)	(0.153)	(0.137)
Observations	131	131	131
R2	0.077	0.083	0.103
Adjusted R2	-0.008	-0.002	0.020
Residual Std. Error (df = 119)	1.606	1.675	1.506
F Statistic (df = 11; 119)	0.908	0.974	1.243
Note:		*p<0.1; **p<0.05; ***p<0.01	

6.3 BANK OF CYPRUS AND LAIKI

A big resolution which used the bail-in tool before the implementation of the BRRD is this one in Cyprus and could also be seen as a major example used for the regulation. In march 2013, Cyprus recapitalized its largest systemic bank, the Bank of Cyprus, through an originally estimated EUR 7 billion bail-in resolution. Simultaneously its second largest bank (Cyprus Popular Bank Laiki) also needed to be recapitalized, but for this case the "sale-of-business" tool was used and it was then to be merged with the Bank of Cyprus. This agreement was estimated to be EUR 17 billion. This amount equalled to 100% of Cyprus' GDP and also being at that time one of the largest in financial history. During this resolution even the uninsured depositors were being bailed-in. In the end, to recapitalize the Bank of Cyprus (now merged with Laiki) an estimated 37.5% of its uninsured deposits were converted into full voting shares. We can consider this to be a relatively big amount. The other uninsured depositors were temporarily frozen. The exact total level of bail-in after recapitalization was 47.5%. Remaining parts of recapitalization was done mostly through a standard bail-out approach. For example the government became the major shareholder with a EUR 1.5 billion capital injection.

Something we need to take into account for our results here is that the situation of the Cypriote banks and economy was in an extraordinary bad shape for some years. Leading up to the resolution of these banks, it is estimated that EUR 10-17 billion of deposits was already fled, causing major liquidity problems. Also, Cyprus is a small country which is possibly seen as more of an 'outskirt' of Europe : "All of this (resolution in Cyprus) was bitterly resented by those affected but largely ignored by those not. This may well be because Cyprus was both small and an utter mess, allowing investors to tell themselves that their holdings elsewhere in Europe would never face a similar situation." (James Saft, Reuters)

However, the bail-in of creditors (even up to uninsured depositors), was still unexpected and the amount of bail-in was for the first time relatively big. That is why I expect this event to have caused negative reactions on other banks, especially on other Southern banks like the Greek ones(considering these two were very involved with each other).

Beforehand on march 18 there was an agreement between the Eurogroup and Cyprus to have a tax on insured and uninsured depositors (6.75% and 9.9% respectively).

This was not done in the end because of huge criticism, but this earlier decision could have had an influence on our results so that is why I choose to study this day as an event also. The banking system was also shut down for two weeks and could definitely impact the reactions on the senior debt bail-in announcement.

Results

Looking at the regression tables we actually keep in mind two dates here as previously mentioned, 25 March 2013 and 18 March 2013. We can see them both in table X together because 18 march was 5 trading days before 25 March and thus at the start of our event window. I also ran a specific event study for 18 march but there were no anticipatory effects to be seen.

Daily total returns don't seem to be affected much. We see a significant negative reaction (90% confidence level) the day after 18 march especially for Greek banks (-10%) but these are followed by high coefficients the day after. Greece's banks are pretty involved with Cyprus and also the other way around, so it makes sense we find a stronger reaction here.

The CDS spreads in the market model don't show any abnormal significant reactions. However, the constant return model does indicate statistically significant reactions. CDS spread are higher than expected at the days t-5(18 march), t and t+2. This is showing that the resolution did have an impact on CDS spreads of other European banks, with the effect being highest at the 'Mediterranean' banks (up to 5.7%) as expected. The difference between the two models can be explained by the fact that the market factor itself might be affected to some extent by the event which can mitigate the effects on the banks sample.

Table 9:Cyprus [-5,5], Total return index

	Dependent variable:			
	Banks	Mediterranean	Greece	Cyprus
	(1)	(2)	(3)	(4)
`EURO STOXX 50`	0.512***	1.110***	1.089**	0.610**
	(0.035)	(0.117)	(0.453)	(0.235)
EVENT	-0.096	-0.412	0.177	0.314
	(0.132)	(0.438)	(1.699)	(0.881)
Constant	-0.006	-0.160	-0.411	-0.109
	(0.038)	(0.126)	(0.490)	(0.254)
Observations	131	131	131	131
R2	0.627	0.424	0.043	0.050
Adjusted R2	0.621	0.415	0.028	0.035
Residual Std. Error (df = 128)	0.418	1.383	5.364	2.781
F Statistic (df = 2; 128)	107.612***	47.044***	2.895*	3.378**

Note: **Only 1 Cypriot bank** *p<0.1; **p<0.05; ***p<0.01

Table 10:Cyprus [-5,5], total return index, daily dummy variables

t='25-03-2013' , Only 1 Cypriot bank

	Dependent variable:			
	Banks	Mediterranean	Greece	Cyprus
	(1)	(2)	(3)	(4)
`EURO STOXX 50`	0.507***	1.073***	0.988**	0.640**
	(0.037)	(0.119)	(0.470)	(0.250)
t-5 (18-03-2013)	-0.085	-1.347	1.061	0.536
	(0.428)	(1.385)	(5.463)	(2.910)
t-4	-0.573	**-2.723***	**-10.208***	0.903
	(0.430)	(1.391)	(5.487)	(2.922)
t-3	0.328	1.127	4.890	-0.774
	(0.430)	(1.391)	(5.489)	(2.923)
t-2	0.339	0.963	3.041	0.701
	(0.429)	(1.387)	(5.472)	(2.915)
t-1	0.017	1.620	6.776	0.165
	(0.427)	(1.382)	(5.453)	(2.905)
t	-0.336	-2.068	1.597	0.883
	(0.430)	(1.390)	(5.485)	(2.922)
t+1	-0.427	-1.762	-2.880	0.309
	(0.428)	(1.383)	(5.456)	(2.906)
t+2	0.132	0.472	-0.570	0.805
	(0.429)	(1.389)	(5.479)	(2.918)
t+3	-0.483	-1.283	-2.995	-0.172
	(0.428)	(1.383)	(5.456)	(2.906)
t+4	0.011	0.158	0.405	0.111
	(0.427)	(1.382)	(5.453)	(2.905)
t+5	-0.002	0.158	0.405	0.111
	(0.427)	(1.382)	(5.453)	(2.905)
Constant	-0.006	-0.158	-0.405	-0.111
	(0.039)	(0.126)	(0.496)	(0.264)
Observations	131	131	131	131
R2	0.644	0.473	0.096	0.053
Adjusted R2	0.607	0.420	0.004	-0.044
Residual Std. Error (df = 118)	0.426	1.376	5.430	2.892
F Statistic (df = 12; 118)	17.763***	8.843***	1.045	0.545
Note:		*p<0.1; **p<0.05; ***p<0.01		

Table 11:Cyprus [-5,5], Daily CDS spreads, daily dummy variables

t = '25-03-2013'

	Dependent variable:		
	Banks	Mediterranean	`Banks w/o Mediterranean`
	(1)	(2)	(3)
`EUROPE BANKS 5Y CDS INDEX`	0.853***	1.066***	0.768***
	(0.065)	(0.086)	(0.060)
t-5 (18/03)	1.264	1.754	1.055
	(1.085)	(1.447)	(1.004)
t-4	0.423	-0.241	0.843
	(1.076)	(1.436)	(0.995)
t-3	-0.115	-0.025	-0.179
	(1.064)	(1.420)	(0.985)
t-2	0.643	0.548	0.733
	(1.064)	(1.420)	(0.984)
t-1	0.649	0.072	0.925
	(1.068)	(1.425)	(0.988)
t	1.044	0.987	1.102
	(1.080)	(1.442)	(1.000)
t+1	-0.785	-1.067	-0.676
	(1.083)	(1.445)	(1.002)
t+2	0.537	0.513	0.629
	(1.109)	(1.480)	(1.026)
t+3	-0.346	0.932	-0.906
	(1.064)	(1.420)	(0.985)
t+4	-0.344	-0.603	-0.233
	(1.065)	(1.422)	(0.986)
t+5	0.028	-0.077	0.052
	(1.063)	(1.419)	(0.984)
Constant	-0.004	0.068	-0.023
	(0.101)	(0.134)	(0.093)
Observations	131	131	131
R2	0.663	0.626	0.659
Adjusted R2	0.629	0.588	0.624
Residual Std. Error (df = 118)	1.059	1.413	0.980
F Statistic (df = 12; 118)	19.348***	16.469***	18.963***
Note:			*p<0.1; **p<0.05; ***p<0.01

Table 12:Cyprus [-5,5], Daily CDS spreads, constant return model

t='25-03-2013'

	Dependent variable:		
	Banks	Mediterranean	`Banks w/o Mediterranaen`
	(1)	(2)	(3)
t-5	**4.092****	**5.291****	**3.604****
	(1.666)	(2.140)	(1.517)
t-4	2.584	2.461	2.790*
	(1.666)	(2.140)	(1.517)
t-3	0.473	0.710	0.351
	(1.666)	(2.140)	(1.517)
t-2	1.083	1.098	1.130
	(1.666)	(2.140)	(1.517)
t-1	1.929	1.674	2.079
	(1.666)	(2.140)	(1.517)
t	**3.578****	**4.155***	**3.385****
	(1.666)	(2.140)	(1.517)
t+1	1.915	2.309	1.757
	(1.666)	(2.140)	(1.517)
t+2	**4.688*****	**5.704*****	**4.370*****
	(1.666)	(2.140)	(1.517)
t+3	-0.978	0.141	-1.476
	(1.666)	(2.140)	(1.517)
t+4	0.529	0.489	0.554
	(1.666)	(2.140)	(1.517)
t+5	0.273	0.231	0.274
	(1.666)	(2.140)	(1.517)
Constant	-0.379**	-0.401**	-0.361***
	(0.151)	(0.195)	(0.138)
Observations	131	131	131
R2	0.166	0.142	0.181
Adjusted R2	0.089	0.063	0.105
Residual Std. Error (df = 119)	1.659	2.132	1.511
F Statistic (df = 11; 119)	2.154**	1.791*	2.389**
Note:			*p<0.1; **p<0.05; ***p<0.01

6.4 UK CO-OPERATIVE BANK

This resolution case also took place in 2013, before the BRRD, but at that time the UK legislation permitted effectively the same actions. The Co-operative bank announced its capital shortfall on June 17, 2013, the Regulation authority then set the requirement of a raise of £ 1.5 billion of further CET1 capital. They would do this by making owners of bonds swap their bonds for newly issued shares. Important to note here that the bail-in was a consensual bail-in which had the same working and intentions but does have some differences. "It can be managed by the institution rather than subject to the decisions of resolution authorities, but still meets the same core objectives of a resolution action by keeping the financial institution operational, protecting retail customers, ensuring financial stability and avoiding the use of public funds" (World bank group). Resolution of a financial institution that is imposed on a non-consensual basis is therefore open to a multitude of lawsuits. This makes this resolution a bit different from the others but it's still interesting to research.

Results

For the special case of the consensual bail-in at the UK Co-operative bank we don't see much specific reactions in the total return indices, only 5 days after the event we see a lower than expected return which is significant at the 90% confidence level, however the coefficient of the UK banks in this sample is positive so this is contradictory to our assumption that the contagion effect is most apparent in the country where the bail-in happens. The reaction also being 5 days after the event leaves little room to say this has definitely been caused by the bail-in event.

As for the CDS spreads there are more abnormal effects to be seen. Three days after the event we notice a higher than expected rise in CDS spreads by 4.8% for our full sample of banks. This effect is a apparent at the UK banks(5.5%), the 'Mediterranean' sample(3.7%) and other banks(4.9%). And again we see a negative reaction, thus higher than expected rise in CDS spreads, 5 days after the event as with the total returns for our full sample of banks. Two and three days before the event day there also was a negative reaction for the UK banks respectively. When looking at the regression with one dummy variable for the whole event window (table x) we can also see an abnormal effect on the CDS spreads, being the highest for UK banks as expected (1%).

