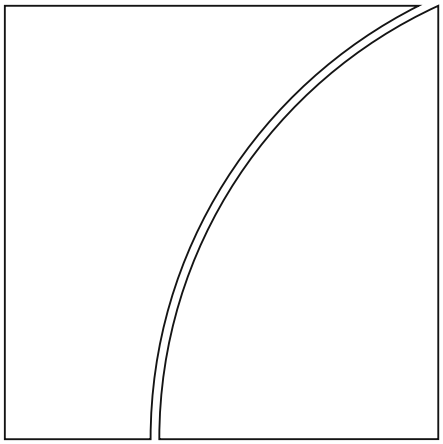

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by Michael R King, Steven Ongena and Nikola Tarashev

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Keywords: banks, standalone credit ratings, ratings catering, stock market reaction

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Bank Standalone Credit Ratings

Michael R. King

Steven Ongena *

Nikola Tarashev

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Abstract

Do bank stock prices react to credit rating changes that do not signal changes in default risk estimates? On July 20, 2011, Fitch Ratings refined their bank standalone ratings, which measure intrinsic financial strength, from a 9-point to a 21-point scale. This refinement did not affect bank all-in ratings, which measure default risk by combining standalone ratings with assessments of extraordinary sovereign support. For several metrics of the surprise component in standalone rating refinements, we find more positive than negative ratings surprises, in particular for large banks. We also find that shareholders rewarded banks receiving positive rating surprises.

Keywords: banks, standalone ratings, ratings catering, stock reaction.

JEL Classifications: G21, G14, G15.

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* Corresponding author. King is from Ivey Business School, Western University. Ongena is from the Department of Banking and Finance, University of Zurich, the Swiss Finance Institute, KU Leuven and the Centre for Economic Policy Research. Tarashev is from the Monetary and Economic Department, Bank for International Settlements (BIS). We thank Bo Becker, Andre Guettler, Iftekhar Hasan, Frank Packer, Laura Veldkamp, participants at the 4th Conference on Credit Analysis and Risk Management (Basel University), the 2016 Workshop on Corporate Bonds (University of Strasbourg), the 2nd Ivey-Queen's Finance Workshop, the 6th International Conference of the Financial Engineering and Banking Society, and seminar participants at the BIS, the University of Waterloo, and Ivey Business School for valuable comments. We are most grateful to Mathias Efing and Harald Hau for sharing data on securitization volumes and to Jörg Urban for compiling the ratings dataset. King acknowledges financial support from the Tangerine Chair in Finance and the BIS Research Fellowship. The views expressed in this paper are those of the authors, not necessarily those of the BIS.

> "The global financial crisis and ongoing stress in the capital markets have increased market participants' appetite for clear and credible assessments of the credit risks of banks worldwide. Regulatory changes designed to limit state support for banks strengthen the demand for a clear perspective on a bank's intrinsic financial strength and the extent to which it may benefit from support."
>
> Fitch Ratings, March 7, 2011

On July 20, 2011, Fitch Ratings released new *standalone ratings*, called "Viability Ratings", for the banks in its rating universe. Standalone ratings provide an assessment of banks' intrinsic financial strength without taking account of extraordinary support from the home country sovereign (or a parent company in the case of subsidiaries). Fitch combines standalone ratings with an estimate of the probability of extraordinary support to derive bank *all-in ratings*: the ultimate measure of default risk monitored by creditors. The new standalone ratings – dubbed Viability Ratings – are reported, as all-in ratings, on the widely-used 21-point scale. They replaced the coarser, 9-point ratings that Fitch inherited when it acquired IBCA in 1997.[1] Fitch publicized the refinement of standalone ratings as based on an unchanged methodology for assessing banks' intrinsic financial strength but as providing greater clarity about the assessments (Fitch (2011b)).

Fitch also stressed that the release of the 21-point standalone rating would have no impact on the definition or level of bank all-in ratings. Thus, as all-in ratings did not change on July 20, 2011, we can study exclusively the release of a rating agency's private information about banks' intrinsic financial strength. Our focus is thus different from prior studies of how changes in a rating agency's default-risk estimates – revealed through all-in ratings – affect the creditors and shareholders of all rated entities, including both financial and non-financial institutions (Kliger

[1] All-in ratings use upper-case letters from "AAA" to "D" while Viability Ratings use lower-case letters from "aaa" to "d". Throughout the paper, we capitalize Fitch-specific terms (e.g., Viability Ratings) and use lower-case letters for generic names (e.g., all-in rating).

and Sarig (2000)).

We exploit our unique setting to first examine what drove the refinement in Fitch standalone ratings. Did the refinement reflect a goal to inflate standalone ratings? Studies of ratings inflation distinguish two possible channels – ratings shopping and ratings catering. Ratings shopping describes a setting where an entity can solicit credit ratings from several ratings agencies, and then pay for the highest one (Faure-Grimaud, Peyrache and Quesada (2009); Skreta and Veldkamp (2009); Doherty, Kartasheva and Phillips (2012); Bar-Isaac and Shapiro (2013); Farhi, Lerner and Tirole (2013)). This channel is unlikely to have played a role in the event we study, as the refinement of standalone ratings affected the entire Fitch universe of banks simultaneously. There was no opportunity for banks that felt disadvantaged to shop around.

However, the refinement provided a rare opportunity to re-adjust many ratings at the same time in order to cater to certain banks (Mathis, McAndrews and Rochet (2009); Becker and Milbourn (2011); Bolton, Freixas and Shapiro (2012)). We thus study whether the pattern of rating refinements is linked to bank characteristics such as size – a proxy for potential future business – nationality, and past securitization business with Fitch. In effect, we test for ratings catering, while controlling for ratings shopping.

To study the drivers of the standalone ratings refinement, we use a sample of 212 publicly-listed, widely-held banks from 39 countries. We develop benchmarks of what investors might have expected for the new 21-point standalone ratings on July 20, 2011. As these expectations are unobservable, we consider four possible benchmarks – two based on information available *ex ante* and two on *ex post* information. We thus measure four variants of rating surprises, each equal to the difference between an actual 21-point standalone rating and the corresponding expectation based on one of the four benchmarks.

We find evidence of higher than expected standalone ratings across our sample, as the distribution of rating surprises is positively-skewed and non-random. In our sample, positive rating surprises tend to be associated with larger size, stronger liquidity positions, lower 9-point standalone ratings, and with banks headquartered either in more highly-rated countries or outside North America. Interestingly, there is some evidence that banks experience more negative rating surprises when they have a higher share of past securitization business with Fitch and when a Fitch analyst is located in the same city as the bank's headquarters. We thus find only weak evidence for ratings catering.

Beyond drivers, we study whether Fitch's private information – as revealed by the refinement of standalone ratings – was useful to bank shareholders. Shareholders are the residual claimants in the event of default, having the most at stake in the event of bankruptcy or a forced recapitalization. This was made explicit during the 2007-2009 global financial crisis, with bank shareholders diluted or wiped out in the United States and Europe.

In studying the impact on shareholders, we are motivated by two Fitch objectives for transitioning bank standalone ratings from the coarser "9-point" scale to the more granular "21-point" scale (Fitch (2011a); Fitch (2011b)). First, the more granular scale was meant to provide greater clarity on Fitch's assessments of banks relative intrinsic financial strength. For example, Bank of America, Goldman Sachs, and Morgan Stanley were all rated "B/C" on the 9-point standalone rating scale. When the more granular 21-point ratings were released, Goldman Sachs received an "a+", Morgan Stanley received an "a", and Bank of America received an "a-", indicating that Fitch saw important differences in their intrinsic financial strength. We ask whether this information was valuable or not to bank shareholders.

The second objective was to allow market participants to infer directly the importance of

sovereign support in each bank's measure of default risk. By stating both ratings on the same 21-point scale, it became clear that Goldman Sach's all-in rating of A+ was the same as its standalone rating, Morgan Stanley's all-in rating of A was 1 notch higher, and Bank of America's all-in rating of A+ was 2 notches higher. Did bank shareholders react to Fitch's assessment that the dependence of default risk on sovereign support differed across banks?[2]

For a clean analysis of the impact of the ratings' refinement on bank stock prices, it is desirable that no other information relevant for shareholders is released at the same time. Fitch disclosed the refinement of standalone ratings for its entire universe of banks on a *single* day in the middle of the summer. We are thus fairly certain that the event we study is not confounded by the release of equity analyst reports, bank earnings releases or financial statements. Our main concern is that on the evening of Fitch's disclosure, the European Commission circulated a proposal to tax Eurozone banks to fund the repurchase of outstanding Greek sovereign debt, prompting a late-night meeting between the French and German leaders. The proposed bank levy was dropped the following day.[3] We address the potentially contaminating effect of these political events in two ways: by including regional dummies and by recalculating our results after excluding European banks.

For the same sample of 212 banks, univariate tests provide initial evidence that positive rating surprises are associated with higher cumulative abnormal returns (CARs). Banks that received positive standalone-rating surprises broadly outperformed banks with negative surprises, by about 1.5 percentage points (pp) over the event window of two days before to two days after

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[2] We also study creditors' reaction using credit default swap (CDS) spreads. We find no statistically significant reaction, but this finding is inconclusive as the CDS sample is almost three times smaller than the stock-price sample. These results are reported in Appendix A. We also explored using bank bond prices but could not find sufficiently comparable and actively-traded bank bonds.

[3] See "Sarkozy and Merkel in 11th hour talks" by Peter Spiegel and Quentin Peel, 20 July 2011, in *The Financial Times*, "Banks rise on demise of Sarkozy tax plan" by Neil Dennis, 21 July 2011, in *The Financial Times*, and the timeline of the Greece crisis at *https://en.wikipedia.org/wiki/Greek_government-debt_crisis_timeline*.

the event. In regressions with CARs as a dependent variable, the coefficient on rating surprises maintains its sign and statistical significance when we introduce region dummies and when we exclude European banks from the sample. This finding suggests that our results are robust to controlling for the potential stock-market impact of the European proposal.

To dig deeper into the cross-sectional outperformance associated with positive rating surprises, we include additional bank-specific information, such as measures of balance sheet strength, profitability, past securitization business with Fitch, and the sovereign rating in the bank's home country. These bank characteristics are as of year-end 2010 and were publicly available several months before the Fitch ratings refinement on July 20, 2011. Theory would suggest that they would affect the stock market around this date only if there was then new information about their relationship with banks' strength and performance. To the best of our knowledge, such new information could have come only from the ratings refinement itself. This refinement could have changed market perceptions of the importance of various bank characteristics in Fitch's assessments of intrinsic financial strength. We do find statistical significance for some of these variables, but it changes drastically when we control for the concurrent political events in Europe by removing the European banks from the regressions sample. This result points to the value of future research that investigates further the channels through which standalone rating surprises affect bank stock prices.

Our study makes four distinct contributions to the literature. First, we study a unique event in which Fitch unequivocally refined the information embedded in standalone ratings of banks' intrinsic financial strength, while keeping unchanged its estimates of banks' default risk. While typical ratings actions are mainly directed at bank creditors, this unique setting allows us to examine the importance of credit rating information for bank shareholders, who are the

residual claimants. Second, the standalone ratings we focus on are unique to banks and have so far received only marginal attention in the academic literature. Given policy initiatives to wean banks off sovereign support and to embed measures of banks' intrinsic health in regulation, these ratings warrant more study. Third, we test whether the changes in Fitch's methodology led to ratings inflation. We find strong evidence in support of this hypothesis but only limited evidence of ratings catering. Finally, we contribute to the existing literature on the role of credit ratings in addressing the opacity of banks. We show that information in Fitch's standalone ratings is valuable for equity investors.

The remainder of the paper is organized as follows. In Section I, we provide background on bank standalone ratings and Fitch's change in ratings methodology. In Section II, we outline our testable hypotheses. Section III describes our methodology and section IV describes our data. Section V presents our empirical results and robustness tests. Section VI concludes. An appendix reports additional results, based on CDS spreads for a sample of 74 banks.

I. Details on the Fitch Refinement

The first bank standalone ratings were introduced in 1978 by IBCA, which was acquired by Fitch in 1997.[4] This history explains the origin of the unusual 9-point rating scale from "A" to "E". Despite their long history, standalone ratings have been understudied, with existing research only using them to infer estimates of sovereign support.[5] In contrast to all-in ratings, standalone ratings have not been used in regulation or for determining institutional investors' eligible assets. This situation may change as the Basel Committee on Banking Supervision is considering the use of standalone ratings as a basis of risk-weights on interbank exposures (Basel Committee on

4 Moody's Investor Services introduced bank standalone ratings in 1995 and Standard & Poor's finally began publishing them in the fourth quarter of 2011.

5 See Packer and Tarashev (2011), Ueda and Weder di Mauro (2013) and Kroszner (2016) for reviews of post-crisis adjustments to both standalone and all-in bank ratings.

Banking Supervision (2015)).[6]

Prior to the 2007-2009 crisis bank shareholders may have paid little attention to standalone ratings in the belief that intrinsic financial strength was largely inconsequential, as governments were bound to keep troubled banks afloat. This belief proved erroneous, with many U.S. and European banks nationalized or bailed out with substantial losses to shareholders. Post-crisis, governments have made public statements indicating reduced official support for banks suggesting that equity investors – who could be diluted or wiped out when a bank gets into trouble – have an incentive to monitor banks' intrinsic financial strength.

In response to criticism and demands from market participants, Fitch Ratings published a new set of 21-point standalone ratings for its universe of 861 banks on July 20, 2011. Figure I provides a timeline of Fitch actions and describes our setup. Fitch outlined its reasoning in a report accompanying the release (Fitch (2011b)), largely reiterating statements made in March 7, 2011 when the agency first signaled its intention to refine the scale of standalone ratings (Fitch (2011a)).[7] First, the 21-point standalone ratings provided more granularity on the intrinsic financial strength of banks than the existing coarse 9-point scale. Second, the 21-point standalone ratings could be compared directly with traditional all-in credit ratings, which are also reported on a 21-point scale. Such a comparison reveals the extent to which a bank's all-in rating incorporates the probability of sovereign support. Finally, Fitch added that adopting a similar scale and set of symbols as competing rating agencies would benefit market participants while highlighting differences in opinions.

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[6] At the time of the ratings transition, July 2011, there was no indication that standalone ratings could become a driver of regulatory risk weights. Thus, the refinement of Fitch's standalone ratings revealed information about banks' intrinsic financial strength, not about the regulatory requirements associated with interbank exposures.