Table 13:UK Co-operative [-5,5], Total return index, daily dummy variables

t = '17-06-2013'

	Dependent variable:	
	Banks	UK
	(1)	(2)
`EURO STOXX 50`	0.515***	0.702***
	(0.050)	(0.075)
t-5	-0.802	0.490
	(0.561)	(0.840)
t-4	-0.857	-0.420
	(0.565)	(0.847)
t-3	-0.141	-0.331
	(0.562)	(0.842)
t-2	-0.215	0.100
	(0.561)	(0.840)
t-1	0.055	-0.578
	(0.560)	(0.840)
t	-0.488	-0.774
	(0.563)	(0.844)
t+1	-0.554	0.470
	(0.560)	(0.840)
t+2	-0.129	0.178
	(0.562)	(0.842)
t+3	0.625	0.084
	(0.592)	(0.887)
t+4	0.115	-0.746
	(0.566)	(0.848)
t+5	**-1.007***	0.373
	(0.565)	(0.847)
Constant	0.020	0.038
	(0.052)	(0.078)
Observations	131	131
R2	0.535	0.474
Adjusted R2	0.488	0.420
Residual Std. Error (df = 118)	0.558	0.836
F Statistic (df = 12; 118)	11.331***	8.857***
Note:	*p<0.1; **p<0.05; ***p<0.01	

Table 14:UK Co-operative [-5,5], CDS spreads, daily dummy variables

t = '17-06-2013'

	Dependent variable:			
	Banks (1)	UK (2)	Mediterranean (3)	`banks w/o MED,UK` (4)
EUROPE BANKS 5Y CDS INDEX	0.824***	1.159***	0.957***	0.685***
	(0.062)	(0.095)	(0.079)	(0.055)
t-5	1.382	1.207	1.047	1.570*
	(0.930)	(1.427)	(1.178)	(0.829)
t-4	-0.365	-0.382	-0.439	-0.456
	(0.968)	(1.484)	(1.225)	(0.862)
t-3	0.479	**2.780***	0.147	0.204
	(0.930)	(1.427)	(1.178)	(0.829)
t-2	0.328	0.608	0.159	0.339
	(0.933)	(1.431)	(1.182)	(0.831)
t-1	-0.390	-0.282	-0.452	-0.463
	(0.933)	(1.432)	(1.182)	(0.831)
t	0.046	0.197	-0.052	-0.095
	(0.931)	(1.427)	(1.179)	(0.829)
t+1	0.308	1.696	0.180	0.167
	(0.933)	(1.431)	(1.181)	(0.831)
t+2	-0.745	-1.508	-0.062	-1.047
	(0.930)	(1.427)	(1.178)	(0.829)
t+3	**4.767*****	**5.508*****	**3.706*****	**4.918*****
	(0.971)	(1.490)	(1.230)	(0.865)
t+4	-0.704	-0.437	-0.803	-0.802
	(0.960)	(1.472)	(1.216)	(0.855)
t+5	**2.124****	**3.030****	0.687	**2.837*****
	(0.961)	(1.473)	(1.217)	(0.856)
Constant	-0.008	0.062	0.031	-0.036
	(0.088)	(0.134)	(0.111)	(0.078)
Observations	131	131	131	131
R2	0.728	0.688	0.658	0.725
Adjusted R2	0.700	0.656	0.623	0.697
Residual Std. Error (df = 118)	0.926	1.421	1.173	0.825
F Statistic (df = 12; 118)	26.265***	21.651***	18.894***	25.974***
Note:				*p<0.1; **p<0.05; ***p<0.01

Table 15:UK [-5,5], CDS spreads

	Dependent variable:			
	Banks	UK	Mediterranean	`banks w/o MED,UK`
	(1)	(2)	(3)	(4)
EUROPE BANKS 5Y CDS	0.879***	1.218***	0.990***	0.751***
	(0.061)	(0.090)	(0.072)	(0.057)
EVENT	**0.569***	**1.035****	0.322	**0.548***
	(0.328)	(0.486)	(0.388)	(0.308)
Constant	0.012	0.084	0.043	-0.012
	(0.094)	(0.139)	(0.111)	(0.088)
Observations	131	131	131	131
R2	0.659	0.636	0.627	0.619
Adjusted R2	0.654	0.630	0.621	0.613
Residual Std. Error (df = 128)	0.994	1.474	1.176	0.934
F Statistic (df = 2; 128)	123.925***	111.631***	107.556***	103.842***
Note:			*p<0.1; **p<0.05; ***p<0.01	

6.5 REGULATION EVENTS

I choose to include two event dates which entail agreements on the regulation of the Single resolution mechanism (SRM), this included the bail-in as major component, to investigate possible effects on our sample of banks. Although it is important to note that because these decisions are not purely focused on the bail-in other reasons of effects might come in to play. For the research of these events I decided to take another approach and split up the sample into participating and non-participating countries. Because these regulations are not applied in all the countries of my sample it should be interesting to see the difference and if the countries not involved do still experience abnormal effects. It should be logical that I expect the most effects for the participating countries however. I also include a regression on the G-SIB(Global Systemically important banks) banks of the participating countries to see if there is any difference. These G-SIBS are the biggest financial institutions and because of that they are required to hold more loss absorbing capital since January 1, 2016. I indicated which of the banks are considered to be as G-SIB in the sample overview.

The 'participating' countries are Eurozone countries and countries who are part of the 'close cooperation' program at this time.

Here is a list of the non-participating countries in my sample: United Kingdom, Switzerland, Norway, Denmark, Sweden, Romania, Bulgaria, Czech Republic, Croatia, Hungary.

20 March 2014: "European Parliament and Council back Commission's proposal for a single resolution mechanism: a major step towards completing the banking union." (European commission statement)

Results

Looking at the total return indices we notice statistically significant reactions around the event date (t-4 , t+1 and t+3). We can also see a clear difference between the participating countries and the non-participating countries as can be expected. A possible indication that the regulation caused lower expected profitability due to these capital requirements and contributions to the resolution fund.

For the CDS spreads in the constant return model we can even see large abnormal effects on the event day itself, with a higher than expected CDS spread increase of 2.5% for the participating countries. The G-SIBs even experience an abnormal effect of +6% on the CDS spreads on the event day. Quite surprising is that even the non-participating countries are effected (-3.3%). This might indicate expectations that they will apply the same rules for resolution in their own regulations.

Comparing to the CDS market model we see the same trend but effects overall are lower again due to the market factor.

Table 16: Proposal [-5,5], Total return index

	Dependent variable:			
	Participating	`Non-participating`	`G-SIB`	Mediterranean
	(1)	(2)	(3)	(4)
`EURO STOXX 50`	0.787***	0.314***	1.307***	1.001***
	(0.061)	(0.034)	(0.070)	(0.099)
EVENT	**-0.317***	-0.086	**-0.455****	-0.146
	(0.178)	(0.099)	(0.205)	(0.290)
Constant	0.139***	0.074**	0.059	0.147*
	(0.052)	(0.029)	(0.060)	(0.084)
Observations	131	131	131	131
R2	0.569	0.402	0.733	0.444
Adjusted R2	0.562	0.393	0.729	0.436
Residual Std. Error (df = 128)	0.565	0.315	0.650	0.920
F Statistic (df = 2; 128)	84.551***	43.059***	175.838***	51.192***
Note:			*p<0.1; **p<0.05; ***p<0.01	

Table 17: Proposal [-5,5], Daily total return index, daily dummy variables

t = '20-03-2014'

	Dependent variable:			
	Participating	`Non-participating`	`G-SIB`	Mediterranean
	(1)	(2)	(3)	(4)
`EURO STOXX 50`	0.782***	0.315***	1.306***	0.981***
	(0.064)	(0.037)	(0.074)	(0.104)
t-5	0.282	0.276	-0.401	0.742
	(0.575)	(0.327)	(0.659)	(0.931)
t-4	**-1.099***	-0.520	**-1.264***	-1.030
	(0.567)	(0.323)	(0.650)	(0.918)
t-3	0.649	0.119	0.424	**1.751***
	(0.573)	(0.326)	(0.656)	(0.928)
t-2	-0.043	0.068	0.134	-0.029
	(0.567)	(0.323)	(0.650)	(0.919)
t-1	-0.072	0.148	-0.008	0.407
	(0.566)	(0.322)	(0.648)	(0.916)
t	-0.263	-0.288	0.027	0.021
	(0.566)	(0.322)	(0.649)	(0.917)
t+1	-0.620	-0.237	**-1.855*****	-1.190
	(0.566)	(0.322)	(0.648)	(0.917)
t+2	-0.655	-0.048	0.171	-1.161
	(0.573)	(0.326)	(0.657)	(0.928)
t+3	**-1.381****	0.063	-0.938	**-1.596***
	(0.572)	(0.326)	(0.656)	(0.927)
t+4	0.015	-0.320	-0.807	0.350
	(0.569)	(0.324)	(0.652)	(0.922)
t+5	-0.298	-0.215	-0.486	0.156
	(0.566)	(0.322)	(0.648)	(0.916)
Constant	0.139***	0.074**	0.059	0.149*
	(0.052)	(0.029)	(0.059)	(0.084)
Observations	131	131	131	131
R2	0.606	0.430	0.757	0.496
Adjusted R2	0.566	0.372	0.733	0.445
Residual Std. Error (df = 118)	0.563	0.321	0.646	0.913
F Statistic (df = 12; 118)	15.117***	7.428***	30.705***	9.673***

Note: *p<0.1; **p<0.05; ***p<0.01

Table 18: Proposal [-5,5], CDS spreads, constant return model, daily dummy variables

t = '20-03-2014'

	Dependent variable:			
	Participating	`Non-participating`	G-SIB	Mediterranean
	(1)	(2)	(3)	(4)
t-5	**2.354***	**2.199***	3.314	**2.922***
	(1.239)	(1.185)	(2.334)	(1.565)
t-4	1.063	1.016	1.175	1.062
	(1.239)	(1.185)	(2.334)	(1.565)
t-3	-1.648	-1.143	-3.402	-1.631
	(1.239)	(1.185)	(2.334)	(1.565)
t-2	-1.074	-0.597	-2.032	-1.572
	(1.239)	(1.185)	(2.334)	(1.565)
t-1	-0.476	-0.033	-1.215	-0.981
	(1.239)	(1.185)	(2.334)	(1.565)
t	**2.583****	**3.315*****	**6.004****	1.752
	(1.239)	(1.185)	(2.334)	(1.565)
t+1	-0.170	-0.207	-0.741	0.085
	(1.239)	(1.185)	(2.334)	(1.565)
t+2	0.694	0.281	1.429	0.618
	(1.239)	(1.185)	(2.334)	(1.565)
t+3	0.372	-0.298	-0.130	1.021
	(1.239)	(1.185)	(2.334)	(1.565)
t+4	-0.177	-0.739	-1.076	-0.202
	(1.239)	(1.185)	(2.334)	(1.565)
t+5	0.298	0.209	0.307	0.585
	(1.239)	(1.185)	(2.334)	(1.565)
Constant	-0.333***	-0.216**	-0.346	-0.547***
	(0.113)	(0.108)	(0.212)	(0.142)
Observations	131	131	131	131
R2	0.091	0.104	0.097	0.066
Adjusted R2	0.007	0.021	0.014	-0.020
Residual Std. Error (df = 119)	1.234	1.180	2.324	1.558
F Statistic (df = 11; 119)	1.080	1.253	1.167	0.769
Note:			*p<0.1; **p<0.05; ***p<0.01	

Table 19: Proposal [-5,5], CDS spreads, Market model, daily dummy variables

t = '20-03-2014'

	Dependent variable:			
	Participating	`Non-participating`	G-SIB	Mediterranean
	(1)	(2)	(3)	(4)
`EUROPE BANKS 5Y CDS INDEX`	0.537***	0.472***	0.955***	0.716***
	(0.064)	(0.064)	(0.124)	(0.078)
t-5	1.601	1.537	1.975	1.918
	(0.989)	(0.989)	(1.922)	(1.205)
t-4	0.637	0.641	0.416	0.493
	(0.986)	(0.986)	(1.917)	(1.202)
t-3	-1.207	-0.757	-2.619	-1.045
	(0.986)	(0.986)	(1.917)	(1.202)
t-2	0.009	0.355	-0.106	-0.128
	(0.993)	(0.993)	(1.930)	(1.211)
t-1	-0.298	0.123	-0.898	-0.743
	(0.985)	(0.985)	(1.915)	(1.201)
t	1.381	**2.259****	**3.867****	0.150
	(0.995)	(0.995)	(1.934)	(1.213)
t+1	0.026	-0.034	-0.391	0.348
	(0.985)	(0.985)	(1.915)	(1.201)
t+2	0.249	-0.111	0.636	0.024
	(0.986)	(0.986)	(1.917)	(1.202)
t+3	0.100	-0.537	-0.613	0.659
	(0.985)	(0.985)	(1.915)	(1.201)
t+4	0.269	-0.348	-0.284	0.392
	(0.986)	(0.986)	(1.917)	(1.202)
t+5	0.071	0.010	-0.097	0.282
	(0.985)	(0.985)	(1.915)	(1.201)
Constant	-0.130	-0.037	0.014	-0.277**
	(0.093)	(0.093)	(0.180)	(0.113)
Observations	131	131	131	131
R2	0.431	0.387	0.398	0.455
Adjusted R2	0.373	0.324	0.337	0.400
Residual Std. Error (df = 118)	0.981	0.980	1.906	1.195
F Statistic (df = 12; 118)	7.437***	6.195***	6.503***	8.214***

Note: *p<0.1; **p<0.05; ***p<0.01

15 April 2014 : The European Parliament reached an agreement on the SRM and the SRF.

Results

The day before the EU parliament agrees on the SRM and the EU banking union we see clear abnormal effect in the total returns, -2% lower than expected for the participating banks. Even the non-participating banks experience these negative effects. We can see the biggest effect on the Mediterranean banks (-3.3% on 99 confidence level) a day before the announcement. The G-SIBS experience the lowest effects here, possibly because they already had high negative effects on the proposal event.

It is not totally surprising that this effect comes before the Parliament decision on the matter, it could be led by expectations that were present after several outings of support or information could have been leaked.

We can confirm these negative effects for the CDS spread two days before the event as well in the constant return model. Again the G-SIBs with the highest abnormal effect (almost +6%). In comparison to the CDS market model we see less effects as expected but still find that G-SIB has a statistically significant effect and this in line with the constant return model.

The reason why the G-SIBs are most affected might be that the bail-out expectations at these institutions were the highest and also because of the higher capital requirements.