[7] See also "Fitch Maintains Approach to Bank Credit Ratings; Evolves Individual Rating Scale Endorsement Policy", press release dated March 7, 2011, 5:00 AM (EST).

[Insert Figure I here]

Even though Fitch signaled in March 2011 the transition to the 21-point scale, the exact date of the release was not communicated in advance. On July 20, 2011, Fitch published a press release, a report, and an Excel spreadsheet with the name, country, region, all-in rating, 9-point standalone rating, and 21-point standalone rating for each of the 861 banks in its rating universe. The release was timed for 05:00 Eastern Standard Time, when markets were open in Europe but prior to the opening of North American markets. This timing ensured that the information was communicated as broadly as possible on a single day for all banks in Fitch's universe.

II. Testable Hypotheses

Credit ratings reduce the information asymmetry problem between a firm and its stakeholders (Boot, Milbourn and Schmeits (2006)). They reflect both public and private information collected by the rating agency, with standard ratings actions signaling a change in the borrower's financial condition. Hand, Holthausen and Leftwich (1992), Ederington and Goh (1998) and Kliger and Sarig (2000) show that ratings changes matter for explaining stock and bond returns of non-financial borrowers, with Sironi (2003), Cavallo, Powell and Rigobon (2013) and Correa, Lee, Sapriza and Suarez (2014) finding similar effects for banks.

The fact that banks have standalone ratings, whereas most other rated entities do not, is consistent with the view that banks are more opaque than non-financial institutions (Morgan (2002); Hirtle (2006); Iannotta (2006); Livingston, Naranjo and Zhou (2007); Bannier, Behr and Güttler (2010); Iannotta (2011); Jones, Lee and Yeager (2012)).[8] Banks may be unique in that they are perceived to benefit from implicit or explicit sovereign support, even in cases where the

[8] While Flannery, Kwan and Nimalendran (2004) initially argued that banking assets were not unusually opaque, Flannery, Kwan and Nimalendran (2013) qualified their earlier position to suggest that bank assets are harder to assess during crisis periods.

government is not a shareholder. As a result, creditors wishing to anticipate a credit default need to assess both the intrinsic financial strength of the bank and the likelihood and magnitude of extraordinary support it may receive. But rating agencies may also provide valuable information to bank shareholders, who stand to lose the most in a bankruptcy or crisis. Not surprisingly the experience of the 2007-2009 crisis led investors to demand more granular ratings information, which motivated Fitch to transition to the finer 21-point scale for standalone ratings (Fitch (2011b)).

Kliger and Sarig (2000) study a comparable event in April 1982 when Moody's refined their all-in credit ratings by attaching numerical modifiers to the coarse rating categories (e.g., A => A1, A2, A3).[9] They highlight that credit ratings are categorical, not continuous, with only a limited number of categories. A coarse scale forces the rating agency to assign the same rating to entities with different estimates of default probability. By refining its scale, the rating agency can reveal more of its private information about the relative creditworthiness of different entities. Using a sample of 812 U.S. non-financial bonds, Kliger and Sarig (2000) find that the announcement of better-than-expected refined ratings is associated with positive abnormal bond returns that are larger than the returns of bonds with worse-than-expected refined ratings. As they also find a negative relationship between rating surprises and equity values, Kliger and Sarig (2000) conclude that the Moody's refinement revealed private information that was valuable to both bondholders and shareholders, leading to a wealth transfer from the latter to the former with no overall impact on firm value.

We build on this research by studying a unique event, in which Fitch revealed information about banks' relative *intrinsic* financial strength (i.e., the relative likelihood of default in the

[9] Tang (2009) examines how the Moody's refinement affects firm financing and investment decisions.

counterfactual absence of sovereign support), but no change to its assessment of relative *default risk* (i.e., the relative likelihood of default in the *actual* presence of sovereign support). Thus, the information revealed in this event was directly relevant for bank shareholders. By contrast, the 1982 Moody's refinement studied by Kliger and Sarig (2000) disclosed new information about assessments of relative default risk. In the case of banks – and absent Moody's standalone ratings – it is impossible to disentangle the intrinsic-strength and external-support components of this refinement.

One challenge in our study is how to interpret the refinements of Fitch's standalone ratings for banks. Existing research proposes two channels for explaining credit ratings inflation – one driven by the rated entities and the other driven by the agencies – with empirical support for both. The first channel is ratings shopping, which describes the situation where entities solicit ratings from multiple agencies and choose to pay for the highest one (Faure-Grimaud, Peyrache and Quesada (2009); Skreta and Veldkamp (2009); Doherty, Kartasheva and Phillips (2012); Bar-Isaac and Shapiro (2013); Farhi, Lerner and Tirole (2013)). The second channel is ratings catering, where competition among the rating agencies for future business leads to more favorable ratings for borrowers (Mathis, McAndrews and Rochet (2009); Becker and Milbourn (2011); Bolton, Freixas and Shapiro (2012)).[10] Following the subprime crisis, a number of researchers have shown that ratings catering was linked in particular to the size of the securitization business rated by a particular agency (Griffin and Tang (2012); He, Qian and Strahan (2012); Cohen and Manuszak (2013); Griffin, Nickerson and Tang (2013); Hau, Langfield and Marques-Ibanez (2013); He, Qian and Strahan (2015); Efing and Hau (2015)). There is a conflict of interest when the same agency rates a bank as well as the securitization

[10] Competition between agencies can also lead to more ratings coarseness (Goel and Thakor (2015)) which *per se* need not imply ratings inflation. Concerns about agency reputation can make ratings actually less informative (Morris (2001); Dimitrov, Palia and Tang (2015)) or with competition even cyclical (Hirth (2014)).

business this bank manages.

Our study contributes to this literature by examining a setting where ratings catering is a concern (as many banks have securitization-related business with Fitch) but there was no possibility for ratings shopping (as the refinement we focus on affected existing ratings). In particular, Fitch modified the ratings of its entire universe of rated banks at the same time. The existing standalone ratings were on a coarse 9-point scale, with overlapping mappings to the 21-point scale of all-in ratings as shown in Table I. The coarse standalone rating of "A/B", for example, could map to any long-term rating from "aa+" to "a". The lower coarse standalone rating of "B" could map to a long-term rating from "aa-" to "a-". Thus, a bank rated lower on the coarse scale than a competitor could be more highly rated on the all-in scale.

[Insert Table I here]

If the transition from the 9-point to the 21-point scale were random, it would result in symmetric distributions of the more granular ratings around their expected levels (we discuss our take on expected ratings below). Alternatively, since each 9-point rating maps into a range on the 21-point scale, there is plenty of scope for the refined ratings to be systematically higher than their expected levels. We check formally whether this is the case:

H1A: The refinement of Fitch's rating scale resulted in higher than expected standalone ratings for banks.

If we find evidence in support of this hypothesis, we then need to understand what is driving any potential ratings inflation. To the extent that refinements change the standalone ratings of banks relative to their peers, this relative change could reflect either the agency's view on intrinsic strength or a preferential treatment of client banks. We therefore test whether the higher ratings are explained by ratings catering using two proxies: bank size and the amount of

past securitization business that Fitch received from the given bank. Both measures may indicate how much business Fitch may be able to attract in the future.

H1B: The refinement of Fitch's rating scale resulted in higher ratings for banks that conduct more business with Fitch (ratings catering).

We next examine how markets react to the greater disclosure of Fitch's private information. Our premise is that shareholders will pay attention to standalone ratings, as they reveal information on banks' intrinsic strength. Specifically, all else equal, a bank with greater intrinsic financial strength should have a lower cost of equity and should thus generate a higher present value of cash flows. Ultimately, this should lead to a higher stock price.[11]

In addition, changes to *relative* standalone ratings should also matter. Fitch's private information that Goldman Sachs for example has greater intrinsic financial strength than Bank of America may be material information for bank shareholders. In this case, we may observe competition effects in the stock reaction, with banks receiving positive news outperforming peers receiving negative news (Lang and Stulz (1992); Flannery (1998); Slovin, Sushka and Polonchek (1999)). Our second hypothesis therefore is:

H2: The stock prices of banks experiencing positive rating surprises will outperform the stock prices of banks experiencing negative rating surprises.

III. Methodology

We begin with a brief overview of our methodology, with more detail provided below. First, we test for evidence of higher than expected ratings by studying the pattern of 21-point standalone ratings relative to the 9-point standalone ratings. Second, we create measures of positive and negative rating surprises and examine whether these surprises can be explained by bank

[11] Assume bank assets follow a diffusion process as in Leland and Toft (1996), with both a drift and a variance term. All else equal, a bank with a higher variance would have a lower standalone rating and a higher value of equity, as equity is a call option on the assets. Alternatively, a bank with a smaller drift would also have a lower standalone rating but a lower value of equity. This corresponds to our null hypothesis.

characteristics and whether there is evidence of ratings catering by Fitch. Third, we test if stock reactions – as reflected in CARs – can be explained by the magnitude and direction of rating surprises. In these tests, we control for bank location, as it could be systematically related to market reactions to political announcements that had nothing to do with the refinement of Fitch's standalone ratings (see above). Then, we test whether stock market reactions relate systematically to bank characteristics that had been known long before the event we focus on. A systematic relationship would indicate that Fitch's announcement led shareholders to revise the weight attributed to various characteristics in assessing banks' intrinsic health. Finally, we check the robustness of these results to different measures of rating surprises, event windows, and samples of banks. We also conduct tests to address endogeneity concerns.

Proxies of Investor Expectations for 21-Point Standalone Ratings

Table I reproduces the Fitch mapping from the 9-point standalone rating to the 21-point standalone rating. Given that we cannot observe what shareholders expected when Fitch released the granular 21-point standalone ratings, we follow Kliger and Sarig (2000) and create four proxies of expected ratings: two based on information available prior to the release (ex ante), and two based on information available after the ratings were published (ex post).

Our first benchmark is based on the midpoint mapping from the 9-point standalone rating in column (1) of Table I to the 21-point scale published by Fitch prior to the release of the Viability Ratings in column (3) (see Fitch (2010) and Fitch (2011a)). In constructing the first benchmark, we assign numerical values to the 21-point standalone ratings in column (3), where "aaa" has the highest value of 20, "c" the lowest of 0, and a rating notch has a value of 1. On the basis of this, we translate the alphanumeric ratings into numerical ranges in column (4). The midpoints of these ranges – in column (5) – become ex ante expected values for our *Midpoint*

Map benchmark. One shortcoming of this approach is that five of the nine 9-point standalone ratings have midpoints that are not whole numbers, placing them in between actual rating categories. For example, the midpoint of the coarse rating "B" is 15.5, placing it between "a+" and "a". We account for this false precision in our tests below.

The Midpoint Map is not a straightforward benchmark. First, the Fitch mapping in Table I features overlapping categories for each of the nine coarse standalone ratings. For example, the coarse standalone ratings of "B/C" and "C" can both be mapped to "bbb+" or "bbb" on the 21-point scale. Second, there is variation in the number of possible ratings across categories. One coarse rating ("A") is mapped to three ratings on the 21-point scale. Five coarse ratings ("B", "B/C", "C", "C/D", "E") are mapped to four ratings on the 21-point scale. The remaining coarse ratings ("A/B", "D", "D/E") are mapped to five ratings on the 21-point scale. Third, Fitch provided little ex ante guidance on how coarse ratings would be translated to the 21-point scale. It was not clear whether the refined ratings would be grouped at the top, the middle, or the bottom of the available ranges. Thus the Fitch mapping featured considerable uncertainty.

Our second benchmark, called *Sovereign Support*, is based on the Fitch Support Rating Floor. The Support Rating Floor (SRF) is a rating on the 21-point scale that reflects the probability of extraordinary sovereign support. The March 2011 report, which announced the 21-point standalone ratings methodology, stated that a bank's all-in rating is the higher of the 21-point standalone rating and the SRF, as shown in Figure II.

[Insert Figure II here]

While this relationship appears simple, there are a number of complications. First, the 21-point SRF is based on the Support Rating, expressed on a scale from 1 to 5. A Support Rating of 1 indicates "an extremely high probability of extraordinary support" while 5 indicates that

"external support, although possible, cannot be relied on" (Fitch (2011b)). Even though all banks have a Support Rating, not all banks are given an explicit SRF. In cases where the SRF is not explicit, a Support Rating from 1 to 4 is associated with a minimum SRF. But when the Support Rating is 5 – as is the case of one quarter of the banks in our sample – there is no SRF. Second, SRF ratings are not widely disseminated. They can be obtained on the Fitch website by looking up a borrower's profile or reading a press release of a ratings action. But they were not included in the Excel spreadsheet containing the new 21-point standalone ratings, nor are they readily available on Bloomberg, Datastream, Bankscope, Compustat or Capital IQ. Third, there are differences between bank holding companies and operating companies. For example, the bank holding company JPMorgan Chase & Co. has a Support Rating of 5 and no SRF, while the U.S. operating company JPMorgan Chase Bank N.A. has a Support Rating of 1 and an SRF of "A+". Fourth, the hierarchy shown in Figure II is not respected for a small number of banks that have both a local currency and a foreign-currency all-in rating (at a notch below). In these cases, the 21-point standalone rating can be higher than the foreign-currency all-in rating. Similar to the 9-to-21-point mapping, it is uncertain if shareholders knew these features of the Fitch sovereign support framework.

Nonetheless, our Sovereign Support benchmark assumes market participants understood the SRF framework and could predict a subset of 21-point standalone ratings using the relationship in Figure II. In cases where the all-in rating is higher than the SRF, the 21-point standalone rating must be the same as the all-in rating. But when the all-in rating equals the SRF, the exact 21-point standalone rating is unknown. It could be the same as the SRF or lower, with the range potentially restricted by the 9-to-21-point mapping in Table I. Formally, the Sovereign Support benchmark is:

If *all-in rating > Support Rating Floor,* then *21-point standalone rating = all-in rating* (1)

If *all-in Rating = Support Rating Floor,* then *21-point standalone rating = min(all-in rating, midpoint of the Fitch 9-to-21-point mapping)* (2)

Two examples illustrate this calculation. Nordea Bank AB of Sweden had an all-in rating of "AA-" (17.0) and an SRF of "A-" (14.0). Given that the all-in rating is the higher of the SRF or the standalone rating, the 21-point standalone rating must be "aa-" (17.0). Raiffeisen Bank of Austria had an all-in rating of "A" (15.0) and an SRF of "A" (15.0). Given that the all-in rating is equal to the SRF, the 21-point standalone rating is unknown, although it can be expected to be in the range of "bb+" (10.0) to "bbb" (13.0) based on its coarse standalone rating of "C" (recall Table I). The expected 21-point standalone rating is therefore the minimum of (15.0, 13.0), implying an expected standalone rating of "bbb".

Given the uncertainty with the above two ex-ante benchmarks, we also create two ex post benchmarks based on the actual 21-point standalone ratings released on July 20, 2011. The first of these ex post benchmarks is shown in column (6) of Table I. The *Mean of 21-Point Standalone Ratings* is calculated as the mean 21-point standalone rating across the banks in each of the categories on the 9-point scale.[12] To avoid any selection bias, we calculate the averages using Fitch's entire universe of 861 banks, while most of our analysis considers only a subsample of this universe (see below). Table I shows, for instance, that the average bank with a 9-point standalone rating of "A/B" received a 21-point standalone rating score of 17.4.

We also compare a bank's ranking based on the 9-point standalone ratings (available *ex ante*) with the same bank's ranking based on the 21-point standalone ratings (available *ex post*).

[12] We verify that all the subsequent tests using the mean of the 21-point standalone rating are robust when using the median instead. These results are available upon request.

The Fitch definition of 9-point standalone rating indicates that a bank rated "B/C" (13.5) has a higher intrinsic financial strength than a bank rated "C" (11.5). But, in a reversal of this ranking, some banks rated "C" received higher 21-point standalone ratings than banks rated "B/C". If standalone rankings reverse order, there may be a reversal in banks' perceived intrinsic strength, leading to a stock price reaction.

Our second ex post benchmark – called *Ordinal Ranking* – accounts for ranking reversals in the transition from 9-point to 21-pount standalone ratings. In constructing this benchmark, we focus on one bank, A, and identify any other banks, B, vis-à-vis which it experiences a ranking reversal.[13] When such banks exist, we calculate the benchmark as the 9-point standalone rating of A minus the average 9-point standalone rating of banks B. When banks B do not exist, we set the Ordinal Ranking benchmark to zero.

Despite being calculated ex post, these two benchmarks are still informative for our study. They are simple to calculate, and are widely and immediately available, thus potentially affecting the market's reaction to Fitch's 21-point standalone ratings release on July 20, 2011. In addition, the ex post mean benchmark embeds the assumption that shareholders did not make *systematic* errors in forming their expectations.

Measures of Rating Surprises

We create four proxies of rating surprises based on our benchmarks. The first three proxies take the same form, with a surprise equal to the actual minus the expected rating. The fourth proxy zooms in on cases of ranking reversals and measures by how many rating notches these reversals benefit or harm individual banks. Specifically, we calculate the following:

[13] If a bank A in our sample experiences a positive (negative) ranking reversal vis-à-vis one or more other banks, B, then it does not experience a negative (positive) reversal vis-à-vis another bank C.

Rating Surprise for Midpoint Map= 21-Point Standalone Rating – Midpoint Map (3)

Rating Surprise for Sovereign Support= 21-Point Standalone Rating – Sovereign Support (4)

Rating Surprise for Mean of 21-Point Standalone = 21-Point Standalone Rating – Mean of 21-Point Standalone Ratings (5)

Rating Surprise for Ordinal Ranking = (21-Point Standalone for Bank A – mean 21-Point Standalone for Banks B) – (9-Point Standalone for Bank A – mean 9-Point Standalone for Banks B), (6)

where banks B are those vis-à-vis which bank A experiences a ranking reversal. The measure is zero if the set of banks B is empty.

Measures of Abnormal Stock Returns

We study the stock reaction to the announcement of 21-point standalone ratings using abnormal returns relative to three benchmarks, similar to Kliger and Sarig (2000). Our first measure is a *market model-adjusted return*. For it, we regress daily bank stock returns on the returns from a country-specific stock market index, the returns on the MSCI World Bank index, and a constant.[14] The MSCI World Bank index controls for factors that may be affecting this industry but are not captured by the country-specific stock market index. We estimate these regressions over an estimation window from 80 to 10 trading days prior to the announcement day. We use the coefficients from these regressions to predict the stock returns over the event window. The market model-adjusted abnormal return is the actual return minus the predicted return.

Our second measure is the *mean-adjusted abnormal returns*. It is equal to a bank's actual

[14] In an earlier version of the paper, we used the returns from an equal-weighted portfolio of 467 banks not rated by Fitch instead of the MSCI World Bank Index. The results are robust to using this alternative index.

stock return minus the average daily stock return for that bank over an estimation window from 80 to 10 trading days prior to the announcement.

Our third benchmark is the *size-adjusted abnormal returns*. The size-adjusted abnormal return is the actual stock return for a given bank minus the contemporaneous return of the equal-size decile portfolio of banks. This equal-size decile portfolio is based on the banks in the sample, where deciles are created based on total assets at year-end 2010, converted to U.S. dollars at year-end 2010 exchange rates.

We calculate CARs at the bank level for three different windows around the event: the two days from July 20 to 21, 2011 [0,1], the one week from July 20 to 24, 2011 [0,4] and the five days around the Fitch release, from July 18 to 22, 2011 [-2,2].

Impact of Greek Bail-Out Negotiations

One of many European summits concerning the Greek sovereign debt crisis took place on July 21, 2011 – the day following the Fitch announcement. At this summit, EU leaders debated a European Commission proposal for a tax on Eurozone banks to fund the repurchase of Greek sovereign debt. Given Germany's opposition, this levy was rejected, with the news made public on the day after Fitch's announcement. This news was potentially positive for banks exposed to Greece as well as (through a contagion channel, for example) banks exposed to Ireland, Italy, Portugal and Spain (collectively the "GIIPS"). International Banking Statistics available in July 2011 reveal that effectively only European banks had material exposure to GIIPS sovereigns. We find that the news from the EU Summit was associated with a positive stock reaction for Eurozone banks and no consistent pattern of stock reactions across non-Eurozone banks, thus possibly contaminating the stock market reaction to Fitch's rating refinement.

We address this concern in three ways. First, our measure of abnormal returns controls for

movements in the national stock market, as well as the change in the MSCI World Bank index. Second, we include as controls a dummy variable set to 1 for banks from Italy, Portugal and Spain (there are no Greek or Irish banks in our sample), and a second dummy set to 1 for other European banks. These dummy variables may pick up the average effect due to the news from the EU Summit. Third, we recalculate our results excluding *all* European banks.

IV. Data

When the refined standalone ratings were released, Fitch published an Excel spreadsheet containing the 21-point standalone ratings for its universe of 861 rated banks. The spreadsheet also contained the 9-point standalone ratings and the all-in ratings, but not the Support Ratings or the Support Rating Floors. We identify 279 publicly-listed banks where both stock return data from Datastream and financial statement data from Bankscope are available. We drop 18 banks that had no coarse standalone rating or all-in rating prior to the release of the 21-point standalone ratings, as we cannot calculate ratings surprises for these banks.[15] We drop another 28 banks that are majority-owned by a government or other investor, as Fitch assigns the standalone rating in these cases based on the rating of the majority owner. For example, the ratings of Turkey's Alternatifbank reflect the support from its majority shareholder, the Anadolu Group, which Fitch describes as a leading Turkish conglomerate. Finally, we drop the five Greek banks in our sample, as they were caught up with the difficulties facing the Greek sovereign in 2011. All five were downgraded on July 14, 2011, shortly before the release of the 21-point standalone ratings, and then downgraded again on July 26, 2011, days after the release. We hand collected data on the Support Rating and the Support Rating Floor from the Fitch website.[16] We also hand collected data on all Fitch ratings as of March 2011, prior to the announcement of the plan to

[15] Both the 9- and 21-point standalone ratings of 11 Chinese banks were first published on July 20, 2011.

[16] We were led to collect data by hand after finding errors in the Bloomberg data available for Fitch.

introduce 21-point standalone ratings.

Table II shows the final sample of 212 banks across 39 countries. The sample features a roughly even distribution across regions, with North American banks representing 29% of the sample, Asian banks 25%, European banks 25%, and banks from the rest of the world 21%.

[Insert Table II here]

We proxy for potential conflicts of interest between Fitch and individual banks using data on securitization activity from Hau, Langfield and Marques-Ibanez (2013) and Efing and Hau (2015). This data is based on the credit ratings of more than 6,500 mortgage- and asset-backed securities published by Fitch, Moody's and Standard & Poor's between 1999 and 2011. For each bank we create a variable, *Fitch Securitization Share*, capturing the volume of the bank's securitization business rated by Fitch over 2000 to 2010 as a percentage of the bank's total securitization business over this decade. Banks with no securitization business or no business with Fitch are assigned 0%. The ratings catering hypothesis would predict Fitch will assign a higher standalone rating if it has rated a greater share of a bank's past securitization business, all else equal.[17] But an alternative explanation is that Fitch may face less uncertainty about these banks' business and franchise value, which could lead it to assign a higher standalone rating, all else equal. We are therefore cautious when interpreting this variable as we cannot distinguish between these two explanations.

Given the literature on the importance of geographic proximity for mitigating information asymmetry through informal networks (e.g., Butler (2008), Agarwal and Hauswald (2010)), we construct a variable to identify banks where the Fitch analyst is located in the same city as the bank's headquarters. We download the Fitch press release for each bank prior to July 21, 2011,

[17] In an earlier draft, we use the natural logarithm of all securitization business for a bank whether rated by Fitch, Moody's or Standard & Poor's. The results are robust to this alternative proxy.

which names the Fitch analyst(s) responsible for the bank and provides their contact information. We set the dummy variable *Local Analyst* to 1 if the analyst is in the same city as the bank's headquarters (or within a two hour drive), and 0 otherwise. Our expectation is that analysts who are closer to the bank's head offices may provide higher standalone ratings due to greater familiarity or stronger ratings catering.

Table III provides descriptive statistics for the Fitch ratings used in this analysis, the four benchmarks of rating surprises, seven bank-specific characteristics, and CARs over three time windows. Fitch ratings are translated into a numerical value, where the highest value corresponds to the highest rating category (as shown in Appendix B). The average bank in our sample has a 21-point standalone rating of "bbb+", corresponding to a value of 13.0, statistically higher than the average 9-point standalone rating of 12.3 (p-value 0.001). The average Support Rating Floor is lower at 9.9, slightly below "bb+", implying the average standalone rating is 3.1 ratings notches above this floor.[18] Our sample includes 49 banks with a Support Rating of "5" and a Support Rating Floor of "no floor", indicating support cannot be relied upon. For the four measures of ratings surprises a value of 1.0 represents one notch on the 21-point scale. For example, a bank receiving a "bbb+" rating when the expectation was for a "bbb" would have a positive surprise of 1.0. Appendix C reports correlations between all measures.

[Insert Table III here]

With stability in mind, we calculate bank-specific characteristics as the time averages between 2008 and 2010 of variables motivated by existing studies and by Fitch (Fitch (2011a)). We proxy for size using the natural logarithm of total assets, *Ln(Assets)*, converted to millions of U.S. dollars at year-end exchange rates. *Fitch Securitization Share* is the sum of Fitch-rated

[18] Two Brazilian, one Kuwaiti, three Thai and three Turkish banks have all-in ratings above their sovereign rating. These cases represent 3.8% of our sample.

securitizations as a percentage of all securitization business originated by a given bank from 2000 to 2010. We measure leverage as *Common Equity/Total Assets*, using common equity at book value. Fitch identifies profitability, liquidity and funding as key drivers of ratings (Fitch (2011a)). Profitability is measured using *Return on Equity* (ROE), which is net income divided by average shareholders' equity. Our proxy for liquidity risk, *Liquidity Ratio*, is cash and marketable securities divided by the sum of customer deposits and short and long-term debt. Our proxy for funding risk, *Short-term Funding*, is based on Demirgüç-Kunt and Huizinga (2010), who use the share of short-term funding (interbank borrowing plus short-term debt) as a percentage of total funding (interbank borrowing, short-term debt and long-term debt). The local analyst dummy is set to 1 if the Fitch analysts are located in the same city as the bank's headquarters or within a two-hour drive, and 0 otherwise. CARs are calculated using three methods: market model-adjusted, mean-adjusted, and size-adjusted. We sum the CARs over different windows to check for robustness. Within each CAR measure, Appendix D shows that series based on different windows are pairwise correlated from 33% to 87%.

V. Results

Testing Higher than Expected Standalone Ratings (H1A)

We begin by considering all banks in Fitch's rating universe to examine whether the refinement of the agency's rating scale led to higher than expected standalone ratings. We test this first hypothesis in several ways. First, we test whether the mean (or median) value of the 21-point standalone ratings is statistically different from the midpoint in the mapping provided by Fitch. Table I (column (6)) shows the results of a parametric test for the universe of 861 banks rated by Fitch. The mean of 21-point standalone ratings is higher and statistically different than the midpoint of the range for each of the 9-point categories. For the full sample, the 21-point

standalone ratings appear to be higher by around half a rating notch, as seen in the final row of the table (10.8 vs. 10.4).

Second, we visually inspect the outcomes for the 212 banks in our sample. Table IV shows the matrix of 9-point standalone ratings in the columns vs. the 21-point standalone ratings in the rows. The shaded boxes represent the ranges (or buckets) communicated by Fitch in their mapping, corresponding to columns (1) and (3) in Table I. The values in each cell represent the number of banks with the corresponding 9-point and 21-point ratings, with a total of 212 banks. We note that the majority of observations are in the top half of each bucket, with five banks receiving 21-point standalone ratings above the buckets. This pattern is consistent with ratings inflation for our sample banks, but it is not conclusive. We therefore test the probability of observing this distribution using Monte Carlo simulations with random allocation within each bucket based on the Rating Surprise for Midpoint Map. This test rejects the null hypothesis that this distribution is random, leading us to conclude the pattern is not the result of chance and is supportive of ratings inflation (H1A).[19]

[Insert Table IV here]

We note many examples in which the transition from the 9-point to the 21-point scale triggered a reversal in the ordinal ranking of standalone ratings. For example, there are 18 banks rated "C" (11.5) on the 9-point scale that ended up with higher ratings on the 21-point scale than 8 banks rated "B/C" (13.5) on the 9-point scale. Overall, 75 of the 212 banks in the sample experienced a rating reversal. We examine such cases in greater detail below.