Table 20: Parliament agreement[-5,5], total return index

	Dependent variable:			
	Participating	`non-participating`	G-SIB	Mediterranean
	(1)	(2)	(3)	(4)
`EURO STOXX 50`	0.656***	0.378***	1.320***	1.036***
	(0.050)	(0.040)	(0.063)	(0.096)
EVENT	**-0.451*** **	-0.179	-0.325	**-0.774** **
	(0.158)	(0.129)	(0.202)	(0.306)
Constant	0.136***	0.093**	0.084	0.188**
	(0.046)	(0.037)	(0.058)	(0.089)
Observations	131	131	131	131
R2	0.589	0.412	0.774	0.489
Adjusted R2	0.582	0.403	0.770	0.481
Residual Std. Error (df = 128)	0.501	0.408	0.640	0.972
F Statistic (df = 2; 128)	91.622***	44.791***	218.839***	61.235***
Note:			*p<0.1; **p<0.05; ***p<0.01	

Table 21: Parliament agreement[-5,5], total return index, daily dummy variables

t = '15-04-2014'

Note: G-SIB consists only of G-SIB banks from participating countries.

	Dependent variable:			
	Participating	`non-participating`	G-SIB	Mediterranean
	(1)	(2)	(3)	(4)
`EURO STOXX 50`	0.649***	0.382***	1.314***	1.012***
	(0.050)	(0.042)	(0.067)	(0.099)
t-5	**-1.136****	-0.206	**-1.222***	**-2.271****
	(0.491)	(0.407)	(0.651)	(0.961)
t-4	-0.614	0.091	-0.760	-1.023
	(0.491)	(0.407)	(0.651)	(0.960)
t-3	-0.360	-0.027	-0.513	-0.623
	(0.493)	(0.408)	(0.654)	(0.964)
t-2	-0.506	-0.648	0.183	-0.823
	(0.494)	(0.410)	(0.656)	(0.968)
t-1	**-2.003*****	**-1.267*****	**-1.084***	**-3.324*****
	(0.492)	(0.407)	(0.652)	(0.962)
t	-0.198	0.384	-0.297	-0.963
	(0.495)	(0.410)	(0.657)	(0.969)
t+1	0.110	0.177	0.303	0.161
	(0.497)	(0.411)	(0.659)	(0.971)
t+2	0.046	-0.049	0.332	0.577
	(0.491)	(0.407)	(0.652)	(0.961)
t+3	-0.136	-0.087	-0.084	-0.189
	(0.491)	(0.407)	(0.651)	(0.960)
t+4	-0.161	-0.045	-0.084	-0.189
	(0.491)	(0.407)	(0.651)	(0.960)
t+5	0.003	-0.292	-0.351	0.157
	(0.495)	(0.410)	(0.657)	(0.969)
Constant	0.136***	0.093**	0.084	0.189**
	(0.045)	(0.037)	(0.059)	(0.087)
Observations	131	131	131	131
R2	0.639	0.467	0.786	0.544
Adjusted R2	0.602	0.413	0.764	0.498
Residual Std. Error (df = 118)	0.489	0.405	0.648	0.956
F Statistic (df = 12; 118)	17.410***	8.609***	36.081***	11.738***

Table 22: Parliament agreement[-5,5], CDS spreads constant return model, daily dummy variables

t = '15-04-2014'

	Dependent variable:			
	Participating	`Non-participating`	G-SIB	Mediterranean
	(1)	(2)	(3)	(4)
t-5	0.112	-0.646	0.203	0.267
	(1.195)	(1.074)	(2.254)	(1.553)
t-4	-1.369	-1.362	-3.129	-1.189
	(1.195)	(1.074)	(2.254)	(1.553)
t-3	-0.961	-0.666	0.396	-1.978
	(1.195)	(1.074)	(2.254)	(1.553)
t-2	**2.442****	**2.096***	**5.822****	**3.655****
	(1.195)	(1.074)	(2.254)	(1.553)
t-1	-0.682	-0.824	-1.737	0.232
	(1.195)	(1.074)	(2.254)	(1.553)
t	0.254	0.517	1.819	1.127
	(1.195)	(1.074)	(2.254)	(1.553)
t+1	-0.670	0.133	-1.172	-0.182
	(1.195)	(1.074)	(2.254)	(1.553)
t+2	-0.300	0.084	-0.540	-0.204
	(1.195)	(1.074)	(2.254)	(1.553)
t+3	0.338	0.197	0.348	0.564
	(1.195)	(1.074)	(2.254)	(1.553)
t+4	0.276	0.195	0.332	0.505
	(1.195)	(1.074)	(2.254)	(1.553)
t+5	-1.441	**-1.857***	-2.134	-1.282
	(1.195)	(1.074)	(2.254)	(1.553)
Constant	-0.317***	-0.194**	-0.333	-0.500***
	(0.109)	(0.098)	(0.205)	(0.141)
Observations	131	131	131	131
R2	0.067	0.078	0.086	0.073
Adjusted R2	-0.019	-0.007	0.002	-0.013
Residual Std. Error (df = 119)	1.190	1.070	2.245	1.546
F Statistic (df = 11; 119)	0.775	0.919	1.022	0.850
Note:			*p<0.1; **p<0.05; ***p<0.01	

Table 23: Parliament [-5,5], CDS market model, daily dummy variables

t = '15-04-2014'

	Dependent variable:			
	Participating	`Non-participating`	G-SIB	Mediterranean
	(1)	(2)	(3)	(4)
`EUROPE BANKS 5Y CDS INDEX`	0.544***	0.461***	0.979***	0.733***
	(0.059)	(0.055)	(0.115)	(0.075)
t-5	-0.013	-0.752	-0.021	0.099
	(0.914)	(0.855)	(1.780)	(1.156)
t-4	-0.552	-0.669	-1.659	-0.089
	(0.918)	(0.859)	(1.788)	(1.162)
t-3	-0.058	0.099	2.021	-0.762
	(0.919)	(0.860)	(1.790)	(1.163)
t-2	1.118	0.974	**3.440***	1.873
	(0.925)	(0.865)	(1.801)	(1.170)
t-1	-1.151	-1.222	-2.583	-0.401
	(0.916)	(0.856)	(1.782)	(1.158)
t	0.265	0.527	1.840	1.143
	(0.914)	(0.855)	(1.780)	(1.156)
t+1	-0.028	0.677	-0.017	0.682
	(0.917)	(0.857)	(1.785)	(1.160)
t+2	-0.397	0.002	-0.715	-0.334
	(0.914)	(0.855)	(1.780)	(1.156)
t+3	0.082	-0.020	-0.112	0.220
	(0.915)	(0.855)	(1.780)	(1.157)
t+4	0.071	0.022	-0.037	0.230
	(0.914)	(0.855)	(1.780)	(1.157)
t+5	-0.755	-1.276	-0.900	-0.359
	(0.917)	(0.857)	(1.785)	(1.160)
Constant	-0.111	-0.020	0.038	-0.223**
	(0.086)	(0.080)	(0.167)	(0.109)
Observations	131	131	131	131
R2	0.458	0.422	0.435	0.490
Adjusted R2	0.403	0.363	0.378	0.438
Residual Std. Error (df = 118)	0.910	0.851	1.772	1.152
F Statistic (df = 12; 118)	8.321***	7.172***	7.579***	9.452***
Note:			*p<0.1; **p<0.05; ***p<0.01	

6.6 BANCO ESPIRITO SANTO

In mid-2014 Banco Espirito Santo (BES) was the third largest bank in the Portuguese banking system and was considered a significant credit institution by the European Central Bank under the Single Supervisory Mechanism. Following huge unexpected losses a substantial reduction of its CET 1 ratio was inflicted (the banks EUR 2.1 billion capital buffer was exhausted), credit ratings were lowered and caused a significant deterioration of the public perception of BES. The market-value of BES fell harsh and trading of these shares was suspended on August 1,2014. Banco de Portugal applied a resolution measure to BES on August 3, 2014. The majority of its activities were transferred to a bridge bank, Novo Banco. Shareholders and subordinated debtholders had to remain in the bad bank. Other equity capital for the bridge bank was provided by the Resolution Fund. This decision had to be taken urgently due to the imminent risk that BES was not able to meet its payments, which would have had very serious consequences for the financial stability and for the Portuguese economy.

Although that the level of creditors that were bailed-in was not high and the fact that they were not totally wiped out to zero, the BES resolution could have given a strong signal in Europe as it was the first time the resolution after the agreement on the BRRD and bail-in requirements.

Results

There is a clear negative effect to be seen on the total returns, more specifically during the two days following the event. As expected, effects were stronger on the countries of the Mediterranean sample due to similar economic situations and sentiment of more vulnerable banks. We also see that this contagion effect seems to be limited on this sample and not on the full sample of banks in our investigations. We also see this contagion effect appear at our other Portuguese bank on the same day.

Looking at the CDS spreads we also identify strong significant reactions, here both for the Mediterranean sample as well as the full sample of banks. Although it fluctuates around the event with negative and positive coefficients, if we zoom in on these days with the window [-2,2] we can still see a statistically significant negative effect, meaning the CDS spreads rised by 1.3% more than expected for the ‘Mediterranean’ sample. The coefficients for our Portuguese bank is also highly positive but because this is only one bank we can only suspect this effect here.

Table 24: Espirito [-5,5], Total return index

Note: Only one Portuguese bank in sample

	Dependent variable:		
	Banks	Mediteraan	Portugees
	(1)	(2)	(3)
`EURO STOXX 50`	0.606***	1.109***	1.463***
	(0.046)	(0.116)	(0.446)
EVENT	-0.159	-0.672*	-2.213
	(0.141)	(0.356)	(1.369)
Constant	0.070*	0.110	0.060
	(0.040)	(0.102)	(0.394)
Observations	131	131	131
R2	0.588	0.442	0.104
Adjusted R2	0.582	0.433	0.090
Residual Std. Error (df = 128)	0.443	1.120	4.314
F Statistic (df = 2; 128)	91.487***	50.689***	7.464***
Note:		*p<0.1; **p<0.05; ***p<0.01	

Table 25: Espirito [-5,5], Total return index, Daily dummy variables

t='4-08-2014', Note : ONLY 1 PORTUGUESE BANK IN SAMPLE

	Dependent variable:			
	Banks Mediterranean	Portugees	Banks w/o mediteraan	
	(1)	(2)	(3)	(4)
`EURO STOXX 50`	0.614***	1.140***	1.355***	0.476***
	(0.047)	(0.119)	(0.459)	(0.037)
t-5	-0.282	-0.398	-2.603	-0.230
	(0.441)	(1.103)	(4.270)	(0.342)
t-4	-0.354	-1.431	-3.297	-0.055
	(0.442)	(1.105)	(4.278)	(0.343)
t-3	0.672	1.576	0.058	0.452
	(0.442)	(1.106)	(4.281)	(0.343)
t-2	-0.135	-0.273	-2.139	-0.080
	(0.449)	(1.122)	(4.341)	(0.348)
t-1	0.236	0.438	-3.977	0.228
	(0.446)	(1.115)	(4.317)	(0.346)
t	-0.123	0.175	6.168	-0.260
	(0.441)	(1.103)	(4.270)	(0.342)
t+1	-0.719	**-3.030*** **	-3.602	-0.113
	(0.441)	(1.103)	(4.270)	(0.342)
t+2	**-0.999** **	**-2.869** **	**-14.201*** **	-0.399
	(0.442)	(1.106)	(4.282)	(0.343)
t+3	0.327	-0.394	0.349	0.507
	(0.445)	(1.113)	(4.308)	(0.346)
t+4	-0.504	-0.604	-3.350	-0.451
	(0.441)	(1.103)	(4.271)	(0.343)
t+5	0.168	-0.456	1.796	0.308
	(0.446)	(1.114)	(4.314)	(0.346)
Constant	0.070*	0.109	0.062	0.060*
	(0.040)	(0.100)	(0.388)	(0.031)
Observations	131	131	131	131
R2	0.627	0.505	0.198	0.619
Adjusted R2	0.589	0.455	0.116	0.581
Residual Std. Error (df = 118)	0.439	1.098	4.252	0.341
F Statistic (df = 12; 118)	16.549***	10.045***	2.425***	16.006***
Note:			*p<0.1; **p<0.05; ***p<0.01	

Table 26:Espirito [0,3], Total return index

Note : ONLY 1 PORTUGUESE BANK IN SAMPLE

	Dependent variable:		
	Banks	Mediterranean	Portuguese
	(1)	(2)	(3)
`EURO STOXX 50`	0.607***	1.145***	1.923***
	(0.043)	(0.111)	(0.420)
EVENT	-0.309	**-1.394****	-2.384
	(0.214)	(0.549)	(2.085)
Constant	-0.003	-0.023	-0.101
	(0.037)	(0.096)	(0.363)
Observations	131	131	131
R2	0.619	0.485	0.156
Adjusted R2	0.613	0.476	0.143
Residual Std. Error (df = 128)	0.419	1.076	4.083
F Statistic (df = 2; 128)	103.840***	60.159***	11.814***
Note:		*p<0.1; **p<0.05; ***p<0.01	

Table 27:Espirito [-5,5], CDS spreads, daily dummy variables

T = '4-08-2014'