[19] We rerun our entire analysis so far, and what follows, for March 7, 2011, the date when Fitch signaled its intention to modify the ratings scale for bank standalone ratings. Results are qualitatively quite similar, though statistically less significant and quantitatively smaller, suggesting most information pertinent to investors concerning the rating changes became available only on July 20, 2011. These results are available upon request.

Explaining Rating Surprises

Next we examine the drivers of rating surprises. Figure III provides histograms for the four surprise proxies, based on different benchmarks. The distribution of rating surprises based on the *Midpoint Map* benchmark is positively skewed, with a large number of banks receiving 21-point standalone ratings that are more than one notch higher than expected. The Sovereign Support benchmark provides a different picture, as the majority of 21-point standalone ratings could be predicted from the corresponding all-in rating and Support Rating Floor. Surprises based on the Mean of 21-Point Standalone Ratings benchmark have a roughly symmetric distribution by construction, with slightly more positive than negative surprises. The distribution of surprises based on the Ordinal Ranking benchmark has large positive and negative tails.

[Insert Figure III here]

Table V reports the distribution of rating surprises across positive (higher than expected), neutral (as expected) and negative (lower than expected) outcomes. The Rating Surprise for Midpoint Map generates 43% positive surprises and only 6% negative surprises. We treat any surprises within half a notch as neutral, as they are artificially generated when the midpoint of the relevant range is not a whole number. Using the Rating Surprise for Sovereign Support benchmark, bank Viability Ratings are easily predictable for 82% of the banks, whose all-in ratings are greater than the corresponding Support Rating Floors. With only 3 banks or 1% of the sample showing a positive surprise, we anticipate finding no statistical significance in response to positive surprises for this proxy. Again, rating surprises based on the Mean of the 21-Point Standalone are more balanced by construction, with 39% positive surprises and 26% negative. Finally the Ordinal Ranking benchmark generates 20% positive surprises and 15% negative surprises, with roughly two-thirds of the banks maintaining their ordinal ranking.

[Insert Table V here]

Testing Ratings Catering (H1B)

We test whether rating surprises can be explained by ratings catering. Table VI provides regression results for the sample of 212 banks. We run three specifications for each benchmark. The first two specifications test bank size and the Fitch securitization share separately. These variables are pairwise correlated at 45% (40% when excluding the 53 European banks). This correlation appears to be driven by the largest banks who are most engaged in securitization activity.[20] The third specification includes bank-specific control variables. We include region dummies, with North American (US and Canadian) banks as the base case, as well as dummies for the top three and bottom three categories of the 9-point standalone ratings. The regressions are estimated with robust standard errors with clustering by country.

[Insert Table VI here]

The regressions explain from 22% to 34% of the variation in rating surprises, with the adjusted R-squared noticeably lower for the Sovereign Support benchmark as expected. Rating surprises are positively associated with sovereign rating, liquidity, and the region dummies (outside North America, which is the base case). Interestingly the local analyst dummy is always negative but only statistically different from zero in half the cases, suggesting that banks with a local analyst receive smaller positive or larger negative surprises than the average bank. The positive association between rating surprises and bank size is particularly robust. When used alone, the Fitch securitization share has a positive but not statistically significant coefficient in three out of the four specifications. Combined with bank size, the securitization share produces a

[20] Tobit regressions of Fitch securitization share on dummies for bank size quintiles generate monotonically increasing coefficients that are statistically significant for the upper three quintiles of bank size (i.e., largest 60% by assets), but generate a pseudo-R^2 of only 23%.

statistically significant negative coefficient in two out of the four specifications. These results provide inconclusive evidence for the hypothesis of ratings catering (H1B), as they suggest that bank size, but not necessarily past securitization business with Fitch, plays a role.[21]

Univariate Tests of Rating Surprises and Stock Returns (H2)

Next we test the hypothesis that the stock prices of banks experiencing higher rating surprises outperform banks experiencing lower rating surprises. We report univariate tests before presenting multivariate regressions.

In Table VII we compare the equally-weighted stock return for portfolios of banks that received positive rating surprises with that for portfolios of banks with negative surprises. We show results for the CARs summed from two days before to two days after the Fitch release. Results using the other event windows are qualitatively similar and available upon request. We provide results using three measures of CARs: market model-adjusted, mean-adjusted and size-adjusted. Panel A reports results for the full sample, and Panel B for the sample excluding European banks. Overall, the magnitude of stock reactions is greatest when using the mean-adjusted CARs and smallest for the size-adjusted CARs. The difference between positive vs. negative rating surprises is statistically significant in 18 out of 24 cases, ranging from 1.2% to 5.9%. The largest differences are for the Sovereign Support benchmark, likely due to the small number of surprises (36 out of 212 banks for the full sample, 29 out of 159 non-European banks).

[Insert Table VII here]

In Panel A, the difference between the CARs for banks experiencing positive surprises

[21] We do find a positive correlation between the Directional Ordinal Rating Quality Shortfall (DORQS) proposed by Hau, Langfield and Marques-Ibanez (2013) as a measure of the extant rating bias and the past securitization business with Fitch. This could explain why the rating surprises *per se* are not that strongly affected by past securitization business.

and those for banks experiencing negative surprises is positive and statistically significant in ten out of twelve cases. Concretely, the CAR outperformance ranges from 1.2% to 4.6% using market model-adjusted CARs, 2.3% to 5.9% using mean-adjusted CARs, and 1.4% to 3.8% using size-adjusted CARs. Across the twelve cases, the average outperformance is 2.9%. The results excluding European banks in Panel B are similar but the CARs are smaller in magnitude. The banks experiencing positive surprises outperform banks with negative surprises in seven out of twelve cases. For the eight cases that are statistically different from zero, the average outperformance is 2.4%. These univariate results support our second hypothesis (H2).

Multivariate Tests of Rating Surprises and Stock Returns (H2)

Next we perform regression analysis of stock-market reactions to positive and negative surprises. Table VIII presents cross-sectional regressions using a dummy variable for positive and negative rating surprises (with no surprise as the base case), with robust standard errors clustered by country. Panel A presents results for all banks and Panel B excludes European banks. The specifications in columns (1), (4), (7) and (10) only use the ratings surprise dummies and generate coefficients that have the same magnitude and statistical significance as the univariate tests in Table VII. The reference case with no rating surprises is captured by the constant, and is never statistically different from zero. At the bottom of each column we calculate the difference between the coefficients on the positive and negative dummies, and test whether this difference is statistically different from zero. Consistent with Table VI, this test in Panel A confirms that banks receiving positive surprises outperform banks with negative surprises by 1.2% to 4.6%, and in Panel B excluding European banks by 1.3% to 3.8%.

[Insert Table VIII here]

Columns (2), (5), (8) and (11) add regional dummies for banks in Asia,

Italy/Portugal/Spain, Europe less Italy/Portugal/Spain, and the rest of world. These variables capture stock market reactions related to Greece or other regional announcements unrelated to the Fitch release. Using the full sample of banks in Panel A, the positive coefficients for European countries suggest an average CAR of 1.28% to 2.48% over this five-day window. The inclusion of regional dummies changes little the magnitudes of the rating surprise coefficients, with the differences between positive and negatives surprises ranging from 1.2% to 4.6% and remaining statistically significant in three out of four cases. When we exclude European banks (Panel B), the outperformance of positive vs. negative surprises is statistically significant in all cases and ranges from 1.2% to 4.2%. We thus conclude that the effect of Fitch's ratings refinement on the stock market is robust to controlling for possible regional announcements.

To dig deeper into these results, we add the bank-specific characteristics in columns (3), (6), (9) and (12). These characteristics were publicly available long before the release of the 21-point standalone ratings. That said, the rating refinement may have revealed new information about the weights that Fitch assigns to different bank characteristics in assessing intrinsic financial strength. And this new information could drive stock-market responses.

Indeed, adding bank characteristics increases the fit of the regressions to 10% to 12% for the full sample (Panel A) and to 8% to 12% for the sample excluding European banks (Panel B). In Panel A, CARs are positively associated with sovereign ratings and ROEs, and negatively associated with the Fitch analyst dummy. In Panel B, CARs are positively associated with short-term funding, and negatively associated with the Fitch analyst dummy. Overall, the presence of a local Fitch analyst reduces five-day CARs by 0.81% to 1.5%.

Including bank-specific characteristics as explanatory variables results in generally lower magnitudes and statistical significance of the coefficients of rating surprise dummies. For the

Midpoint Map and Mean benchmarks, the impact of standalone ratings refinement on bank stock prices can be fully explained by new information about the weights that Fitch assigns to specific bank characteristics in assessing intrinsic financial strength. That said, the Sovereign Support results in column (6) and, to a lesser extent the Ordinal Ranking results in column (12), tell a different story. For these benchmarks, we still obtain a positive difference between CARs for positive and negative rating surprises. In three out of the four cases, these differences are statistically significant and imply a five-day outperformance of 1.0% to 3.3%.

Table IX repeats the cross-sectional regressions from Table VIII using continuous measures of ratings surprises instead of dummy variables. We include a squared term for rating surprises to capture non-linear dependencies. This term is only statistically significant for the Sovereign Support benchmark with the fewest number of surprises, consistent with a concave relationship between rating surprises and stock market reaction. The remaining results are very similar to Table VIII. In particular, we find that the coefficient on rating surprises has the expected positive sign and is statistically significant when using the midpoint map, mean of the 21-point standalone rating and ordinal ranking benchmarks. The results are robust to controlling for regional dummies. Again, the direction of the stock market reaction can be explained to a large extent by new information about the weights that Fitch assigns to different bank characteristics in assessing financial strength.

[Insert Table IX here]

VI. Conclusion

Using a unique event, we study drivers of rating refinements and examine evidence whether rating agencies' private information is valuable for bank shareholders. In July 2011, Fitch Ratings released standalone ratings on a 21-point scale for their universe of rated banks,

replacing the existing 9-point scale. The new, refined standalone ratings are directly comparable with Fitch's all-in ratings – the widely publicized measure of default risk that incorporates potential sovereign support. This event clarified Fitch's assessment of banks' intrinsic financial strength. It also clarified the degree of extraordinary sovereign support that Fitch had incorporated into bank all-in ratings, which were unaffected by the ratings refinement. In essence, Fitch publicly disclosed private information that was particularly relevant for equity investors, while maintaining the same assessment of bank default risk.

We find evidence that the transition to a more granular rating scale tended to deliver higher than expected bank standalone ratings, with weak evidence of ratings catering. A robust result is that larger banks tended to receive positive rating surprises. To a lesser extent, the same was true for banks that were more liquid and located in countries with a higher sovereign rating and outside North America. Equity investors responded positively to the publication of higher-than-expected ratings. We find that much of this investor response is due to greater clarity about the importance Fitch attributed to different bank characteristics when assigning standalone ratings. Having a local Fitch analyst covering the bank was associated with a negative stock market reaction during our event window, raising an intriguing topic for future research.

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Figure I: Timeline of the Change in Fitch's Bank Standalone Ratings

This figure provides a comprehensive timeline of Fitch actions and reports and of our study setup.

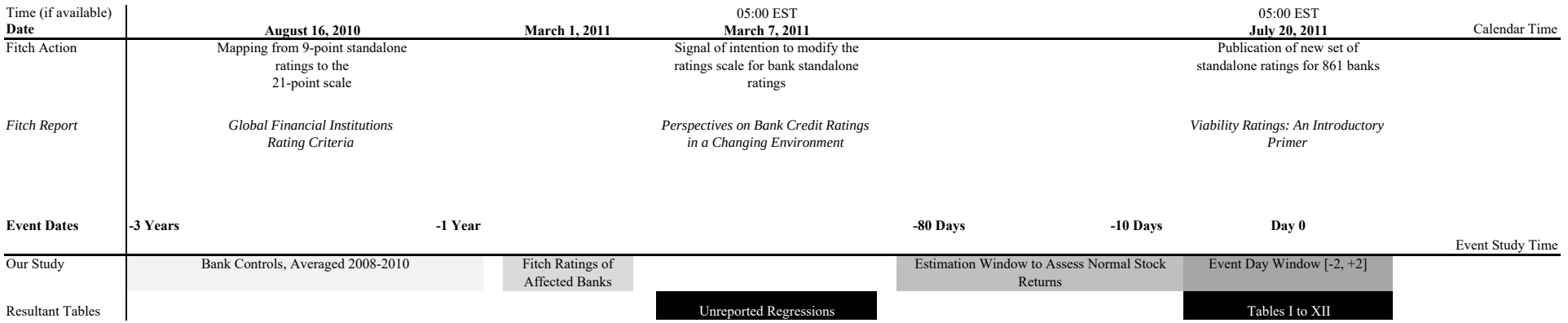


Figure II: Fitch's Bank Rating Methodology

This figure sets out the high-level framework communicated by Fitch, showing that the all-in rating ("Issuer Default Rating") is the higher of the 21-point standalone rating ("Viability Rating") or the Sovereign Support Rating ("Support Rating Floor"). Standalone ratings measure a bank's intrinsic financial strength, defined as a capacity to maintain ongoing operations and to avoid failure. The 21-point standalone rating excludes any extraordinary support that may be derived from outside of the entity, as well as any potential benefits to a bank's financial position from other extraordinary measures, including a distressed restructuring of liabilities. A bank's Support Rating Floor is derived directly from its support rating and defines the minimum long-term Issuer Default Rating that would be assigned to that bank. The likelihood of support being forthcoming is expressed in relative rank order on a rating scale of '1' ("extremely high probability") to '5' ("cannot be relied on"). Source: Fitch Ratings (2011a), p.2.