	Dependent variable:			
	`Banks w/o Mediterranean`	Mediterranean	Portuguese	Espirito
	(1)	(2)	(3)	(4)
EUROPE BANKS 5Y CDS INDEX'	0.491***	0.808***	1.044***	1.606***
	(0.047)	(0.074)	(0.107)	(0.220)
t-5	0.109	0.454	0.849	3.714
	(0.969)	(1.532)	(2.226)	(4.587)
t-4	-0.200	0.447	0.689	4.475
	(0.969)	(1.532)	(2.226)	(4.587)
t-3	-0.438	-0.913	-0.456	2.305
	(0.969)	(1.533)	(2.226)	(4.587)
t-2	**5.276*** **	**8.072*** **	**16.391*** **	**56.747*** **
	(0.973)	(1.538)	(2.234)	(4.604)
t-1	**-4.063*** **	**-4.580*** **	**-6.557*** **	**-13.272** **
	(1.086)	(1.718)	(2.495)	(5.141)
t	**2.484** **	**4.600*** **	**-1.911**	**-29.789*** **
	(1.034)	(1.634)	(2.374)	(4.892)
t+1	**-1.803** *	**-3.490** **	-3.351	**-8.448** *
	(0.972)	(1.537)	(2.233)	(4.602)
t+2	1.183	1.419	1.770	-2.532
	(0.971)	(1.535)	(2.230)	(4.596)
t+3	0.518	0.646	2.238	-3.748
	(0.979)	(1.547)	(2.248)	(4.632)
t+4	-0.465	-1.098	-5.698**	-16.710***
	(0.975)	(1.542)	(2.240)	(4.616)
t+5	0.835	0.318	1.612	
	(1.001)	(1.583)	(2.299)	
Constant	-0.076	-0.047	0.198	0.839**
	(0.088)	(0.140)	(0.203)	(0.418)
Observations	131	131	131	131
R2	0.556	0.580	0.599	0.710
Adjusted R2	0.511	0.537	0.558	0.681
Residual Std. Error (df = 118)	0.965	1.526	2.216	4.567
F Statistic (df = 12; 118)	12.301***	13.570***	14.662***	24.125***
Note:				*p<0.1; **p<0.05; ***p<0.01

Table 28 : Espirito [-2,2], CDS spreads

	Dependent variable:			
	`Banks w/Mediteraan`	Mediteraan	Portugees	Espirito
	(1)	(2)	(3)	(4)
`EUROPE BANKS 5Y CDS INDEX`	0.366***	0.630***	0.890***	1.549***
	(0.046)	(0.071)	(0.110)	(0.304)
EVENT	0.717	**1.348***	1.393	0.588
	(0.514)	(0.797)	(1.234)	(3.421)
Constant	-0.091	-0.069	0.179	0.832
	(0.103)	(0.159)	(0.247)	(0.684)
Observations	125	125	125	125
R2	0.359	0.410	0.361	0.177
Adjusted R2	0.348	0.400	0.350	0.164
Residual Std. Error (df = 122)	1.122	1.741	2.696	7.476
F Statistic (df = 2; 122)	34.152***	42.390***	34.430***	13.120***
Note:		*p<0.1; **p<0.05; ***p<0.01		

6.7 ANDELSKASSEN JAK SLAGELSE

On October 5, 2015 the Danish Financial Supervisory Authority (DFSA) declared that Andelskassen was likely to fail, after solvency requirements in the recovery plan were not met. The financial stability company (Finansiel Stabilitet) then decided that the conditions for resolution were fulfilled and it was in the public interest to resolve Andelskassen. After making valuations and taking into account the necessary requirements the Financiel Stabilitet decided to which extent they would apply the bail-in tool.

As prescribed Financiel stabilitet replaced the institution's management and board of directors and took control. The bridge bank tool was used (Broinstitut I A/S) and a bail-in by owners and creditors followed.

Important to note in this case is that the basic banking services continued uninterrupted. (Thus, customers had uninterrupted access to basic banking services even after Finansiel Stabilitet's takeover.)

All the creditors and owners had the Danish citizenship. All relevant capital instruments were written down to zero, bail-in of subordinated and some non-subordinated obligations and cancellation of contributed capital was executed. Covered depositors were protected as expected under the Deposit Guarantee Scheme, however In this case also uninsured depositors were bailed-in to some extent. After bail-in of the creditors, new capital was injected into Andelskassen by the resolution fund and the balance was restored. The case thus represents a hybrid application of a bridge bank set-up and bail-in. But the total amount of bail-in was relatively small, indicating a loss of around DKK 25 million.

This bail-in happened in combination with a bridge bank, but also happened after the BRRD regulation was installed and for Denmark it is the second bail-in case after Amagerbanken so we expect less of a market reaction here. It is interesting to see that both cases in Denmark (who have their own resolutions regulations) did involve the bail-in of uninsured deposits. The surprise effects should definitely be lower, Denmark does not belong to the Eurozone and Andelskassen was a pretty small bank resulting in a relatively low bail-in amount.

Results

Although the high level of creditors(even uninsured depositors) that was affected during the resolution of Andelskassen, we don't see any negative abnormal reactions. For the total returns we don't find any noticeable reaction and for the CDS spreads we even find a statistically significant positive reaction on the event day and the day after with a significant drop of -3.2 % for the our full sample of banks and an even higher drop (-3.4%) for Scandinavian banks on the event day. These negative coefficients remain until the end of our event window, with another significant lower return than expected two days after the event. We see a similar pattern for the Danish bank but for the CDS we only have one Danish bank in sample again.

Table 29:Andelskassen [-5,5], Total return index

	Dependent variable:		
	Banks	Scandinavian	Danish
	(1)	(2)	(3)
`EURO STOXX 50`	0.543***	0.660***	0.315***
	(0.026)	(0.036)	(0.035)
EVENT	-0.092	0.166	-0.306
	(0.144)	(0.204)	(0.194)
Constant	0.020	0.063	0.121**
	(0.042)	(0.059)	(0.056)
Observations	131	131	131
R2	0.779	0.725	0.397
Adjusted R2	0.776	0.721	0.387
Residual Std. Error (df = 128)	0.455	0.644	0.613
F Statistic (df = 2; 128)	225.565***	168.859***	42.080***
Note:		*p<0.1; **p<0.05; ***p<0.01	

Table 30: Andelskassen [-5,5], Total return index, daily dummy variables

t = '05-10-2015'

	Dependent variable:		
	Banks (1)	Scandinavian (2)	Danish (3)
`EURO STOXX 50`	0.534***	0.663***	0.318***
	(0.027)	(0.039)	(0.037)
t-5	-0.475	0.200	-0.250
	(0.462)	(0.673)	(0.635)
t-4	-0.262	0.073	-1.024
	(0.459)	(0.667)	(0.630)
t-3	-0.466	0.340	-0.203
	(0.463)	(0.674)	(0.636)
t-2	0.262	0.586	0.233
	(0.459)	(0.668)	(0.631)
t-1	-0.010	0.352	-0.150
	(0.459)	(0.668)	(0.631)
t	0.857*	0.033	-0.456
	(0.468)	(0.680)	(0.643)
t+1	-0.297	-0.485	-0.571
	(0.459)	(0.668)	(0.631)
t+2	0.335	0.419	0.383
	(0.459)	(0.667)	(0.630)
t+3	-0.078	0.425	-0.129
	(0.459)	(0.667)	(0.630)
t+4	-0.158	-0.139	-0.461
	(0.459)	(0.668)	(0.631)
t+5	-0.671	-0.001	-0.749
	(0.459)	(0.667)	(0.630)
Constant	0.019	0.064	0.121**
	(0.042)	(0.061)	(0.057)
Observations	131	131	131
R2	0.795	0.730	0.418
Adjusted R2	0.774	0.703	0.358
Residual Std. Error (df = 118)	0.457	0.664	0.628
F Statistic (df = 12; 118)	38.071***	26.590***	7.048***
Note:		*p<0.1; **p<0.05; ***p<0.01	

Table 31:Andelskassen [-5,5], CDS spreads, Daily dummy variables

Note: Only one Danish bank in sample, t = '05-10-2015'

	Dependent variable:		
	Banks	Scandinavian	Danish
	(1)	(2)	(3)
`EUROPE BANKS 5Y CDS INDEX`	0.003	0.007	0.015
	(0.009)	(0.009)	(0.014)
t-5	2.313	2.419	2.111
	(1.687)	(1.643)	(2.592)
t-4	1.473	**5.722*** **	1.856
	(1.687)	(1.643)	(2.592)
t-3	-0.604	0.343	-2.226
	(1.687)	(1.643)	(2.592)
t-2	-0.686	-0.186	-0.349
	(1.687)	(1.643)	(2.592)
t-1	-0.213	0.032	-0.932
	(1.687)	(1.643)	(2.592)
t	**-3.197***	**-3.429** **	**-7.030*** **
	(1.687)	(1.644)	(2.592)
t+1	-2.392	-2.331	-2.592
	(1.687)	(1.643)	(2.592)
t+2	**-2.933***	**-3.025***	-3.051
	(1.688)	(1.644)	(2.593)
t+3	0.840	-0.549	-0.185
	(1.687)	(1.643)	(2.592)
t+4	-2.212	-1.806	-2.906
	(1.687)	(1.643)	(2.592)
t+5	-1.290	-0.329	-0.880
	(1.687)	(1.643)	(2.592)
Constant	0.215	0.154	0.174
	(0.154)	(0.150)	(0.237)
Observations	131	131	131
R2	0.108	0.184	0.108
Adjusted R2	0.017	0.101	0.017
Residual Std. Error (df = 118)	1.680	1.636	2.581
F Statistic (df = 12; 118)	1.185	2.211**	1.192
Note:		*p<0.1; **p<0.05; ***p<0.01	

6.8 FOUR ITALIAN BANKS

On November 22, 2015 four Italian banks entered resolution simultaneously due to insolvency(Banca Marche, Cassa di Risparmio di Ferrara, Banca Etruria e CariChieti). With the bail-in regulation in mind (application as of 1 January 2016) the shareholders and subordinated debt were bailed-in and for each bank a “good bridge bank” was used together with one mutual bad bank. Shares and convertible bonds were thus zeroed(Total loss of about 430 million euro), however senior bondholders were not being touched. This marked the very first case of a “proper bail-in” in Italy although being relatively small. The Italian resolution fund contributed around EUR 3.6 billion in total: 1.7 billion to absorb losses in the original banks, 1.8 billion to recapitalize the good banks, and 140 million minimum capital injection to the bad bank. However, because the resolution fund was only started recently three large Italian banks had to advance this amount. Thanks to the injections the four new banks were able to continue their operations without interruptions.

I expect a negative reaction at Italian banks because at the time Italy had a very high level of bank bonds held by the household sector (about 30% in September 2015). These parties usually have limited awareness of the risk and limited diversification in their portfolios leading potentially to a higher surprise when these bonds were being bailed-in for the first time in Italy. In April 2016 the Italian Government even refunded the retail investors of those four banks through an intervention of the Italian Deposit Guarantee Fund FITD, showing how households kept claiming their money and leading to a very minimum bail-in in the end. However this was not known at the time of the event thus should not influence results.

Results

During the event window of the resolution of the four Italian banks in the end of November 2015 we see lots of reactions in the total returns, both positive and negative coefficients. This because of the Mediterranean banks in our sample again. We see a significant negative reaction of -2.7% over the whole event window with a maximum of -6.8% 2 days before the event date and -6.4% 2 days after the event below the expected value on these days. Confirming again that the Mediterranean banks probably are seen as more risky and hereby get ‘punished’ harder on the market during negative news. However, it is remarkable that we do not seem to find any abnormal reactions for the Italian banks. Also, we don’t seem to find any significant abnormal effects for the CDS spreads during the event window. This must be due to the very limited amount of bail-in, most of the needed money was provided by the Italian resolution fund.