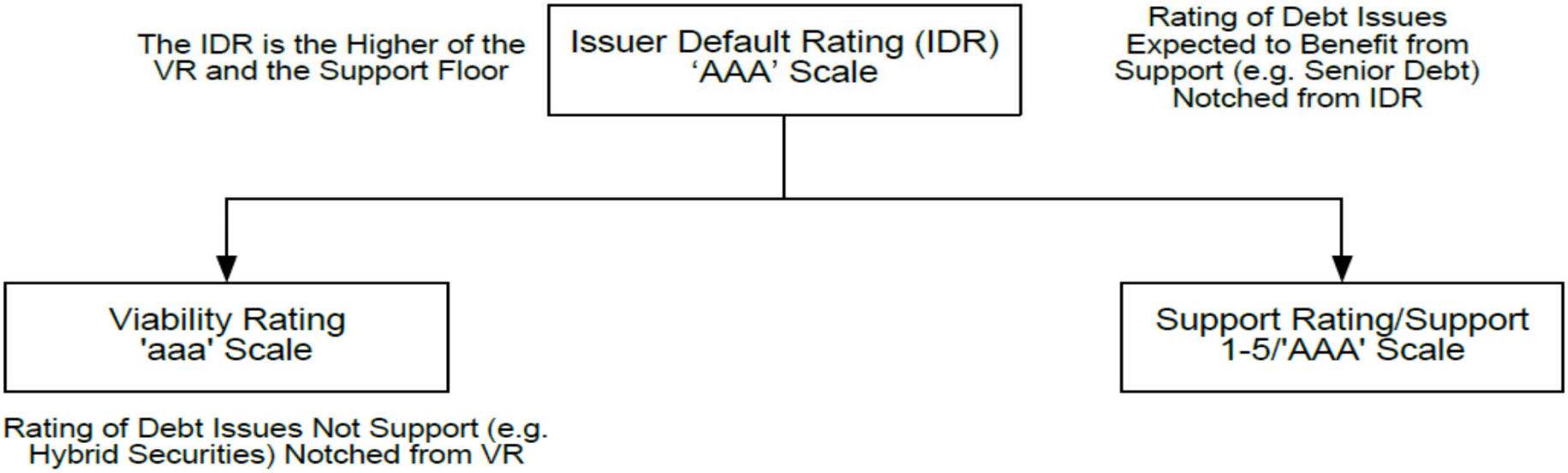
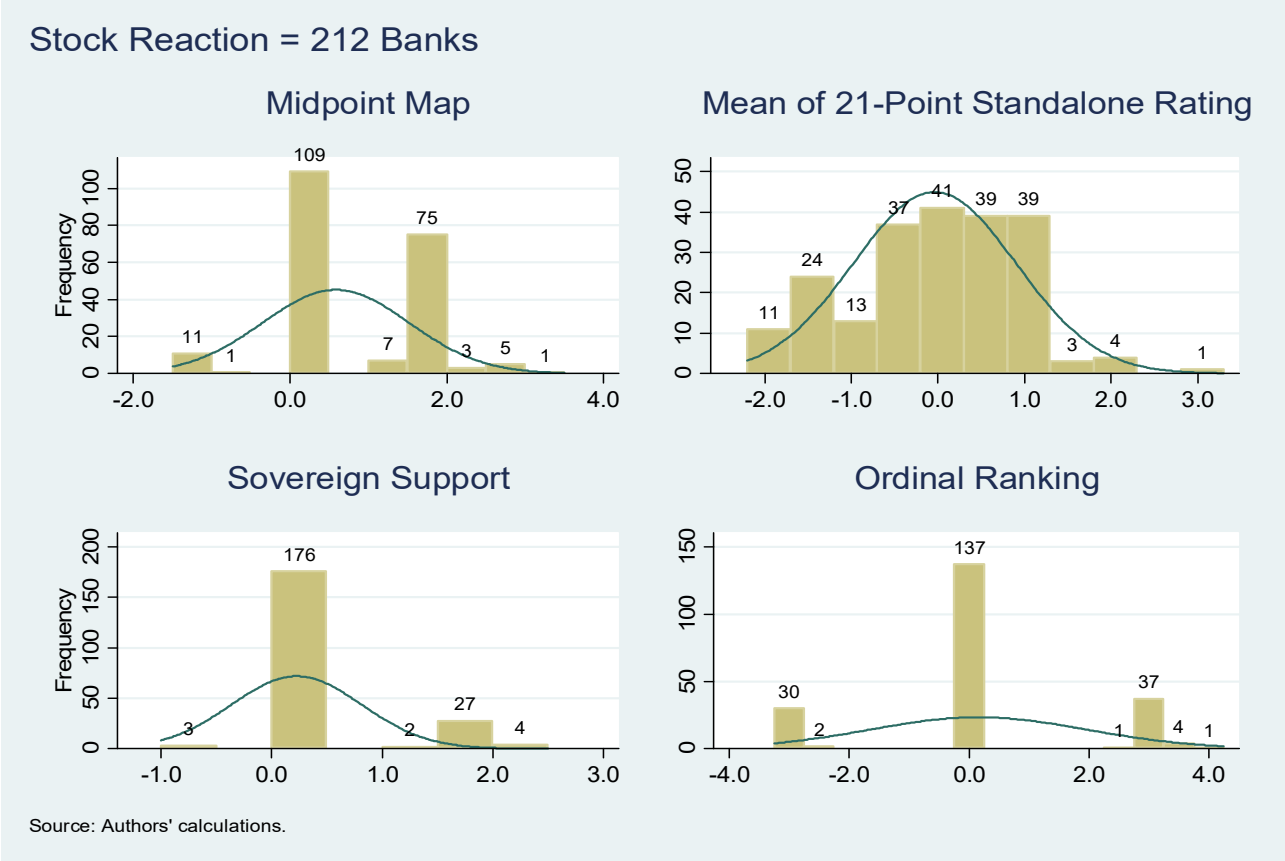


Figure III: Rating Surprises by Benchmark

This figure provides histograms of rating surprises under four different benchmarks for the sample of 212 banks. Rating notches are shown on the horizontal axis and the number of banks in each bin on the vertical axis. The measures of rating surprises are based on four benchmarks: (i) the Midpoint Map, based on the Fitch mapping of standalone ratings from the 9-point to the 21-point scale; (ii) the Sovereign Support, based on the relationship between the all-in rating, the 21-point standalone rating, and the Sovereign Support rating; (iii) the Mean of 21-Point Standalone Rating benchmark based on a comparison of actual 21-point standalone ratings assigned to banks within each coarse rating category; and (iv) the Ordinal Ranking based on a comparison of the rank ordering of banks under the 21-point standalone rating vs. the rank ordering under the 9-point standalone rating. The first three rating surprise measure are the actual 21-point standalone rating minus the benchmark (expected) rating; the fourth rating surprise measure shows the degree of ranking reversals.



Source: Authors' calculations.

Table I: Fitch Transition From 9- to 21-Point Standalone Ratings for 861 Banks

This table provides details on Fitch's transition from 9-point standalone ratings ("Individual Ratings") to 21-point standalone ratings ("Viability Ratings"). The underlying sample comprises all 861 banks in Fitch's entire rating universe. Column (1) reports Fitch's labels for the 9-point standalone rating. Column (2) provides the number of banks with a given 9-point standalone rating. For each 9-point standalone rating, the corresponding range on the 21-point scale is provided in letters in column (3) and numbers in column (4). Column (5) shows the (ex ante) midpoint mapping for each of the 9-point ratings. Column (6) shows the (ex post) mean of the corresponding values on the 21-point scale. The stars represent the statistical significance for a parametric test of the difference in means between Columns (5) and (6). ***,**, and * indicate statistical significance at the 1%, 5% and 10% levels, respectively. n.a. = not available. P-values are shown below between brackets.

(1)	(2)	(3)	(4)	(5)	(6)
9-point standalone rating	Number of banks rated by Fitch	Fitch map to 21-point standalone rating	Mapping range, with values	Midpoint of range	Ex-post mean of 21-point standalone rating
A	0	*aa to aaa*	18 – 20	19.0	n.a.
A/B	19	*a to aa+*	15 – 19	17.0	17.4 ** [.0305]
B	90	*a- to aa-*	14 – 17	15.5	16.0 *** [.0001]
B/C	169	*bbb to a*	12 – 15	13.5	13.9 *** [.0001]
C	190	*bb+ to bbb+*	10 – 13	11.5	12.1 *** [.0001]
C/D	140	*bb- to bbb-*	8 – 11	9.5	9.9 *** [.0001]
D	132	*b- to bb*	5 – 9	7.0	7.4 *** [.0001]
D/E	86	*ccc to b+*	3 – 7	5.0	5.5 *** [.0001]
E	35	*c to ccc*	0 – 3	1.5	2.5 *** [.0001]
E to A	861	*c to aaa*	0 – 20	10.4	10.8 *** [.0001]

Table II: Overview of Sample

This table provides details on the 212 banks from 40 countries in the stock market sample. North American banks represent 29% of the sample, Asian banks 25%, European banks 25%, and banks from the rest of the world 21%.

Country	North America	Asia	Europe	Rest of World	Total Number of Banks	Percent of Sample
AUSTRALIA		7			7	3.3
AUSTRIA			2		2	0.9
BELGIUM			2		2	0.9
BRAZIL				3	3	1.4
CANADA	6				6	2.8
CHILE				3	3	1.4
CYPRUS			1		1	0.5
DENMARK			1		1	0.5
FINLAND			1		1	0.5
FRANCE			3		3	1.4
GERMANY			5		5	2.4
HONG KONG		2			2	0.9
INDIA		7			7	3.3
INDONESIA		5			5	2.4
ISRAEL				2	2	0.9
ITALY			10		10	4.7
JAPAN		9			9	4.2
KOREA (SOUTH)		4			4	1.9
KUWAIT				5	5	2.4
MALAYSIA		3			3	1.4
MEXICO				1	1	0.5
NETHERLANDS			1		1	0.5
NORWAY			5		5	2.4
POLAND			1		1	0.5
PORTUGAL			3		3	1.4
QATAR				3	3	1.4
RUSSIA				4	4	1.9
SAUDI ARABIA				6	6	2.8
SINGAPORE		3			3	1.4
SOUTH AFRICA				4	4	1.9
SPAIN			6		6	2.8
SWEDEN			4		4	1.9
SWITZERLAND			3		3	1.4
TAIWAN		7			7	3.3
THAILAND		6			6	2.8
TURKEY				7	7	3.3
UAE				7	7	3.3
UK			5		5	2.4
USA	55				55	25.9
Total Number of Banks	61	53	53	45	212	100.0
Percent of Sample	28.8	25.0	25.0	21.2	100.0	

Table III: Descriptive Statistics

This table reports the names, definitions and descriptive statistics for the variables in our analysis. These statistics are based for the 212 banks. Fitch ratings are translated into a numerical value according to the table in Appendix I, where a higher value corresponds to higher rating category. The bank characteristics (except Fitch Securitization Share and the Local Analyst Dummy) are averages from 2008 to 2010 and are from Bankscope. Rating Surprise for Ordinal Ranking is calculated as stated below if bank A experiences a ranking reversal vis-a-vis some banks B; and zero otherwise.

Variable Names	Variable Definitions	Point or Units	Mean	Minimum	Median	Maximum
Fitch Ratings ("Fitch Names")						
9-Point Standalone Rating	"Individual Rating", E to A, mapped into the 21-Point by midpoint	Notches	12.3	1.5	13.5	17.0
21-Point Standalone Rating	"Viability Rating", c to aaa	Notches	13.0	3.0	13.0	18.0
All-in Rating	"Issuer Default Rating", C to AAA	Notches	13.8	3.0	14.0	18.0
Support Rating Floor	"Support Rating Floor", C to AAA	Notches	9.9	0.0	11.0	17.0
Sovereign Rating	Rating of the sovereign nation where the bank is located	Notches	17.3	10.0	19.0	20.0
Rating Surprises						
Rating Surprise for Midpoint Map	= 21-Point Standalone Rating – Midpoint Map	Notches	0.6	-1.5	0.0	3.5
Rating Surprise for Sovereign Support	= 21-Point Standalone Rating – Min{All-in Rating, 9-Point Standalone Rating Midpoint}	Notches	0.2	-1.0	0.0	2.5
Rating Surprise for Mean	= Actual 21-point standalone – Mean of 21-point standalone rating	Notches	0.0	-2.2	-0.2	2.8
Rating Surprise for Ordinal Ranking	= (21-Point Standalone for Bank A – mean 21-Point Standalone for Banks B) – (9-Point Standalone for Bank A – mean 9-Point Standalone for Banks B)	Notches	0.2	-3.3	0.0	3.8
Bank Characteristics						
Bank Size	Natural logarithm of total assets	US$ millions	11.3	6.8	11.1	14.8
Fitch Securitization Share	All securitization business originated by a given bank and rated by Fitch as a percentage of all securitization business by the bank over the period 2000 to 2010	Per cent	15.0%	0.0%	0.0%	100.0%
Common Equity / Total Assets	Common equity divided by total assets	Per cent	8.0%	1.6%	7.4%	20.2%
Return on Equity	Net income divided by average shareholders' equity	Per cent	7.5%	-39.6%	8.3%	26.9%
Liquidity Ratio	Cash and marketable securities divided by customer deposits plus short and long-term deb	Per cent	17.8%	0.0%	14.4%	73.5%
Short-term Funding	Interbank borrowing plus short-term debt divided by interbank borrowing plus short-term debt and long-term debt	Per cent	18.1%	0.1%	14.6%	61.4%
Local Analyst Dummy	A dummy set to 1 if the Fitch analyst covering the bank is located in the same city as the bank's headquarters (or within a two hour drive), or 0 otherwise	Dummy 0,1	0.43	0.00	0.00	1.00
Cumulative Abnormal Returns						
Market Model-adjusted						
[0,1]	Cumulative abnormal return from July 20 to July 21, 2011	Per cent	0.8%	-8.0%	0.6%	8.9%
[0,4]	Cumulative abnormal return from July 20 to July 25, 2011	Per cent	0.1%	-14.2%	0.0%	9.5%
[-2,2]	Cumulative abnormal return from July 18 to July 22, 2011	Per cent	0.2%	-11.7%	0.0%	12.0%
Mean-adjusted						
[0,1]	Cumulative abnormal return from July 20 to July 21, 2011	Per cent	3.1%	-6.4%	2.1%	15.8%
[0,4]	Cumulative abnormal return from July 20 to July 25, 2011	Per cent	2.1%	-13.2%	1.7%	12.6%
[-2,2]	Cumulative abnormal return from July 18 to July 22, 2011	Per cent	2.6%	-10.2%	2.1%	17.3%
Size-adjusted						
[0,1]	Cumulative abnormal return from July 20 to July 21, 2011	Per cent	0.0%	-7.8%	-0.7%	12.0%
[0,4]	Cumulative abnormal return from July 20 to July 25, 2011	Per cent	0.0%	-14.0%	0.0%	11.8%
[-2,2]	Cumulative abnormal return from July 18 to July 22, 2011	Per cent	0.0%	-10.7%	-0.1%	10.6%

Table IV: Fitch Transition From 9-Point to 21-Point Standalone Rating For Equity Sample

This table focuses on July 20, 2011, when Fitch announced the transition from 9-Point Standalone Ratings ("Individual Rating", on the horizontal axis) to 21-Point Standalone Ratings ("Viability Rating", on the vertical axis). The grey boxes show the mapping from the 9-Point to the 21-Point Standalone Rating that was communicated by Fitch prior to the announcement. The table is based on the 212 banks in the stock market sample.