Table 32:Italy [-5,5] , Total return index

	Dependent variable:		
	Banks	Mediterranean	Italian
	(1)	(2)	(3)
`EURO STOXX 50`	0.503***	1.105***	0.827***
	(0.026)	(0.163)	(0.047)
EVENT	**-0.351****	**-2.689*****	-0.142
	(0.151)	(0.943)	(0.274)
Constant	-0.028	-0.165	-0.026
	(0.044)	(0.272)	(0.079)
Observations	131	131	131
R2	0.743	0.286	0.704
Adjusted R2	0.739	0.274	0.699
Residual Std. Error (df = 128)	0.478	2.984	0.866
F Statistic (df = 2; 128)	184.795***	25.577***	152.064***
Note:		*p<0.1; **p<0.05; ***p<0.01	

Table 33:Italy [-5,5] , Total return index, daily dummy variables

t = '23-11-2015'

	Dependent variable:		
	Banks	Mediterranean	Italian
	(1)	(2)	(3)
`EURO STOXX 50`	0.514***	1.175***	0.838***
	(0.027)	(0.163)	(0.049)
t-5	-0.098	-0.647	-0.686
	(0.483)	(2.935)	(0.884)
t-3	**-0.990****	-4.365	-1.349
	(0.488)	(2.969)	(0.894)
t-2	-0.544	-2.940	0.058
	(0.483)	(2.936)	(0.884)
t-1	**-0.803***	**-6.871****	0.400
	(0.483)	(2.937)	(0.884)
t-1	-0.216	**-4.874***	-0.885
	(0.483)	(2.935)	(0.884)
t	0.143	-2.384	1.067
	(0.483)	(2.935)	(0.884)
t+1	0.252	**6.030****	-0.130
	(0.483)	(2.940)	(0.885)
t+2	**-0.908***	**-6.394****	-0.189
	(0.484)	(2.947)	(0.887)
t+3	-0.690	**-5.439***	-0.503
	(0.483)	(2.941)	(0.885)
t+4	0.107	-1.550	0.373
	(0.483)	(2.936)	(0.884)
t+5	-0.168	-0.495	0.231
	(0.483)	(2.937)	(0.884)
Constant	-0.028	-0.161	-0.026
	(0.044)	(0.267)	(0.080)
Observations	131	131	131
R2	0.760	0.368	0.718
Adjusted R2	0.736	0.303	0.689
Residual Std. Error (df = 118)	0.481	2.923	0.880
F Statistic (df = 12; 118)	31.152***	5.720***	25.032***
Note:		*p<0.1; **p<0.05; ***p<0.01	

Table 34:Italy [-5,5] , Daily CDS spreads, daily dummy variables

t = '23-11-2015'

	Dependent variable:		
	Banks	Mediterranean	Italy
	(1)	(2)	(3)
`EUROPE BANKS 5Y CDS INDEX`	0.007	0.013	0.008
	(0.009)	(0.010)	(0.011)
t-5	-0.177	-2.098	-0.155
	(1.748)	(1.903)	(2.145)
t-4	-2.376	-2.190	-1.733
	(1.749)	(1.903)	(2.145)
t-3	-0.951	-1.385	-0.936
	(1.748)	(1.903)	(2.145)
t-2	-0.371	-0.316	-0.345
	(1.748)	(1.903)	(2.145)
t-1	-0.327	-0.650	-0.300
	(1.748)	(1.903)	(2.145)
t	-0.722	-0.637	-0.083
	(1.748)	(1.903)	(2.145)
t+1	0.468	0.035	0.909
	(1.748)	(1.903)	(2.145)
t+2	-0.567	0.557	-0.912
	(1.748)	(1.903)	(2.145)
t+3	-1.055	-0.658	-1.050
	(1.749)	(1.903)	(2.145)
t+4	-0.477	-0.658	-0.613
	(1.748)	(1.903)	(2.145)
t+5	0.149	-0.735	-0.673
	(1.784)	(1.941)	(2.188)
Constant	0.137	0.320*	0.169
	(0.160)	(0.174)	(0.196)
Observations	131	131	131
R2	0.030	0.046	0.018
Adjusted R2	-0.069	-0.051	-0.081
Residual Std. Error (df = 118)	1.741	1.895	2.136
F Statistic (df = 12; 118)	0.300	0.478	0.185
Note:	*p<0.1; **p<0.05; ***p<0.01		

6.9 NOVO BANCO

Novo banco, the good bank created during the fall of Banco Espirito Santo (BES) in 2014, failed the ECB stress tests in November 2015. Right before the implementation of the bail-in tool under the SRB (start of January 2016) the Portuguese authorities, Banco de Portugal, decided (press conference on 29 December) to bail-in a small fraction of senior bondholders to ensure the continuation of Novo banco. It chose 5 tranches of fixed rates senior bonds maturing between July 2016 and 2024 with about a face value of EUR 2 billion. As a result Novo Banco was no longer liable for these bonds and saw it capital rise, hereby covering the requirements again. On the contrary, the bailed-in bonds were retransferred back to bad bank BES and became backed by the BES assets and lost about 80% percent of its value immediately.

A very narrow selection of bondholders was hit which created a shock on the bond market, however we have to keep in mind here in this case that the bail-in regulations and the use was already announced for quite some time. Also the bail-in was very selective, comprising few investors in total and only 5 out of 52 possible tranches was bailed-in, thus violating the pari-passu principle. Besides that it was the second bail-in in Portugal in a short amount of the time and Novo Banco was also involved in that one. All this could lead to the absence of abnormal reactions.

Results

The results for the Novo Banco bail-in case do not indicate any significant reactions both in the total return indices and the CDS spreads. Potential explanations for this could be, as mentioned, that the Novo Banco was already involved in the bail-in of Banco Espirito Santo and therefore any surprise effect could be gone, also the selection of creditors to be bailed-in was very selective. Adding to this the lack of effects might even be due to the timing of the event in the middle of the holiday period between Christmas and new year. It has been shown in research previously that during specific periods reactions of investors and the market could be lower and later. I refer to strategic disclosure timing and insider trading (Marina Niessner, 2015) for example.

We can also see in the results that Novo Banco itself did experience a massive increase in CDS spreads after the bail-in event as can be expected. Making it increasingly harder for the institution because of higher costs of funding.

Table 35: Novo Banco [-10,10], Total return index

	Dependent variable:		
	Banks	Mediterranean	Portuguese
	(1)	(2)	(3)
`EURO STOXX 50`	0.486***	0.862***	0.996***
	(0.026)	(0.089)	(0.173)
EVENT	0.078	0.276	0.258
	(0.116)	(0.403)	(0.784)
Constant	-0.096**	-0.389**	-0.361
	(0.045)	(0.156)	(0.303)
Observations	141	141	141
R2	0.722	0.404	0.193
Adjusted R2	0.718	0.396	0.182
Residual Std. Error (df = 138)	0.491	1.704	3.313
F Statistic (df = 2; 138)	179.225***	46.828***	16.535***
Note:		*p<0.1; **p<0.05; ***p<0.01	

Table 36: Novo Banco [-5,5], total return index, daily dummy variables

t = '29-12-2015'

	Dependent variable:		
	Banks	Mediterranean	Portuguese
	(1)	(2)	(3)
`EURO STOXX 50`	0.511***	0.978***	1.102***
	(0.028)	(0.097)	(0.154)
t-5	0.354	0.068	2.653
	(0.502)	(1.745)	(2.768)
t-4	-0.174	-1.136	-1.381
	(0.506)	(1.761)	(2.792)
t-3	0.062	0.435	0.792
	(0.502)	(1.745)	(2.768)
t-2	0.001	0.167	-1.609
	(0.502)	(1.745)	(2.768)
t-1	0.545	0.880	-0.332
	(0.502)	(1.747)	(2.770)
t	-0.525	-1.811	**-4.647***
	(0.504)	(1.755)	(2.784)
t+1	0.278	0.232	2.637
	(0.502)	(1.746)	(2.770)
t+2	0.335	1.425	1.198
	(0.502)	(1.746)	(2.769)
t+3	-0.172	-0.242	-0.941
	(0.502)	(1.745)	(2.768)
t+4	0.718	1.513	**7.736*** **
	(0.509)	(1.769)	(2.806)
t+5	-0.277	-1.383	-2.968
	(0.502)	(1.746)	(2.769)
Constant	-0.048	-0.203	-0.512**
	(0.046)	(0.159)	(0.253)
Observations	131	131	131
R2	0.745	0.467	0.329
Adjusted R2	0.720	0.413	0.261
Residual Std. Error (df = 118)	0.500	1.738	2.756
F Statistic (df = 12; 118)	28.798***	8.627***	4.825***
Note:		*p<0.1; **p<0.05; ***p<0.01	

Table 37: Novo Banco [-5,5], CDS spreads, daily dummy variables

t = '29-12-2015'

	Dependent variable:			
	Banks	Mediterranean	Portuguese	`Novo Banco`
	(1)	(2)	(3)	(4)
`EUROPE BANKS 5Y CDS INDEX`	0.004	0.008	0.009	0.017
	(0.009)	(0.011)	(0.009)	(0.020)
t-5	-0.255	-0.339	-0.672	-1.179
	(1.742)	(2.090)	(1.711)	(3.789)
t-4	-0.395	-0.630	-0.573	-0.757
	(1.742)	(2.090)	(1.711)	(3.789)
t-3	-0.494	-0.786	-0.653	-0.218
	(1.750)	(2.100)	(1.719)	(3.806)
t-2	-0.179	-0.288	-0.451	-0.560
	(1.742)	(2.090)	(1.711)	(3.789)
t-1	-0.148	-0.323	-0.464	-0.590
	(1.742)	(2.090)	(1.711)	(3.789)
t	-0.116	0.027	0.399	4.889
	(1.751)	(2.100)	(1.720)	(3.808)
t+1	0.088	0.823	-0.628	-2.847
	(1.750)	(2.100)	(1.719)	(3.806)
t+2	-0.216	-0.226	-0.508	-3.404
	(1.742)	(2.090)	(1.711)	(3.789)
t+3	0.096	0.026	-0.179	**7.409***
	(1.775)	(2.129)	(1.743)	(3.860)
t+4	2.434	2.486	0.062	**50.898*****
	(1.808)	(2.169)	(1.776)	(3.932)
t+5	0.011	-0.257	-0.146	**29.736*****
	(1.742)	(2.090)	(1.711)	(3.789)
Constant	0.137	0.229	0.453***	0.572
	(0.159)	(0.191)	(0.156)	(0.346)
Observations	131	131	131	131
R2	0.022	0.024	0.016	0.682
Adjusted R2	-0.078	-0.075	-0.084	0.650
Residual Std. Error (df = 118)	1.735	2.081	1.704	3.773
F Statistic (df = 12; 118)	0.218	0.242	0.157	21.122***
Note:				*p<0.1; **p<0.05; ***p<0.01

6.10 BANCO POPULAR ESPANOL

Banco popular group is a Spanish banking group with a business strategy focused on SMEs, groups and families. At the time it was the 6th biggest banking group in Spain and considered as a domestic systemically important bank ("D-SIB") in Spain while also having several foreign branches. Due to its stressed liquidity situation, the European Central Bank (ECB) had decided on June 6, 2017 that Banco Popular was "failing or likely to fail" and notified the SRB accordingly. Due to the size of the bank, the number of deposits and its interconnections the bank had to be resolved, avoiding a potential adverse effect on the surrounding economy and financial institutions. For the stabilization phase of the resolution the bail-in tool was implemented in a single point of Entry (SPE) strategy. On June 7, 2017 The SRB decided to write down the nominal amount of share capital amounting around EUR 2.1 billion, this is the full 100% of shares outstanding. Subsequently all principal amount of additional tier 1 capital instruments was converted into shares and then written down, in total a nominal amount of around EUR 1.35 billion. Then all the principal amount of tier 2 capital instruments was converted into new shares (including subordinated debt for example), a principal amount of around EUR 686 million.

The SRB then approved the sale of Banco Popular to Santander for a symbolic euro. With immediate effect, BP continued to operate under normal business conditions as a solvent and liquid member of the group Santander.

After the introduction of the BRRD and SRM, the resolution of Monte dei Paschi di Siena was a false start. The system could not avoid the use of a bail-out there. Hereby thus hurting the credibility of the new system. The case of banco popular was different and could have been a sign for investors to take the system and bail-in procedure as a serious resolution tool. That is why I also expect a significant reaction here. It did not require any bail-out funds or a common backstop. The financial institution continued to operate throughout the resolution, which is important, but it did leave many questions to whether it was done efficiently and the timing was right.

This resolution was the first and only one handled by the Single Resolution board (SRB) to this date.

Results

Looking at the results for the Banco popular event we can see a clearly negative reaction in the daily return indices (Table 31) but only at the other Spanish banks. There seems to be no contagion effect on the banks of other countries.

I also chose to insert a separate regression on Santander, the buyer of the good assets of Banco Popular to verify the potential difference and indeed we can see an opposite reaction for them with higher total returns. This can be because their balance sheet gets bigger 'for free' but also because it's a signal that they are financially in a good position.

Surprisingly, for the event regression on the CDS spreads we even see a positive reaction on Spanish banks, thus lower than expected CDS spreads. This in contrast with the lower total returns. After the event we even see three days which have a significant reaction of around minus 4 percentage points For Santander we can again notice a positive reaction with a decrease in CDS spreads by a big amount, up to 18% lower than expected 3 days after the event. The lack of negative effects in CDS spreads in other countries could be because this event was done after the full implementation of the SRB and bail-in was expected. However it is still surprising because it was the first ever resolution done under their control and there were multiple doubts if they would go through with it. Another reason could be that the bail-in during the resolution could have been lower than expected (senior debt and deposits were not touched) and hereby caused a positive reaction.

Table 38: Banco Popular [-5,5], Total return index

	Dependent variable:			
	Banks	Mediterranean	'Spanish w/o Santander'	Santander
	(1)	(2)	(3)	(4)
`EURO STOXX 50`	0.615***	1.196***	1.364***	1.738***
	(0.052)	(0.165)	(0.173)	(0.127)
EVENT	-0.090	-0.011	**-1.192*** **	0.392
	(0.124)	(0.393)	(0.411)	(0.303)
Constant	0.069*	0.038	0.027	0.035
	(0.039)	(0.122)	(0.128)	(0.094)
Observations	131	131	131	131
R2	0.525	0.291	0.365	0.593
Adjusted R2	0.517	0.280	0.355	0.587
Residual Std. Error (df = 128)	0.409	1.296	1.355	0.998
F Statistic (df = 2; 128)	70.700***	26.250***	36.823***	93.273***
Note:			*p<0.1; **p<0.05; ***p<0.01	

Table 39: Banco Popular [-5,5], Total return index, daily dummy variables

t = '06-06-2017'

	Dependent variable:			
	Banks Mediterranean	`Spanish w/oSantander`	Santander	
	(1)	(2)	(3)	(4)
`EURO STOXX 50`	0.638***	1.205***	1.595***	1.750***
	(0.054)	(0.173)	(0.147)	(0.124)
t-5	0.106	-0.527	-0.552	-0.468
	(0.417)	(1.328)	(1.123)	(0.950)
t-4	-0.351	-0.574	-1.076	-0.193
	(0.416)	(1.326)	(1.121)	(0.948)
t-3	-0.237	1.121	**-3.931*** **	-0.639
	(0.416)	(1.326)	(1.120)	(0.948)
t-2	-0.446	-0.568	**-3.641*** **	-0.743
	(0.416)	(1.328)	(1.122)	(0.949)
t-1	-0.117	-0.214	**-2.619** **	0.273
	(0.416)	(1.327)	(1.122)	(0.949)
t	-0.060	-0.050	-0.269	1.024
	(0.418)	(1.334)	(1.127)	(0.953)
t+1	0.595	-0.870	0.139	-0.660
	(0.416)	(1.326)	(1.121)	(0.948)
t+2	-0.042	0.925	**-3.332*** **	**4.449*** **
	(0.416)	(1.326)	(1.120)	(0.948)
t+3	-0.481	-0.344	**-3.291*** **	0.023
	(0.416)	(1.327)	(1.122)	(0.949)
t+4	0.506	1.479	**6.546*** **	1.010
	(0.421)	(1.344)	(1.136)	(0.960)
t+5	-0.182	1.877	**-2.423** **	-0.831
	(0.416)	(1.326)	(1.120)	(0.947)
Constant	0.063	0.019	-0.008	0.044
	(0.039)	(0.124)	(0.105)	(0.089)
Observations	131	131	131	131
R2	0.551	0.323	0.604	0.665
Adjusted R2	0.505	0.254	0.563	0.631
Residual Std. Error (df = 118)	0.414	1.320	1.115	0.943
F Statistic (df = 12; 118)	12.057***	4.683***	14.976***	19.511***
Note:			*p<0.1; **p<0.05; ***p<0.01	

Table 40: Banco Popular [-5,5], CDS spreads, daily dummy variables

t = '06-06-2017'

	Dependent variable:			
	Banks	Mediterranean	`Spanish w/o Santander`	Santander
	(1)	(2)	(3)	(4)
`EUROPE BANKS 5Y CDS INDEX`	0.079***	0.075**	0.047	0.077
	(0.030)	(0.035)	(0.033)	(0.063)
t-5	1.028	1.966	1.679	5.812**
	(1.127)	(1.326)	(1.267)	(2.402)
t-4	0.065	-0.908	-0.296	1.978
	(1.129)	(1.329)	(1.269)	(2.407)
t-3	0.787	0.683	0.980	1.400
	(1.129)	(1.328)	(1.269)	(2.406)
t-2	0.399	0.485	-0.063	-0.228
	(1.126)	(1.325)	(1.266)	(2.400)
t-1	0.553	-0.066	0.890	0.690
	(1.126)	(1.325)	(1.266)	(2.400)
t	1.208	0.241	0.791	0.788
	(1.127)	(1.326)	(1.267)	(2.402)
t+1	-1.562	-0.075	**-3.510*** **	**-8.275*** **
	(1.126)	(1.326)	(1.266)	(2.401)
t+2	-0.212	-0.275	**-2.503***	**6.823*** **
	(1.166)	(1.372)	(1.311)	(2.486)
t+3	-0.945	-0.639	-0.724	**-18.573*** **
	(1.126)	(1.326)	(1.266)	(2.401)
t+4	-0.981	-0.651	0.624	-0.033
	(1.126)	(1.325)	(1.266)	(2.400)
t+5	**-3.621*** **	-0.990	**-4.787*** **	**-8.679*** **
	(1.129)	(1.329)	(1.269)	(2.407)
Constant	-0.239**	-0.161	-0.313***	-0.631***
	(0.102)	(0.121)	(0.115)	(0.218)
Observations	131	131	131	131
R2	0.173	0.076	0.220	0.461
Adjusted R2	0.088	-0.018	0.140	0.406
Residual Std. Error (df = 118)	1.121	1.320	1.261	2.390
F Statistic (df = 12; 118)	2.052**	0.805	2.767***	8.395***
Note:			*p<0.1; **p<0.05; ***p<0.01	

6.11 VENETO BANCA AND BANCA POPOLARE DI VICENZA

Veneto banca and Banca popolare di Vicenza are two regional banks located in the North-east of Italy. Together they accounted for 2% of the Italian banking system and a total of €55bn of assets. Both banks were deteriorating for quite some years after the sovereign debt crisis before being declared 'failing or likely to fail' by the ECB on June 23, 2017. The SRB did not decide that the resolution was warranted interest and therefore handed the problem over to the national regulations. The Italian authorities wanted to protect the creditors because a significant amount of the banks' debt was sold to retail investors as part of an alleged mis-selling scandal. Also, €10bn of bonds issued by the banks were guaranteed by the Italian state (Financial Times,2017), adding to the urge to avoid a bail-in.

Intesa paid a symbolic amount of €1 for the acquisition(the good assets of the banks), and benefitted from a €5.2 billion cash injection by the state. Intesa was also granted state guarantees that could potentially amount to €12 billion. Only the shares and junior bondholders were written down. Hereby thus letting the taxpayer pay for the largest part of the recovery and ignoring the requirements of the BRRD because following this, senior debt and deposits also had to be bailed-in. A big difference between the acquirement of Banco Popular by Santander was that they had to rise capital on trough a share sale to fund the transaction and not involving the taxpayer. The resolution of Banco popular was also handled on a European level.

Giugliano, Ferdinando titles on Bloomberg: "Italy's plan to rescue two small banks makes a mockery of Europe's new regulations." David Benamou, managing partner of Axiom Alternative Investments(a Paris-based investor in bank debt), says: "Any country willing to protect senior bondholders (preferred or not) now has a legal route to do so: indeed, the Italian authorities have unearthed a formidable loophole in the BRRD." (Financial Times, 2017)

I include this event to see if the reactions by the market were different from the other bail-in events, and I expect that CDS spreads for example might even have gone down because of this protection of creditors and the state intervention.

Results

We see some interesting results from this resolution. The total return indices don't seem to get affected much but after the announcement event they are almost all positive and 4 days after the event we see some significant positive reactions(about 1% on 95% confidence level higher than estimated) on the total returns for our full sample of banks and also we notice a positive coefficient of 2.5% for the Mediterranean banks, although not being significant.

The clearest reaction is to be found for the CDS spreads though, we start by seeing a very big increase for our Italian banks sample (23% higher than expected) which probably shows expectations of the coming resolution. On the announcement day however we see a turning point and some lower than estimated CDS spreads, going up to -5%(99% confidence level) for the full sample of banks. The day after we also see the Italian banks for example having lower than expected CDS spreads by about 9% (99% confidence level) which could indicate that the bail-in was far lower than expected. Also here we see an effect four days after the event with again lower than expected CDS spreads for the Italian banks(-6.9%) and the 'Mediterranean' banks (-4.1%).

The results are in line with the expectations that the credibility of the BRRD probably took a hit and that the aid of state capital(bail-out) still remains a big possibility, especially in Italy. Hereby lowering the risk premia.

Table 41: Veneto [-5,5], Total return index

	Dependent variable:		
	Banks	Mediterranean	Italian
	(1)	(2)	(3)
`Euro Stoxx 50`	0.485***	1.189***	0.423***
	(0.048)	(0.195)	(0.087)
EVENT	0.072	0.263	0.285
	(0.119)	(0.482)	(0.214)
Constant	0.062*	0.066	-0.005
	(0.035)	(0.140)	(0.062)
Observations	131	131	131
R2	0.441	0.225	0.160
Adjusted R2	0.433	0.213	0.147
Residual Std. Error (df = 128)	0.376	1.518	0.674
F Statistic (df = 2; 128)	50.593***	18.618***	12.161***
Note:		*p<0.1; **p<0.05; ***p<0.01	

Table 42: Veneto [-5,5], Daily Total return index, daily dummy variables

t = '23-06-2017'

	Dependent variable:		
	Banks	Mediterranean	Italian
	(1)	(2)	(3)
`Euro Stoxx 50`	0.522***	1.310***	0.441***
	(0.050)	(0.208)	(0.093)
t-5	-0.201	-0.078	-0.094
	(0.372)	(1.546)	(0.693)
t-4	0.145	-0.528	-0.039
	(0.374)	(1.555)	(0.697)
t-3	-0.167	-0.202	0.107
	(0.373)	(1.549)	(0.694)
t-2	-0.394	-0.087	-0.076
	(0.371)	(1.545)	(0.692)
t-1	-0.568	-2.238	-0.532
	(0.371)	(1.544)	(0.692)
t	0.086	1.046	0.776
	(0.372)	(1.547)	(0.693)
t+1	-0.152	-0.625	0.908
	(0.372)	(1.546)	(0.693)
t+2	0.258	1.265	0.982
	(0.373)	(1.552)	(0.695)
t+3	0.308	0.596	0.327
	(0.371)	(1.544)	(0.692)
t+4	0.983**	2.467	0.414
	(0.384)	(1.595)	(0.715)
t+5	0.631*	1.715	0.423
	(0.374)	(1.557)	(0.698)
Constant	0.058*	0.052	-0.007
	(0.034)	(0.142)	(0.064)
Observations	131	131	131
R2	0.502	0.267	0.192
Adjusted R2	0.451	0.193	0.109
Residual Std. Error (df = 118)	0.370	1.537	0.689
F Statistic (df = 12; 118)	9.916***	3.585***	2.331**
Note:		*p<0.1; **p<0.05; ***p<0.01	

Table 43: Veneto [-5,5], CDS spreads, daily dummy variables

t = '23-06-2017'

	Dependent variable:		
	Banks (1)	Mediterranean (2)	Italian (3)
`DS EUROPE BANKS 5Y CDS INDEX`	0.085***	0.044	0.120**
	(0.031)	(0.029)	(0.052)
t-5	-0.372	-0.042	0.550
	(1.120)	(1.051)	(1.888)
t-4	1.746	-0.728	**23.365*** **
	(1.121)	(1.052)	(1.890)
t-3	0.954	0.447	2.154
	(1.196)	(1.122)	(2.016)
t-2	0.456	0.397	-0.484
	(1.120)	(1.051)	(1.888)
t-1	**-4.788*** **	0.109	-2.043
	(1.122)	(1.053)	(1.892)
t	**-5.114*** **	**-3.101*** **	**-3.861***
	(1.158)	(1.087)	(1.953)
t+1	**-2.919*** **	**-1.859***	**-9.063*** **
	(1.120)	(1.051)	(1.889)
t+2	1.525	-0.217	2.997
	(1.121)	(1.051)	(1.889)
t+3	0.706	1.059	2.470
	(1.194)	(1.120)	(2.013)
t+4	-1.384	**-4.108*** **	**-6.920*** **
	(1.121)	(1.052)	(1.890)
t+5	0.089	0.214	-0.481
	(1.132)	(1.062)	(1.909)
Constant	-0.190*	-0.163*	-0.038
	(0.102)	(0.096)	(0.172)
Observations	131	131	131
R2	0.318	0.193	0.636
Adjusted R2	0.249	0.110	0.599
Residual Std. Error (df = 118)	1.115	1.046	1.881
F Statistic (df = 12; 118)	4.585***	2.345***	17.161***
Note:		*p<0.1; **p<0.05; ***p<0.01	

7.CONCLUSION

This dissertation investigates the effects of bail-in events on the Total return indices and the CDS spread of a well-diversified sample of European banks using an event study regression suggested by Pynnönen (2005). To do this, different events of resolutions with the bail-in tool are analysed together with two events regarding the regulations of the bail-in tool and one event that has been seen as a neglection of the bail-in and BRRD. Prior to the study, expectations were that during a bail-in event total return indices would go down and CDS spreads would go up due to lower bail-out expectations and higher risk-premia applied by the market participants. Hereby thus causing a higher cost of funding for the European banks. For the events prior to the regulation of the SRM and the bail-in tool we can find these expectations to be true. The bail-ins cases in at the bank of Cyprus, SNS Reaal and UK Co-operative bank all caused abnormal reactions with statistically significant higher CDS spreads than expected at other European banks. These contagion effects were overall most apparent at the other domestic banks and surrounding countries. These events also caused lower total return indices during the event windows. The Danish case (Amagerbanken) caused effects only on other Danish banks, probably because of the country being out of the eurozone and the bank being relatively small. Effects were most apparent at the Cypriot case as expected, this is the case with the largest bail-in amount and even uninsured deposits were bailed-in.

After these events came the regulation events on the application of the SRM and the bail-in tool. Two decisions were selected to investigate, the proposal backing on March 20, 2014 and the agreement by the European parliament on April 15, 2014. These events clearly caused negative abnormal effects both on the total return indices (lower) and the CDS spreads (higher) for all banks (even non-participating banks in these regulations were affected). Effects were highest at the G-SIB (Global systemically important) banks during these event windows which can be expected due to the higher amount of capital requirements they have(MREL).