		9-Point Standalone Rating									
		A	**A/B**	**B**	**B/C**	**C**	**C/D**	**D**	**D/E**	**E**	
	Equivalent Numeric Point	*19*	*17*	*15.5*	*13.5*	*11.5*	*9.5*	*7*	*5*	*1.5*	Number of Banks
21-Point Standalone Rating	**aaa** *20*										
	aa+ *19*										
	aa *18*		**5**	**1**							6
	aa- *17*		**2**	**21**	**1**						24
	a+ *16*			**7**	**3**						10
	a *15*			**7**	**18**						25
	a- *14*			**3**	**29**	**1**					33
	bbb+ *13*				**4**	**18**					22
	bbb *12*				**8**	**23**					31
	bbb- *11*					**13**	**16**				29
	bb+ *10*						**7**				7
	bb *9*						**10**	**2**			12
	bb- *8*							**2**			2
	b+ *7*							**7**	**1**		8
	b *6*							**1**			1
	b- *5*										
	ccc+ *4*										
	ccc *3*									**2**	2
	ccc- *2*										
	cc *1*										
	c *0*										
	Number of Banks		7	39	63	55	33	12	1	2	212

Legend

The mapping from the 9- to 21-Point Standalone Rating that was communicated by Fitch

XY The number of individual banks that transitioned

Table V: Distribution of Rating Surprises

This table reports the distribution of rating surprises for the 212 banks across three categories: Positive Suprise (higher than expected), No Surpise (as expected), and Negative Surprise (lower than expected). The first number in each cell reports the number of banks, while the second number (in parentheses) reports the percentage share in the sample. The rating surprises are calculated with respect to four benchmarks: Midpoint Map, Sovereign Support, Mean and Median of 21-Point Standalone, as specified in Table III.

Benchmark:	*Midpoint Map (ex ante)*	*Sovereign Support (ex ante)*	*Mean of 21-Point Standalone (ex post)*	*Ordinal Ranking (ex post)*
Stock Reaction: Number of Banks (Per cent)				
Positive Surprise	91 (43%)	35 (17%)	82 (39%)	43 (20%)
No Surprise	109 (51%)	174 (82%)	75 (35%)	137 (65%)
Negative Surprise	12 (6%)	3 (1%)	55 (26%)	32 (15%)
Total cases	212 (100%)	212 (100%)	212 (100%)	212 (100%)

Table VI: Factors Explaining Rating Surprises

This table reports regressions of rating surprises on bank characteristics. The dependent variable is a proxy of the rating surprise calculated with respect to four benchmarks: Midpoint Map, Sovereign Support, Mean of 21-Point Standalone Rating, and Ordinal Ranking. The former two are ex ante benchmarks and the latter two are ex post benchmarks, calculated as indicated in Table III. The bank characteristics are defined in Table III. The regressions are estimated by pooled OLS, with robust standard errors clustered at the country level. ***,**, and * signify statistical significance at the 1%, 5% and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent Variable: Rating Surprise for	Midpoint Map			Sovereign Support		
Bank Size	0.2846***		0.2451***	0.0834**		0.1024**
Fitch Securitization Share		0.4012	-0.3969*		0.0147	-0.1658
Sovereign Rating			0.0740*			0.0666**
Common Equity / Total Assets			-2.5632			-2.5189
Return on Equity			0.9075			0.2617
Liquidity Ratio			1.1321**			-0.3767
Short-term Funding			-0.4191			-0.0361
Local Analyst Dummy			-0.1948			-0.2006*
1=Asia			0.7334***			0.3873**
1= Italy, Portugal, Spain			0.7363**			-0.0316
1=Europe minus Italy, Portugal, Spain			0.3999**			0.0569
1=Rest of world			0.5888*			0.4920**
1=9-point standalone is low (C/D, D, D/E or E)	0.4830**	0.2557	0.5301***	0.4271**	0.3559*	0.5411***
1=9-point standalone is high (A/B, B)	-0.0651	0.2659*	-0.1954	-0.2875***	-0.1869***	-0.3743***
Constant	-2.7200***	0.4091*	-3.8222***	-0.7489*	0.1842***	-1.9640***
Number of Observations	212	212	212	212	212	212
R2 adjusted	0.217	0.021	0.279	0.133	0.087	0.224

	(1)	(2)	(3)	(4)	(5)	(5)
Dependent Variable: Rating Surprise for	Mean of 21-Point Standalone			Ordinal Ranking		
Bank Size	0.3123***		0.2715***	0.4080***		0.3550***
Fitch Securitization Share		0.5158*	-0.3350**		0.6720	-0.3579
Sovereign Rating			0.1044***			0.0733
Common Equity / Total Assets			-3.3524*			-1.3417
Return on Equity			1.8226**			0.6166
Liquidity Ratio			1.4397***			2.6038***
Short-term Funding			-0.6579			-1.3174
Local Analyst Dummy			-0.2777*			-0.1798
1=Asia			0.7368***			1.0332***
1= Italy, Portugal, Spain			0.6841**			1.4297***
1=Europe minus Italy, Portugal, Spain			0.4219**			0.5909*
1=Rest of world			0.6457**			1.2611**
1=9-point standalone is low (C/D, D, D/E or E)	0.2641	0.0180	0.4045**	-0.4021	-0.7237**	-0.4827
1=9-point standalone is high (A/B, B)	-0.2774*	0.0833	-0.5131***	-2.4638***	-1.9925***	-2.4720***
Constant	-3.5606***	-0.1374	-5.1725***	-3.8212**	0.6509	-5.2537***
Number of Observations	212	212	212	212	212	212
R2 adjusted	0.240	0.014	0.342	0.291	0.187	0.343

Table VII: Univariate Tests

This table reports the equal-weighted stock returns for portfolios of banks that received rating surprises, either positive or negative, or no surprise. The rating surprises are calculated with respect to four benchmarks: Midpoint Map, Sovereign Support, Mean of 21-Point Standalone Rating, and Ordinal Ranking. The former two are ex ante benchmarks and the latter two ex post benchmarks, calculated as indicated in Table III. Cumulative abnormal returns are summed from 2 days before to 2 days after the Fitch release on July 20, 2011. Abnormal returns are calculated using three approaches: Market model-adjusted, mean-adjusted and size-adjusted. Market model-adjusted returns are based on regressions of daily bank stock returns on a country-specific stock market index, returns from the MSCI World Bank index, and a constant, over an estimation window from 80 to 10 trading days prior to July 20, 2011. The mean-adjusted abnormal return is the actual stock return for a given bank minus the average daily stock return for the same bank over an estimation window from 80 to 10 trading days prior to July 20, 2011. The size-adjusted abnormal return is the actual stock return for a given bank minus the contemporaneous return of the equal-size decile portfolio of banks. ***,**, and * signify statistical significance at the 1%, 5% and 10% levels, respectively.

Rating Surprise for:	*Midpoint Map*		*Sovereign Support*		*Mean of 21-Point Standalone*		*Ordinal Ranking*	
	Obs	CAR[-2,2]	Obs	CAR[-2,2]	Obs	CAR[-2,2]	Obs	CAR[-2,2]
	Panel A: Full Sample							
Market Model-adjusted								
Positive Surprise	91	0.7%	33	0.2%	82	0.9%	43	0.9%
No Surprise	109	-0.1%	176	0.2%	75	0.1%	137	0.1%
Negative Surprise	12	-1.3%	3	-4.4%	55	-0.8%	32	-0.3%
Positive Minus Negative Surprises	103	2.0% **	36	4.6% **	137	1.7% ***	75	1.2% **
P-value, two-tailed test		0.018		0.034		0.001		0.040
Mean-adjusted								
Positive Surprise	91	3.9%	33	2.4%	82	4.1%	43	4.0%
No Surprise	109	1.7%	176	2.7%	75	2.2%	137	2.4%
Negative Surprise	12	0.7%	3	-3.5%	55	0.8%	32	1.7%
Positive Minus Negative Surprises	103	3.2% **	36	5.9% **	137	3.3% ***	75	2.3% **
P-value, two-tailed test		0.011		0.039		0.000		0.014
Size-adjusted								
Positive Surprise	91	0.5%	33	-0.3%	82	0.7%	43	0.9%
No Surprise	109	-0.4%	176	0.1%	75	-0.2%	137	-0.3%
Negative Surprise	12	0.3%	3	-4.1%	55	-0.7%	32	0.1%
Positive Minus Negative Surprises	103	0.2%	36	3.8% *	137	1.4% **	75	0.8%
P-value, two-tailed test		0.866		0.068		0.034		0.273
	Panel B: Excluding European Banks							
Market Model-adjusted								
Positive Surprise	60	0.3%	26	-0.5%	54	0.5%	31	0.7%
No Surprise	87	-0.6%	130	-0.2%	55	-0.6%	100	-0.5%
Negative Surprise	12	-1.3%	3	-4.4%	50	-0.8%	28	-0.8%
Positive Minus Negative Surprises	72	1.6% **	29	3.8% **	104	1.3% **	59	1.5% **
P-value, two-tailed test		0.025		0.011		0.014		0.019
Mean-adjusted								
Positive Surprise	60	2.2%	26	0.8%	54	2.3%	31	2.4%
No Surprise	87	0.3%	130	1.2%	55	0.7%	100	0.7%
Negative Surprise	12	0.7%	3	-3.5%	50	0.1%	28	0.9%
Positive Minus Negative Surprises	72	1.5%	29	4.3% **	104	2.2% ***	59	1.5% *
P-value, two-tailed test		0.134		0.012		0.002		0.073
Size-adjusted								
Positive Surprise	60	-0.6%	26	-1.2%	54	-0.5%	31	0.0%
No Surprise	87	-1.4%	130	-0.8%	55	-1.2%	100	-1.4%
Negative Surprise	12	0.3%	3	-4.1%	50	-1.2%	28	-0.5%
Positive Minus Negative Surprises	72	-0.9%	29	2.9% **	104	0.7%	59	0.5%
P-value, two-tailed test		0.347		0.034		0.269		0.519

Table VIII: Multivariate Regressions of Stock Reaction to Rating Surprises Using Dummy Variables

This table reports regressions of abnormal bank stock returns on rating surprises and bank characteristics. The dependent variable is the market model-adjusted abnormal return from two days before to two days after July 20, 2011 CAR[-2,2]. The rating surprises are calculated with respect to four benchmarks: Midpoint Map, Sovereign Support, Mean of 21-Point Standalone Rating, and Ordinal Ranking. The former two are ex ante benchmarks and the latter two are ex post benchmarks, calculated as indicated in Table III. There are two dummies for Positive Surprises and Negative Surprises. The reference case in each regression are banks with No Surprise. For each measure of ratings surprise there are two specifications: a first regression with only the rating surprise, and a second that includes bank characteristics, defined in Table III. The regressions are estimated by pooled OLS, with robust standard errors clustered by country. ***,**, and * signify statistical significance at the 1%, 5% and 10% levels, respectively.

Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
						Panel A: Full Sample						
Positive Rating Surprise for Midpoint Map	0.0087**	0.0060	0.0025									
Negative Rating Surprise for Midpoint Map	-0.0115***	-0.0065***	-0.0013									
Positive Rating Surprise for Sovereign Support				0.0001	-0.0011	-0.0047						
Negative rating Surprise for Sovereign Support				-0.0459***	-0.0469***	-0.0374***						
Positive Rating Surprise for Mean of 21-Point Standalone							0.0083*	0.0066	0.0058			
Negative Rating Surprise for Mean of 21-Point Standalone							-0.0085**	-0.0052	0.0021			
Positive Rating Surprise for Ordinal Ranking										0.0084**	0.0085**	0.0067
Negative Rating Surprise for Ordinal Ranking										-0.0037	0.0003	0.0003
Bank Size			0.0020			0.0021*			0.0020			0.0021*
Fitch Securitization Share			0.0066			0.0063			0.0072			0.0066
Sovereign Rating			0.0004			0.0004			0.0005			0.0005
Common Equity / Total Assets			-0.0878*			-0.0895**			-0.0892*			-0.0880*
Return on Equity			0.0270**			0.0282**			0.0265*			0.0295**
Liquidity Ratio			0.0133			0.0175			0.0123			0.0111
Short-term Funding			-0.0001			-0.0042			0.0001			0.0006
Local Analyst Dummy			-0.0149***			-0.0150***			-0.0150***			-0.0144***
1=Asia		0.0036	0.0120**		0.0093**	0.0146***		0.0036	0.0120**		0.0055	0.0116**
1=Italy, Portugal, Spain		0.0128***	0.0085		0.0160***	0.0088		0.0129***	0.0084		0.0142***	0.0077
1=Europe minus Italy, Portugal, Spain		0.0214***	0.0160*		0.0248***	0.0175**		0.0205***	0.0157*		0.0241***	0.0161*
1=Rest of world		0.0017	0.0093*		0.0037	0.0090*		0.0019	0.0098*		0.0020	0.0083*
1=9-point standalone is low (C/D, D, D/E or E)			-0.0022			0.0016			-0.0024			0.0008
1=9-point standalone is high (A/B, B)			-0.0029			-0.0031			-0.0031			-0.0006
Constant	-0.0014	-0.0064***	-0.0283	0.0023	-0.0060***	-0.0282	0.0006	-0.0053**	-0.0305	0.0005	-0.0071***	-0.0321
Number of Observations	212	212	212	212	212	212	212	212	212	212	212	212
R2 adjusted	0.027	0.074	0.103	0.026	0.096	0.124	0.044	0.085	0.109	0.009	0.074	0.108
Positive minus Negative Rating Surprise	2.0%	1.3%	0.4%	4.6%	4.6%	3.3%	1.7%	1.2%	0.4%	1.2%	0.8%	0.6%
P-value	0.0001	0.0001	0.3309	0.0001	0.0001	0.0016	0.0009	0.0195	0.5134	0.0323	0.1167	0.3154
Significance	***	***		***	***	***	***	**		**		
						Panel B: Excluding European Banks						
Positive Rating Surprise for Midpoint Map	0.0092***	0.0088**	0.0035									
Negative Rating Surprise for Midpoint Map	-0.0070***	-0.0056***	0.0025									
Positive Rating Surprise for Sovereign Support				-0.0039	-0.0062	-0.0082						
Negative rating Surprise for Sovereign Support				-0.0421***	-0.0481***	-0.0343***						
Positive Rating Surprise for Mean of 21-Point Standalone							0.0105**	0.0099**	0.0074*			
Negative Rating Surprise for Mean of 21-Point Standalone							-0.0025	-0.0023	0.0067			
Positive Rating Surprise for Ordinal Ranking										0.0116***	0.0114***	0.0091*
Negative Rating Surprise for Ordinal Ranking										-0.0029	-0.0017	-0.0011
Bank Size			0.0032*			0.0032**			0.0036**			0.0032*
Fitch Securitization Share			0.0216**			0.0212**			0.0208**			0.0201*
Sovereign Rating			0.0003			0.0003			0.0006			0.0003
Common Equity / Total Assets			-0.0304			-0.0473			-0.0427			-0.0295
Return on Equity			0.0242			0.0262*			0.0287			0.0287
Liquidity Ratio			-0.0036			-0.0001			-0.0028			-0.0091
Short-term Funding			0.0260*			0.0205			0.0280*			0.0295*
Local Analyst Dummy			-0.0091**			-0.0099**			-0.0097***			-0.0081**
1=Asia		0.0031	0.0099**		0.0102***	0.0130***		0.0033	0.0102**		0.0046	0.0080*
1=Rest of world		0.0016	0.0083**		0.0045	0.0087**		0.0020	0.0090**		0.0008	0.0053
1=9-point standalone is low (C/D, D, D/E or E)			-0.0013			0.0034			-0.0013			0.0022
1=9-point standalone is high (A/B, B)			-0.0020			-0.0026			-0.0038			0.0010
Constant	-0.0059**	-0.0073***	-0.0490*	-0.0015	-0.0057***	-0.0461**	-0.0057*	-0.0073***	-0.0598*	-0.0047*	-0.0066***	-0.0501
Number of Observations	159	159	159	159	159	159	159	159	159	159	159	159
R2 adjusted	0.025	0.015	0.083	0.035	0.047	0.115	0.032	0.022	0.096	0.022	0.015	0.095
Positive minus Negative Rating Surprise	1.6%	1.4%	0.1%	3.8%	4.2%	2.6%	1.3%	1.2%	0.1%	1.5%	1.3%	1.0%
P-value	0.0001	0.0001	0.7997	0.0001	0.0001	0.0011	0.012	0.0304	0.911	0.0004	0.0035	0.0699
Significance	***	***		***	***	***	**	**		***	***	*

Table IX: Multivariate Regressions of Stock Reaction to Rating Surprises Using Continuous Variables

This table reports regressions of abnormal bank stock returns on rating surprises and bank characteristics. The dependent variable is the market model-adjusted abnormal return from two days before to two days after July 20, 2011, CAR[-2,2]. The rating surprises are calculated with respect to three benchmarks: Midpoint Map, Sovereign Support, Mean of 21-Point Standalone Rating. The former two are ex ante benchmarks and the latter is an ex post benchmark, calculated as indicated in Table III. The regressions include a squared term for the ratings surprise to capture potential non-linearity. For each measure of ratings surprise there are two specifications: a first regression with only the ratings surprise, and a second that includes bank characteristics, defined in Table III. The regressions are estimated by pooled OLS, with robust standard errors clustered by country. ***,**, and * signify statistical significance at the 1%, 5% and 10% levels, respectively.

Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Panel A: Full Sample											
Rating Surprise for Midpoint Map	0.0071***	0.0051***	0.0024									
Rating Surprise for Midpoint Map^2	-0.0005	-0.0007	-0.0004									
Rating Surprise for Sovereign Support				0.0117	0.0137	0.0062						
Rating Surprise for Sovereign Support^2				-0.0052	-0.0071	-0.0034						
Rating Surprise for Mean of 21-Point Standalone							0.0073***	0.0049***	0.0021			
Rating Surprise for Mean of 21-Point Standalone^2							-0.0001	-0.0004	0.0001			
Rating Surprise for Ordinal Ranking										0.0020**	0.0014	0.0011
Rating Surprise for Ordinal Ranking^2										0.0002	0.0003	0.0002
Bank Size			0.0017			0.0021			0.0017			0.0020
Fitch Securitization Share			0.0066			0.0062			0.0066			0.0066
Sovereign Rating			0.0004			0.0004			0.0004			0.0005
Common Equity / Total Assets			-0.0871*			-0.0872*			-0.0846*			-0.0888**
Return on Equity			0.0277**			0.0282**			0.0248*			0.0289**
Liquidity Ratio			0.0123			0.0155			0.0117			0.0112
Short-term Funding			0.0008			-0.0003			0.0003			0.0004
Local Analyst Dummy			-0.0147***			-0.0147***			-0.0146***			-0.0147***
1=Asia		0.0031	0.0114**		0.0071*	0.0126**		0.0032	0.0115**		0.0054	0.0118**
1=Italy, Portugal, Spain		0.0123***	0.0080		0.0161***	0.0094		0.0120***	0.0082		0.0140***	0.0077
1=Europe minus Italy, Portugal, Spain		0.0207***	0.0155*		0.0248***	0.0167**		0.0197***	0.0156*		0.0237***	0.0159*
1=Rest of world		0.0012	0.0086*		0.0029	0.0089*		0.0010	0.0088*		0.0019	0.0085*
1=9-point standalone is low (C/D, D, D/E or E)			-0.0024			-0.0016			-0.0022			0.0003
1=9-point standalone is high (A/B, B)			-0.0027			-0.0025			-0.0019			-0.0004
Constant	-0.0018	-0.0060***	-0.0256	0.0011	-0.0065***	-0.0293	0.0020	-0.0030	-0.0229	0.0007	-0.0065***	-0.0304
Number of Observations	212	212	212	212	212	212	212	212	212	212	212	212
R2 adjusted	0.0343	0.0778	0.1041	0.0006	0.0721	0.1032	0.0474	0.0848	0.1043	0.0077	0.0712	0.1063
	Panel B: Excluding European Banks											
Rating Surprise for Midpoint Map	0.0059***	0.0053***	0.0015									
Rating Surprise for Midpoint Map^2	0.0002	0.0004	0.0001									
Rating Surprise for Sovereign Support				0.0196***	0.0222***	0.0135**						
Rating Surprise for Sovereign Support^2				-0.0135***	-0.0161***	-0.0112**						
Rating Surprise for Mean of 21-Point Standalone							0.0068***	0.0064***	0.0011			
Rating Surprise for Mean of 21-Point Standalone2							0.0012	0.0013	0.0007			
Rating Surprise for Ordinal Ranking										0.0025***	0.0022***	0.0019*
Rating Surprise for Ordinal Ranking^2										0.0004	0.0004	0.0003
Bank Size			0.0030*			0.0031**			0.0033*			0.0031
Fitch Securitization Share			0.0208**			0.0213**			0.0206**			0.0204*
Sovereign Rating			0.0004			0.0002			0.0004			0.0003
Common Equity / Total Assets			-0.0337			-0.0486			-0.0360			-0.0303
Return on Equity			0.0263			0.0247			0.0246			0.0283
Liquidity Ratio			-0.0047			-0.0017			-0.0036			-0.0094
Short-term Funding			0.0272*			0.0245*			0.0260*			0.0297*
Local Analyst Dummy			-0.0090**			-0.0097**			-0.0093***			-0.0083**
1=Asia		0.0027	0.0094**		0.0096**	0.0122***		0.0033	0.0103**		0.0044	0.0081*
1=Rest of world		0.0014	0.0075**		0.0043	0.0085**		0.0018	0.0086**		0.0006	0.0054
1=9-point standalone is low (C/D, D, D/E or E)			-0.0012			0.0020			-0.0008			0.0018
1=9-point standalone is high (A/B, B)			-0.0019			-0.002			-0.0019			0.0016
Constant	-0.0059***	-0.0071***	-0.0468	-0.0021	-0.0061***	-0.0440*	-0.0028	-0.0046*	-0.0502	-0.0044*	-0.0062***	-0.0477
Number of Observations	159	159	159	159	159	159	159	159	159	159	159	159
R2 adjusted	0.0307	0.0197	0.0817	0.0201	0.0293	0.1005	0.0318	0.0219	0.0804	0.0202	0.0127	0.0942

Appendix

Appendix A: Abnormal CDS Spread Changes?

We start from the observation that, in line with Fitch's own statement, the standalone rating transition was not associated with any all-in rating changes during the episode we focus on. Since it is the latter ratings that should matter to bank creditors, our hypothesis is:

H3: *The CDS spreads of banks experiencing positive rating surprises will outperform the CDS spreads of banks experiencing negative rating surprises.*

We study the CDS reaction to the announcement of 21-point standalone ratings using abnormal CDS spread changes. Given the similarity in methodology, Tables A.I to A.IX in this Appendix match Tables I to IX in the paper in line-up.

We study the CDS reaction to the announcement of 21-point standalone ratings using abnormal CDS spread changes. Similar to the stock price reaction, we calculate abnormal CDS spread changes using market model-adjusted, mean-adjusted, and size-adjusted CDS changes. When measuring the market model-adjusted CDS changes, we regress a bank's daily CDS spread change on the daily change in a national (or global) CDS market index, the daily change in each country's 10-year government bond yield, the daily change in realized stock market volatility for each country (or the VIX if not available), and the daily change in 3-month LIBOR-OIS spreads for different regions. The mean-adjusted and size-adjusted abnormal CDS changes are calculated using the same methodology as abnormal stock returns but using CDS spreads instead. We calculate cumulative abnormal CDS changes (CACCs) by bank for the same three windows around the event, [0,1], [0,4], and [-2,2].

For our tests of the CDS spread reaction, we collect daily data on individual bank CDS contracts from Markit.[1] We use the spread on the 5-year contract referencing the senior unsecured debt denominated in the reference entity's home currency where available, or the more liquid of the U.S. dollar or Euro contract if the home currency is not available (see also Table A.I). We restrict the sample to banks with a liquid CDS contract. A CDS contract is considered liquid if over the two year window from 2010 to 2011 the CDS contract had fewer than 130 missing observations (or 25% of the days), and no more than 130 days with no change in the spread from the previous trading day. These restrictions lead to a sample of 74 banks with a liquid CDS contract out of the sample of 212 banks used for the stock reaction. This smaller sample size reduces the statistical power of our tests. The distribution is 12% from North America, 30% from Asia, 47% from Europe, and 11% from the rest of the world (see also Table A.II). Descriptive statistics for the 74 banks are in Table A.III, while the Fitch transition from the 9-point to the 21-point standalone rating is in Table A.IV.

[Insert Tables A.I to A.IV here]

[1] We attempted to collect data on bank bond prices for our sample of banks. While we identified fixed-coupon bullet bonds for around half the banks in our sample using Bloomberg, these bonds issues varied by currency, amount outstanding, maturity, and rank. Given that our sample covers many countries, we were unable to find either traded prices or liquid quotes for these bond issues, nor could we establish liquid benchmarks against which to measure abnormal yield spreads.

The distribution of rating surprises based on the Midpoint Map and the Sovereign Support benchmarks is similar to that of the stock-market sample, except there are no cases of negative surprises (see Table A.V). Using the Mean of the 21-Point Standalone benchmark, there are 14% positive surprises vs. 46% negative surprises. For the Ordinal Ranking benchmark, there are 23% positive surprises and 70% negative surprises. Table A.VI then runs the same regressions as in Table VI for the 74 banks in the CDS sample. For the mean and ordinal ranking benchmarks the direction of the effects is as presented here in 3 out of 4 regressions, but we may lack the statistical power to draw any further inferences. This is even more likely to be the case when we exclude the European banks and the sample is reduced to only 39 observations.

[Insert Tables A.V and A.VI here]

We also test how bank creditors reacted to the release of more granular 21-point standalone ratings by examining the CDS spreads for 74 banks. Tables A.VII, A.VIII and A.IX repeat the earlier tests using cumulative abnormal changes in CDS spreads. The message is quite simple: there is no statistically significant difference between banks receiving positive surprises and banks receiving negative surprises.

Table A.VII provides the univariate tests across the portfolios of banks using the four benchmarks for rating surprises and the three measures of abnormal CDS changes. We show the results for the five-day event window [-2,2], but the results are robust to other windows. If the Fitch private information has value for bank creditors, a positive rating surprise should be associated with a decline in the probability of default, leading to a decline in the CDS spread (i.e., a negative value). Unlike the stock reaction, where we see a clear pattern of banks with positive surprises outperforming banks with negative surprises, the CDS reaction shows no such pattern. Instead, we find that the abnormal CDS change is not statistically different between positive and negative surprises (or positive vs. no surprises) for 23 out of the 24 cases considered.

[Insert Table A.VII here]

The story is the same using the multivariate tests. Table A.VIII reports cross-sectional regressions using the dummy variables for positive and negative rating surprises, while Table A.IX reports results using the continuous measures of rating surprises and the squared term for detecting non-linearity. In almost all cases, the coefficients on the variables measuring ratings surprises are not statistically different from zero. And in many cases, the specifications themselves do not explain any variation in abnormal CDS spreads over this event window, as seen by the negative adjusted-R2. Statistical significance is even lower when excluding European banks, as the sample declines from 74 to only 39 banks. Thus, on the basis of the available data, we reject the third hypothesis (H3): there is no evidence that bank creditors react in a systematic fashion to publication of more granular 21-point standalone ratings.

[Insert Table A.VIII and A.IX here]

Table A.I: Fitch Transition From 9- to 21-Point Standalone Ratings for 74 Banks in the CDS Sample

This table provides details on the 74 Banks with a CDS Contract that made Fitch's transition from 9-point standalone ratings ("Individual Ratings") to 21-point standalone ratings ("Viability Ratings"). Column (1) shows the (ex ante) midpoint mapping for each of the 9-point ratings. Column (2) shows the number of banks with liquid CDS. Column (3) to (6) display the mean, median, minimum and maximum CDS spread (in basis points), as of July 20, 2011.