Between the agreements on these regulations and the regulatory implementation of the bail-in tool a couple of other financial institutions were resolved using the bail-in tool. These events consist of Banco Espirito Santo, 4 Italian banks, Andelskassen and Novo banco. It seems these events caused less abnormal effects on the CDS spreads than the first cases, only Banco Espirito Santo showed clear negative abnormal effects (higher CDS spreads) on other banks, probably due to the bigger scale of the bail-in and significant importance of the bank. The resolution of the four Italian banks even caused lower than expected CDS spreads, this can be due to the limited level of creditors that were bailed-in but also because of the state aid that was still given to complete the resolution.

Total return indices still seemed to be lower than expected around these events, especially for other domestic banks and banks in surrounding countries the contagion effects are higher again.

Finally we arrive at two resolution cases after the implementation of the SRM and the SRB. Banco Popular Espanol, an important bank in Spain, was the first and only bank at this time to be resolved under control of the SRB. Opposing to this event we also researched effects of the resolution of Veneto banca and banca popolare di Vicenza which was seen as a decision that hurt the credibility of the SRB and banking union. Although these two events were received differently by the public with a lot of criticism on the second one, both events did not include any senior debt. In the results of both of these events we saw much lower than expected CDS spreads, especially for the other domestic banks, which could indicate that bail-out expectations raised again and risk premia lowered thanks to the big amount of state aid that was used by Italy and the reluctance to bail-in senior debt. The difference between the two events is seen in the results of the total return indices, for the Banco Popular case we can still notice lower total returns around the event for other Spanish banks.

I want to conclude by saying that there has not been a case with a full and 'clean' bail-in like in the example in 2.2 (all of the cases combined the bail-in with the sale-of-business tool or bridge banks for example). The bail-in tool also remains to be unproven for the resolution of G-SIBs and these results might indicate that the market believes that the bail-in tool might not be used for this or is not totally convinced(credibility of the SRB and the use of bail-in for large banks still are not optimal.) The recent resolutions in Italy (also Monte dei Paschi) definitely did not help their case. Italy ,amongst other, seems to keep struggling to resolve its banks without using public funding, possibly due to the high amount of bank debt that is held by households and other domestic banks. It remains very interesting to see how the SRB and the banking union will handle following resolutions in the future.

8.SAMPLE OVERVIEW

Tabel 1 - Sample of banks used for the total returns

BANKS	Country	Scandinavian	"Mediterranean"	G-SIB
BANK FUR TIROL UND VBG.	Austria			
BAWAG GROUP	Austria			
BKS BANK	Austria			
ERSTE GROUP BANK	Austria			
OBERBANK	Austria			
RAIFFEISEN BANK INTL.	Romania			
DEXIA	Belgium			
KBC GROUP	Belgium			
CB BGN.AMER.CR.BK.	Bulgaria			
CB CENTRAL COOP.BANK	Bulgaria			
CB FIRST INVESTMENT BANK	Bulgaria			
BANK CLER	Switzerland			
BANK LINTH LLB	Switzerland			
BANQUE CANTON.DE GENEVE	Switzerland			
BANQUE CANTONALE DU JURA	Switzerland			
BANQUE CANTON.VE. 'N'	Switzerland			
BASELLANDSCHAFTLICH E KANTONALBANK	Switzerland			
BASLER KB 'P'	Switzerland			
BERNER KANTONALBANK	Switzerland			
CREDIT SUISSE GROUP	Switzerland			x
EDMOND DE ROTHSCHILD SUISSE	Switzerland			
EFG INTERNATIONAL N	Switzerland			
GRAUB KB 'P'	Switzerland			
HYPOTHEKARBANK LENZBURG	Switzerland			
JULIUS BAER GRUPPE	Switzerland			
LUZERNER KANTONALBANK	Switzerland			
ST GALLER KANTONALBANK	Switzerland			
THURGAUER KANTONALBANK	Switzerland			
UBS GROUP	Switzerland			x
VALIANT 'R'	Switzerland			
VONTOBEL HOLDING	Switzerland			
WALLISER KANTONALBANK	Switzerland			
BANK OF CYPRUS DEAD	Cyprus			
HELLENIC BANK	Cyprus			
KOMERCNI BANKA	Czech Republic			
BAADER BANK	Germany			
COMDIRECT BANK	Germany			
COMMERZBANK	Germany			
DEUTSCHE BANK	Germany			x
DT.PFANDBRIEFBANK	Germany			
DEUTSCHE POSTBANK	Germany			

HSBC TRINKAUS & BURKHD.	Germany			
MERKUR BANK	Germany			
MLP	Germany			
OLDENBURGISCHE LB.	Germany			
PROCREDIT HOLDING	Germany			
UMWELTBANK	Germany			
WUESTENROT & WUERTT.	Germany			
AAREAL BANK	Germany			
GROENLANDSBANKEN	Greenland			
DANSKE ANDELSKASSERS BANK	Denmark	x		
DANSKE BANK	Denmark	x		
DJURSLANDS BANK	Denmark	x		
FYNSKE BANK	Denmark	x		
HVIDBJERG BANK	Denmark	x		
JUTLANDER BANK	Denmark	x		
JYSKE BANK	Denmark	x		
KREDITBANKEN	Denmark	x		
LAN & SPAR BANK	Denmark	x		
LOLLANDS BANK	Denmark	x		
MONS BANK	Denmark	x		
NORDFYNS BANK	Denmark	x		
NORDJYSKE BANK	Denmark	x		
OSTJYDSK BANK	Denmark	x		
RINGKJOBING LANDBOBANK	Denmark	x		
SALLING BANK	Denmark	x		
SKJERN BANK	Denmark	x		
SPAR NORD BANK	Denmark	x		
SYDBANK	Denmark	x		
TOTALBANKEN	Denmark	x		
VESTJYSK BANK	Denmark	x		
LHV GROUP	Estonia			
BBV.ARGENTARIA	Spain		x	
BANCO DE SABADELL	Spain		x	
BANCO POPULAR ESPANOL	Spain		x	
BANCO SANTANDER	Spain		x	x
BANKIA	Spain		x	
BANKINTER 'R'	Spain		x	
CAIXABANK	Spain		x	
LIBERBANK	Spain		x	
UNICAJA BANCO	Spain		x	
AKTIA BANK A	Finland	x		
ALANDSBANKEN A	Finland	x		
NORDEA BANK	Finland	x		
BNP PARIBAS	France			x
CIC 'A' DEAD	France			
CREDIT AGRICOLE	France			x

NATIXIS	France			
SOCIETE GENERALE	France			x
ARBUTHNOT BANKING GROUP	UK			
BARCLAYS	UK			x
CHARTER COURT FINL.SVS.	UK			
CLOSE BROTHERS GROUP	UK			
VIRGIN MONEY UK	UK			
HSBC HOLDINGS	UK			x
LLOYDS BANKING GROUP	UK			
ROYAL BANK OF SCTL.GP.	UK			
STANDARD CHARTERED	UK			x
TBC BANK GROUP	UK			
VIRGIN MONEY HOLDINGS DEAD	UK			
ALPHA BANK	Greece		x	
ATTICA BANK	Greece		x	
EUROBANK HOLDINGS	Greece		x	
NATIONAL BK.OF GREECE	Greece		x	
BANK OF PIRAEUS	Greece		x	
BANKA SPLITSKO DALMA.	Croatia			
ISTARSKA KREDITNA BANKA	Croatia			
KARLOVACKA BANKA	Croatia			
KREDITNA BANKA ZAGREB	Croatia			
PODRAVASKA BANKA	Croatia			
PRIVREDNA BANKA	Croatia			
SLATINSKA BANKA	Croatia			
ZAGREBACKA BANKA SER A	Croatia			
OTP BANK	Hungary			
TAKAREK MORTGAGE BK	Hungary			
AIB GROUP	Ireland			
BANK OF IRELAND GROUP	Ireland			
PERMANENT TSB GHG.	Ireland			
BANCA CARIGE SUSP	Italy		x	
BANCA FINNAT EURAMERICA	Italy		x	
BANCA GENERALI	Italy		x	
BANCA INTERMOBILIARE	Italy		x	
BANCA MEDIOLANUM	Italy		x	
BANCA PPO.ETRURIA LAZIO	Italy		x	
BANCA POPOLARE DI MILANO	Italy		x	
BANCA PPO.DI SONDRIO	Italy		x	
BANCA PPO.DI SPOLETO	Italy		x	
BANCA PROFILO	Italy		x	
BANCA MONTE DEI PASCHI	Italy		x	
INTESA SANPAOLO	Italy		x	
UNICREDIT	Italy		x	x
ING GROEP	Netherlands			x
BANCO COMR.PORTUGUES 'R'	Portugal		x	

SKANDINAVISKA ENSKILDA BANKEN A	Sweden	x		
SVENSKA HANDELSBANKEN A	Sweden	x		
SWEDBANK A	Sweden	x		
DNB	Norway	x		

Tabel 1 - Sample of banks used for the CDS spreads

Banks	**Country**	**Scandinavian**	**"Mediterranean"**	**G-SIB**
ABN AMRO Group NV	Netherlands			
Coöperatieve Rabobank U.A.	Netherlands			
SNS REAAL NV	Netherlands			
NIBC Bank NV	Netherlands			
ING Bank NV	Netherlands			x
BNP Paribas Fortis SA	Belgium			
KBC Bank NV	Belgium			
Banque Fédérative du Crédit Mutuel SA	France			
Natixis SA	France			
Société Générale SA	France			x
BNP Paribas SA	France			x
Crédit Agricole SA	France			x
Crédit Lyonnais SA	France			
Banca Italease SpA	Italy		x	
Banca Monte dei Paschi di Siena SpA	Italy		x	
Banca Nazionale del Lavoro SpA	Italy		x	
Banca Popolare di Milano Società per Azioni	Italy		x	
UniCredit SpA	Italy		x	x
Unione di Banche Italiane SpA	Italy		x	
Intesa Sanpaolo SpA	Italy		x	
Mediobanca - Banca di Credito Finanziario SpA	Italy		x	
Novo Banco, SA	Portugal		x	
Banco Comercial Português, SA	Portugal		x	
Banco Espírito Santo SA	Portugal		x	
Banco BPI, SA	Portugal		x	
Caixa Geral de Depósitos, SA	Portugal		x	
Banco Bilbao Vizcaya Argentaria, SA	Spain		x	
Banco Pastor SA	Spain		x	
Banco Popolare Società Cooperativa	Spain		x	
Banco Popular Español, SA	Spain		x	
Banco Santander, SA	Spain		x	x
Banco de Sabadell, SA	Spain		x	
Bankia, SA	Spain		x	
Bankinter, SA	Spain		x	
CaixaBank, SA	Spain		x	
Santander UK Plc	UK			
Bank of Scotland Plc	UK			
Barclays Plc	UK			x

HBOS Plc	UK			
HSBC Bank Plc	UK			x
Lloyds Bank Plc	UK			
Nationwide Building Society	UK			
Royal Bank of Scotland Group Plc	UK			
Standard Chartered Plc	UK			x
Bayerische Landesbank AöR	Germany			
Commerzbank AG	Germany			
Hamburg Commercial Bank AG	Germany			
IKB Deutsche Industriebank AG	Germany			
Landesbank Baden-Württemberg	Germany			
NORD/LB Norddeutsche Landesbank Girozentrale	Germany			
Portigon AG	Germany			
Raiffeisen Bank International AG	Germany			
Raiffeisen Zentralbank Österreich AG	Germany			
Deutsche Bank AG	Germany			x
UniCredit Bank AG	Germany			
Credit Suisse Group AG	Switzerland			x
UBS Group AG	Switzerland			x
UniCredit Bank Austria AG	Austria			
Erste Group Bank AG	Austria			
DNB Bank ASA	Norway	x		
Danske Bank A/S	Denmark	x		
Governor and Company of the Bank of Ireland	Ireland			
Permanent TSB Group Holdings Plc	Ireland			
Nordea Bank AB (publ)	Finland	x		
Skandinaviska Enskilda Banken AB (publ.)	Sweden	x		
Svenska Handelsbanken AB (publ)	Sweden	x		
Swedbank AB (publ)	Sweden	x		

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10. APPENDIX

10.1 Amagerbanken [-5,5], CDS spreads, constant return model

	Dependent variable:			
	Banks	Scandinavian	Danish	Mediterranean
	(1)	(2)	(3)	(4)
AM_5	-2.921	-0.046	-1.604	-3.362
	(2.320)	(1.703)	(2.013)	(2.587)
AM_4	-3.557	-2.638	-7.350***	-5.217**
	(2.320)	(1.703)	(2.013)	(2.587)
AM_3	-1.055	-0.488	-0.611	-1.530
	(2.320)	(1.703)	(2.013)	(2.587)
AM_2	0.934	0.010	-0.045	-1.045
	(2.320)	(1.703)	(2.013)	(2.587)
AM_1	-2.222	-0.337	-0.610	-2.585
	(2.320)	(1.703)	(2.013)	(2.587)
AM	-0.021	0.365	0.404	-0.282
	(2.320)	(1.703)	(2.013)	(2.587)
AM1	0.349	-0.245	-1.021	0.426
	(2.320)	(1.703)	(2.013)	(2.587)
AM2	-1.057	-0.651	0.670	-1.856
	(2.320)	(1.703)	(2.013)	(2.587)
AM3	1.078	0.332	-0.946	0.328
	(2.320)	(1.703)	(2.013)	(2.587)
AM4	-0.088	0.085	1.525	0.211
	(2.320)	(1.703)	(2.013)	(2.587)
AM5	1.414	0.576	-1.375	1.712
	(2.320)	(1.703)	(2.013)	(2.587)
Constant	0.446**	0.217	0.598***	0.604**
	(0.211)	(0.155)	(0.183)	(0.235)
Observations	131	131	131	131
R2	0.048	0.024	0.117	0.064
Adjusted R2	-0.040	-0.067	0.035	-0.022
Residual Std. Error (df = 119)	2.311	1.696	2.005	2.576
F Statistic (df = 11; 119)	0.547	0.263	1.430	0.741
Note:			*p<0.1; **p<0.05; ***p<0.01	

10.2 Andelskassen [-5,5], CDS spreads constant return model

	Dependent variable:		
	Banks	Scandinavian	Danish
	(1)	(2)	(3)
AN_5	2.310	2.411	2.094
	(1.681)	(1.641)	(2.593)
AN_4	1.475	5.726***	1.863
	(1.681)	(1.641)	(2.593)
AN_3	-0.604	0.344	-2.225
	(1.681)	(1.641)	(2.593)
AN_2	-0.696	-0.210	-0.396
	(1.681)	(1.641)	(2.593)
AN_1	-0.217	0.020	-0.955
	(1.681)	(1.641)	(2.593)
AN	-3.209*	-3.459**	-7.089***
	(1.681)	(1.641)	(2.593)
AN1	-2.395	-2.338	-2.606
	(1.681)	(1.641)	(2.593)
AN2	-2.949*	-3.064*	-3.128
	(1.681)	(1.641)	(2.593)
AN3	0.837	-0.555	-0.198
	(1.681)	(1.641)	(2.593)
AN4	-2.217	-1.819	-2.932
	(1.681)	(1.641)	(2.593)
AN5	-1.296	-0.344	-0.911
	(1.681)	(1.641)	(2.593)
Constant	0.219	0.165	0.197
	(0.153)	(0.149)	(0.236)
Observations	131	131	131
R2	0.107	0.179	0.100
Adjusted R2	0.024	0.103	0.017
Residual Std. Error (df = 119)	1.674	1.634	2.582
F Statistic (df = 11; 119)	1.292	2.357**	1.201
Note:		*p<0.1; **p<0.05; ***p<0.01	

10.3 UK Co-operative [-5,5], CDS spreads constant return model

	Dependent variable:			
	Banks	UK	Mediteraan	`banks w/MED, UK`
	(1)	(2)	(3)	(4)
UK_5	1.390	1.219	1.056	1.577
	(1.461)	(2.133)	(1.761)	(1.251)
UK_4	3.165**	4.587**	3.663**	2.483**
	(1.461)	(2.133)	(1.761)	(1.251)
UK_3	0.442	2.727	0.104	0.172
	(1.461)	(2.133)	(1.761)	(1.251)
UK_2	1.269	1.932	1.252	1.122
	(1.461)	(2.133)	(1.761)	(1.251)
UK_1	-1.394	-1.695	-1.619	-1.299
	(1.461)	(2.133)	(1.761)	(1.251)
UK	-0.293	-0.280	-0.446	-0.378
	(1.461)	(2.133)	(1.761)	(1.251)
UK1	1.234	3.000	1.257	0.938
	(1.461)	(2.133)	(1.761)	(1.251)
UK2	-0.481	-1.136	0.245	-0.828
	(1.461)	(2.133)	(1.761)	(1.251)
UK3	8.472***	10.722***	8.009***	8.002***
	(1.461)	(2.133)	(1.761)	(1.251)
UK4	2.436*	3.983*	2.845	1.811
	(1.461)	(2.133)	(1.761)	(1.251)
UK5	5.302***	7.503***	4.379**	5.481***
	(1.461)	(2.133)	(1.761)	(1.251)
Constant	-0.314**	-0.368*	-0.325**	-0.291**
	(0.133)	(0.194)	(0.160)	(0.114)
Observations	131	131	131	131
R2	0.322	0.296	0.229	0.369
Adjusted R2	0.260	0.231	0.158	0.310
Residual Std. Error (df = 119)	1.455	2.124	1.753	1.246
F Statistic (df = 11; 119)	5.145***	4.554***	3.215***	6.318***
Note:				*p<0.1; **p<0.05; ***p<0.01

10.4 Banco Espirito Santo [-5,5], CDS spreads constant return model

	Dependent variable:			
	`Banks w/Mediteraan`	Mediteraan	Portugees	Espirito
	(1)	(2)	(3)	(4)
ES_5	-0.113	0.089	0.377	2.989
	(1.345)	(2.169)	(2.979)	(5.499)
ES_4	0.026	0.819	1.170	5.215
	(1.345)	(2.169)	(2.979)	(5.499)
ES_3	-0.195	-0.514	0.059	3.098
	(1.345)	(2.169)	(2.979)	(5.499)
ES_2	4.369***	6.581***	14.465***	53.783***
	(1.345)	(2.169)	(2.979)	(5.499)
ES_1	1.117	3.941*	4.447	3.656
	(1.345)	(2.169)	(2.979)	(5.499)
ES	-1.310	-1.641	-9.971***	-42.189***
	(1.345)	(2.169)	(2.979)	(5.499)
ES1	-0.952	-2.089	-1.542	-5.664
	(1.345)	(2.169)	(2.979)	(5.499)
ES2	1.842	2.503	3.170	-0.379
	(1.345)	(2.169)	(2.979)	(5.499)
ES3	1.962	3.022	5.307*	0.974
	(1.345)	(2.169)	(2.979)	(5.499)
ES4	0.699	0.818	-3.224	-12.904**
	(1.345)	(2.169)	(2.979)	(5.499)
ES5	-1.814	-4.039*	-4.015	-0.635
	(1.345)	(2.169)	(2.979)	(5.499)
Constant	-0.138	-0.149	0.066	0.635
	(0.122)	(0.197)	(0.271)	(0.500)
Observations	131	131	131	131
R2	0.137	0.151	0.274	0.580
Adjusted R2	0.057	0.072	0.207	0.541
Residual Std. Error (df = 119)	1.340	2.160	2.967	5.476
F Statistic (df = 11; 119)	1.712*	1.920**	4.092***	14.949***
Note:		*p<0.1; **p<0.05; ***p<0.01		

10.5 4 Italian banks [-5,5], CDS spreads constant return model

	Dependent variable:		
	Banks	Mediteraan	Italy
	(1)	(2)	(3)
IT_5	-0.188	-2.119	-0.167
	(1.745)	(1.908)	(2.140)
IT_4	-2.397	-2.228	-1.755
	(1.745)	(1.908)	(2.140)
IT_3	-0.966	-1.413	-0.952
	(1.745)	(1.908)	(2.140)
IT_2	-0.385	-0.341	-0.360
	(1.745)	(1.908)	(2.140)
IT_1	-0.338	-0.670	-0.312
	(1.745)	(1.908)	(2.140)
IT	-0.729	-0.650	-0.091
	(1.745)	(1.908)	(2.140)
IT1	0.458	0.016	0.899
	(1.745)	(1.908)	(2.140)
IT2	-0.579	0.537	-0.924
	(1.745)	(1.908)	(2.140)
IT3	-1.074	-0.693	-1.071
	(1.745)	(1.908)	(2.140)
IT4	-0.489	-0.679	-0.625
	(1.745)	(1.908)	(2.140)
IT5	-0.125	-1.237	-0.964
	(1.745)	(1.908)	(2.140)
Constant	0.148	0.341*	0.181
	(0.159)	(0.173)	(0.195)
Observations	131	131	131
R2	0.025	0.033	0.015
Adjusted R2	-0.065	-0.057	-0.076
Residual Std. Error (df = 119)	1.738	1.900	2.131
F Statistic (df = 11; 119)	0.274	0.365	0.162
Note:	*p<0.1; **p<0.05; ***p<0.01		

10.6 4 Italian banks [-5,5], CDS spreads constant return model

	Dependent variable:			
	Banks (1)	Mediteraan (2)	Portuguese (3)	`Novo Banco` (4)
NO_5	-0.258	-0.346	-0.680	-1.194
	(1.736)	(2.085)	(1.711)	(3.784)
NO_4	-0.408	-0.657	-0.605	-0.816
	(1.736)	(2.085)	(1.711)	(3.784)
NO_3	-0.429	-0.649	-0.487	0.089
	(1.736)	(2.085)	(1.711)	(3.784)
NO_2	-0.188	-0.307	-0.474	-0.603
	(1.736)	(2.085)	(1.711)	(3.784)
NO_1	-0.151	-0.328	-0.471	-0.603
	(1.736)	(2.085)	(1.711)	(3.784)
NO	-0.183	-0.115	0.227	4.571
	(1.736)	(2.085)	(1.711)	(3.784)
NO1	0.153	0.960	-0.461	-2.540
	(1.736)	(2.085)	(1.711)	(3.784)
NO2	-0.221	-0.238	-0.523	-3.430
	(1.736)	(2.085)	(1.711)	(3.784)
NO3	-0.034	-0.250	-0.514	6.791*
	(1.736)	(2.085)	(1.711)	(3.784)
NO4	2.620	2.878	0.539	51.779***
	(1.736)	(2.085)	(1.711)	(3.784)
NO5	0.006	-0.268	-0.159	29.711***
	(1.736)	(2.085)	(1.711)	(3.784)
Constant	0.144	0.242	0.470***	0.603*
	(0.158)	(0.190)	(0.156)	(0.344)
Observations	131	131	131	131
R2	0.020	0.020	0.007	0.680
Adjusted R2	-0.070	-0.070	-0.084	0.651
Residual Std. Error (df = 119)	1.729	2.077	1.704	3.768
F Statistic (df = 11; 119)	0.226	0.223	0.079	23.035***
Note:				*p<0.1; **p<0.05; ***p<0.01

10.7 Banco popular [-5,5], CDS spreads constant return model

	Dependent variable:			
	Banks	Mediteraan	'Spaans w/o santander'	Santander
	(1)	(2)	(3)	(4)
POP_5	1.155	2.086	1.754	5.936**
	(1.155)	(1.345)	(1.271)	(2.405)
POP_4	0.289	-0.695	-0.164	2.196
	(1.155)	(1.345)	(1.271)	(2.405)
POP_3	0.994	0.880	1.102	1.601
	(1.155)	(1.345)	(1.271)	(2.405)
POP_2	0.420	0.504	-0.051	-0.208
	(1.155)	(1.345)	(1.271)	(2.405)
POP_1	0.533	-0.084	0.878	0.671
	(1.155)	(1.345)	(1.271)	(2.405)
POP	1.333	0.359	0.865	0.909
	(1.155)	(1.345)	(1.271)	(2.405)
POP1	-1.646	-0.154	-3.560***	-8.356***
	(1.155)	(1.345)	(1.271)	(2.405)
POP2	-1.025	-1.045	-2.981**	6.033**
	(1.155)	(1.345)	(1.271)	(2.405)
POP3	-1.026	-0.716	-0.772	-18.652***
	(1.155)	(1.345)	(1.271)	(2.405)
POP4	-1.013	-0.682	0.605	-0.065
	(1.155)	(1.345)	(1.271)	(2.405)
POP5	-3.393***	-0.774	-4.653***	-8.458***
	(1.155)	(1.345)	(1.271)	(2.405)
Constant	-0.250**	-0.171	-0.320***	-0.642***
	(0.105)	(0.122)	(0.116)	(0.219)
Observations	131	131	131	131
R2	0.122	0.039	0.207	0.454
Adjusted R2	0.041	-0.050	0.133	0.403
Residual Std. Error (df = 119)	1.150	1.340	1.266	2.395
F Statistic (df = 11; 119)	1.506	0.440	2.817***	8.984***

Note: *p<0.1; **p<0.05; ***p<0.01

10.8 Veneto banca[-5,5], CDS spreads constant return model

	Dependent variable:		
	Banks (1)	Mediterranean (2)	Italian (3)
VE_5	-0.378	-0.046	0.541
	(1.150)	(1.056)	(1.922)
VE_4	1.879	-0.660	23.553***
	(1.150)	(1.056)	(1.922)
VE_3	-0.195	-0.149	0.527
	(1.150)	(1.056)	(1.922)
VE_2	0.462	0.401	-0.475
	(1.150)	(1.056)	(1.922)
VE_1	-4.975***	0.012	-2.308
	(1.150)	(1.056)	(1.922)
VE	-4.304***	-2.681**	-2.714
	(1.150)	(1.056)	(1.922)
VE1	-2.871**	-1.834*	-8.995***
	(1.150)	(1.056)	(1.922)
VE2	1.421	-0.271	2.850
	(1.150)	(1.056)	(1.922)
VE3	-0.426	0.472	0.868
	(1.150)	(1.056)	(1.922)
VE4	-1.516	-4.177***	-7.107***
	(1.150)	(1.056)	(1.922)
VE5	-0.368	-0.022	-1.127
	(1.150)	(1.056)	(1.922)
Constant	-0.204*	-0.170*	-0.058
	(0.105)	(0.096)	(0.175)
Observations	131	131	131
R2	0.275	0.177	0.619
Adjusted R2	0.207	0.101	0.584
Residual Std. Error (df = 119)	1.146	1.052	1.914
F Statistic (df = 11; 119)	4.094***	2.324**	17.604***
Note:		*p<0.1; **p<0.05; ***p<0.01	