(1)	(2)	(3)	(4)	(5)	(6)
Midpoint of Fitch map	Banks with liquid CDS	Mean CDS spread (bps)	Median CDS spread (bps)	Minimum CDS spread (bps)	Maximum CDS spread (bps)
19.0	0	n.a.	n.a.	n.a.	n.a.
17.0	6	100	92	47	200
15.5	19	91	85	42	200
13.5	24	135	114	70	329
11.5	19	164	160	108	230
9.5	4	432	461	165	642
7.0	1	158	158	n.a.	n.a.
5.0	0	n.a.	n.a.	n.a.	n.a.
1.5	1	480	480	n.a.	n.a.
10.4	74	149	120	42	642

Table A.II: Overview of the CDS Sample

This table provides details on the 74 banks in the final sample with a liquid credit default swap (CDS) contract. North American banks represent 12% of the sample, Asian banks 30%, European banks 47%, and banks from the rest of the world 11%.

Country	North America	Asia	Europe	Rest of World	Total Number of Banks	Percent of Sample
AUSTRALIA		5			5	6.8
AUSTRIA			2		2	2.7
BELGIUM			1		1	1.4
BRAZIL				2	2	2.7
CANADA	1				1	1.4
DENMARK			1		1	1.4
FRANCE			3		3	4.1
GERMANY			2		2	2.7
INDIA		3			3	4.1
ITALY			6		6	8.1
JAPAN		3			3	4.1
KOREA (SOUTH)		4			4	5.4
MALAYSIA		2			2	2.7
NETHERLANDS			1		1	1.4
NORWAY			1		1	1.4
PORTUGAL			2		2	2.7
QATAR				1	1	1.4
RUSSIA				1	1	1.4
SINGAPORE		3			3	4.1
SPAIN			5		5	6.8
SWEDEN			4		4	5.4
SWITZERLAND			2		2	2.7
THAILAND		2			2	2.7
TURKEY				3	3	4.1
UAE				1	1	1.4
UNITED KINGDOM			5		5	6.8
UNITED STATES	8				8	10.8
Total	9	22	35	8	74	100.0
Percent of Sample	12.2	29.7	47.3	10.8	100.0	

Table A.III: Descriptive Statistics for the CDS Sample

This table reports the variable names, definitions and the descriptive statistics for the variables used in our analysis involving 74 banks with a liquid credit default swap (CDS) contract. Fitch ratings are translated into a numerical value according to the table in Appendix I, where the highest value corresponds to the highest rating category. The bank characteristics (except Securitization) are averages from 2008 to 2010 and are from Bankscope.

Variable Names	Variable Definitions	Point or Units	Mean	Minimum	Median	Maximum
Fitch Ratings ("Fitch Names")						
9-Point Standalone Rating	"Individual Rating", E to A, mapped into the 21-Point by midpoint	0-20	13.3	1.5	13.5	17.0
21-Point Standalone Rating	"Viability Rating", c to aaa	0-20	14.3	3.0	14.0	18.0
All-in Rating	"Issuer Default Rating", C to AAA	0-20	15.0	10.0	15.0	18.0
Support Rating Floor	"Support Rating Floor", C to AAA	0-20	13.1	0.0	14.0	17.0
Sovereign Rating	Rating of the sovereign nation where the bank is located	0-20	17.5	10.0	19.0	20.0
Ratings Surprises						
Rating Surprise for Midpoint Map	= 21-Point Standalone Rating – Midpoint Map	Notches	0.9	0.0	1.0	3.5
Rating Surprise for Sovereign Support	= 21-Point Standalone Rating – Min{All-in Rating, 9-Point Standalone Rating Midpoint}	Notches	0.2	0.0	0.0	2.5
Rating Surprise for Mean	= Actual 21-point standalone – Mean of 21-point standalone rating	Notches	0.3	-1.2	0.3	2.8
Rating Surprise for Ordinal Ranking	= (21-Point Standalone for Bank A – mean 21-Point Standalone for Banks B) – (9-Point Standalone for Bank A – mean 9-Point Standalone for Banks B)					
Bank Characteristics						
Bank Size	Natural logarithm of total assets	US$ millions	12.7	9.8	12.7	14.8
Fitch Securitization Share	Natural logarithm of all securitization business originated by a given bank and rated by Fitch over the period 2000 to 2010, where banks with no business receive a zero value	US$ millions	5.0	0.0	5.4	12.4
Common Equity / Total Assets	Common equity divided by total assets	Per cent	6.8%	2.0%	6.4%	18.8%
Return on Equity	Net income divided by average shareholders' equity	Per cent	8.1%	-14.9%	9.3%	23.8%
Liquidity Ratio	Cash and marketable securities divided by customer deposits plus short and long-term debt	Per cent	24.2%	4.4%	19.6%	73.5%
Short-term Funding	Interbank borrowing plus short-term debt divided by interbank borrowing plus short-term debt and long-term debt	Per cent	26.7%	2.9%	26.0%	61.4%
Local Analyst Dummy	A dummy set to 1 if the Fitch analyst covering the bank is located in the same city as the bank's headquarters (or within a two hour drive), or 0 otherwise.	Dummy 0,1				
Cumulative Abnormal Returns						
Market Model-adjusted						
[0,1]	Cumulative abnormal return from July 20 to July 21, 2011	Per cent	1.7%	-3.6%	1.3%	8.1%
[0,4]	Cumulative abnormal return from July 20 to July 25, 2011	Per cent	0.8%	-11.9%	0.2%	7.4%
[-2,2]	Cumulative abnormal return from July 18 to July 22, 2011	Per cent	1.1%	-5.0%	0.6%	6.6%
Mean-adjusted						
[0,1]	Cumulative abnormal return from July 20 to July 21, 2011	Per cent	5.5%	-2.8%	4.4%	14.6%
[0,4]	Cumulative abnormal return from July 20 to July 25, 2011	Per cent	4.2%	-10.6%	4.2%	12.6%
[-2,2]	Cumulative abnormal return from July 18 to July 22, 2011	Per cent	4.8%	-6.5%	5.0%	13.1%
Size-adjusted						
[0,1]	Cumulative abnormal return from July 20 to July 21, 2011	Per cent	0.5%	-5.9%	-0.8%	10.6%
[0,4]	Cumulative abnormal return from July 20 to July 25, 2011	Per cent	0.3%	-14.0%	0.3%	7.1%
[-2,2]	Cumulative abnormal return from July 18 to July 22, 2011	Per cent	0.5%	-9.0%	0.3%	8.8%
Cumulative Abnormal CDS changes						
Market Model-adjusted						
[0,1]	Cumulative abnormal CDS change from July 20 to July 21, 2011	Per cent	-1.5%	-11.3%	-1.1%	8.7%
[0,4]	Cumulative abnormal CDS change from July 20 to July 25, 2011	Per cent	-3.9%	-20.6%	-3.2%	9.1%
[-2,2]	Cumulative abnormal CDS change from July 18 to July 22, 2011	Per cent	-2.8%	-17.3%	-2.1%	6.9%
Mean-adjusted						
[0,1]	Cumulative abnormal CDS change from July 20 to July 21, 2011	Per cent	-7.0%	-20.1%	-6.6%	2.7%
[0,4]	Cumulative abnormal CDS change from July 20 to July 25, 2011	Per cent	-9.0%	-29.0%	-8.6%	9.7%
[-2,2]	Cumulative abnormal CDS change from July 18 to July 22, 2011	Per cent	-8.2%	-26.8%	-7.8%	2.3%
Size-adjusted						
[0,1]	Cumulative abnormal CDS change from July 20 to July 21, 2011	Per cent	0.0%	-9.9%	0.6%	9.6%
[0,4]	Cumulative abnormal CDS change from July 20 to July 25, 2011	Per cent	0.0%	-14.3%	0.4%	13.5%
[-2,2]	Cumulative abnormal CDS change from July 18 to July 22, 2011	Per cent	0.0%	-11.7%	0.6%	9.5%

Table A.IV: Fitch Transition From 9-Point To 21-Point Standalone Rating for the CDS Sample

This table shows the 9-Point Standalone Rating ("Individual Rating") on the horizontal axis and and expected 21-Point Standalone Rating ("Expected Viability Rating") on the vertical axis. The gray boxes show the mapping from the 9- to 21-Point Standalone Rating based on the methodology published on March 7, 2011, for the 74 banks with a liquid CDS contract.

Expected 21-Point Standalone Rating		9-Point Standalone Rating									
		A	**A/B**	**B**	**B/C**	**C**	**C/D**	**D**	**D/E**	**E**	
	Equivalent Numeric Point	*19*	*17*	*15.5*	*13.5*	*11.5*	*9.5*	*7*	*5*	*1.5*	Number of Banks
	aaa	*20*									
	aa+	*19*									
	aa	*18*	**5**	**1**							6
	aa-	*17*	**1**	**15**	**1**						17
	a+	*16*		**2**	**3**						5
	a	*15*		**1**	**7**						8
	a-	*14*			**12**						12
	bbb+	*13*			**1**	**5**					6
	bbb	*12*				**8**					8
	bbb-	*11*				**6**	**1**				7
	bb+	*10*					**2**				2
	bb	*9*					**1**	**1**			2
	bb-	*8*									
	b+	*7*									
	b	*6*									
	b-	*5*									
	ccc+	*4*									
	ccc	*3*								**1**	1
	ccc-	*2*									
	cc	*1*									
	c	*0*									
	Number of Banks		6	19	24	19	4	1		1	74 Total

Legend

	The mapping from the 9- to 21-Point Standalone Rating that was communicated by Fitch
XY	The number of individual banks that transitioned

Table A.V: Distribution of Rating Surprises for the CDS Sample

This table reports the distribution of rating surprises for the 74 banks in the CDS sample across three categories: Positive Suprise (higher than expected), No Surpise (as expected), and Negative Surprise (lower than expected). The first number in each cell reports the number of banks, while the second number (in parentheses) reports the percentage share in the sample. The rating surprises are calculated with respect to four benchmarks: Midpoint Map, Sovereign Support, Mean and Median of 21-Point Standalone, as specified in Table III.

Benchmark:	*Midpoint Map (ex ante)*	*Sovereign Support (ex ante)*	*Mean of 21-Point Standalone (ex post)*	*Ordinal Ranking (ex post)*
Credit Default Swap Reaction: Number of Banks (Per cent)				
Positive Surprise	40 (54%)	9 (12%)	10 (14%)	17 (23%)
No Surprise	34 (46%)	65 (88%)	30 (41%)	5 (7%)
Negative Surprise	0 (0%)	0 (0%)	34 (46%)	52 (70%)
Total cases	74 (100%)	74 (100%)	74 (100%)	74 (100%)

Table A.VI: Factors Explaining Rating Surprises for the CDS Sample

This table reports regressions of rating surprises on bank characteristics. The dependent variable is a proxy of the rating surprise. Rating surprises are calculated with respect to four benchmarks: Midpoint Map, Sovereign Support, Mean and Median of 21-Point Standalone Ratings. The former two are ex ante benchmarks and the latter two are ex post benchmarks, calculated as indicated in Table III. The bank characteristics are also defined in Table III. The regressions are estimated by pooled OLS, with robust standard errors clustered at the country level. ***,**, and * signify statistical significance at the 1%, 5% and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent Variable: Rating Surprise for	Midpoint Map			Sovereign Support		
Bank Size	0.2232**		0.4546***	0.0703		0.1116
Fitch Securitization Share		-0.1168	-0.7035		-0.0638	-0.1401
Sovereign Rating			0.0915**			0.0493
Common Equity / Total Assets			6.5458			-1.8435
Return on Equity			5.5118***			1.7377
Liquidity Ratio			0.8333			-0.5487
Short-term Funding			-0.0957			0.0547
Local Analyst Dummy			0.2947			0.1033
1=Asia			0.6944*			0.2794
1= Italy, Portugal, Spain			0.6608*			-0.0562
1=Europe minus Italy, Portugal, Spain			0.5755*			0.1450
1=Rest of world			-0.8358*			-0.0130
1=9-point standalone is low (C/D, D, D/E or E)	0.4226	0.1642	1.0538**	0.7535*	0.6735	0.9121**
1=9-point standalone is high (A/B, B)	0.3345	0.5258***	-0.4470	-0.2229*	-0.1627*	-0.5189*
Constant	-2.1247	0.7078***	-7.8862***	-0.7183	0.1810*	-2.0502
Number of Observations	74	74	74	74	74	74
R2 adjusted	0.122	0.041	0.277	0.160	0.138	0.200

	(1)	(2)	(3)	(4)	(5)	(5)
Dependent Variable: Rating Surprise for	Mean of 21-Point Standalone			Ordinal Ranking		
Bank Size	0.2656**		0.4747**	0.3261*		0.7064**
Fitch Securitization Share		0.0844	-0.6440*		-0.0338	-0.8959
Sovereign Rating			0.1360***			0.1469*
Common Equity / Total Assets			6.3622			8.0275
Return on Equity			4.7954**			7.1874**
Liquidity Ratio			1.0607*			1.2954
Short-term Funding			-0.5825			-1.0098
Local Analyst Dummy			0.1051			0.6326
1=Asia			0.8325**			1.0987
1= Italy, Portugal, Spain			0.7497**			1.3655**
1=Europe minus Italy, Portugal, Spain			0.6059*			0.7146
1=Rest of world			-0.4370			-0.8167
1=9-point standalone is low (C/D, D, D/E or E)	0.3025	-0.0151	0.9373*	-0.7001*	-1.0837***	0.1646
1=9-point standalone is high (A/B, B)	0.1310	0.3582**	-0.6636**	-1.7343***	-1.4552***	-2.7874***
Constant	-3.1814**	0.1256	-9.3124***	-3.0038	1.0949***	-12.0780***
Number of Observations	74	74	74	74	74	74
R2 adjusted	0.131	0.002	0.279	0.208	0.154	0.275

Table A.VII: Univariate Tests for the CDS Sample

This table reports the equally-weighted abnormal CDS changes for portfolios of banks that received rating surprises, either positive or negative, or no surprise. The rating surprises are calculated with respect to four benchmarks: Midpoint Map, Sovereign Support, Mean and Median of 21-Point Standalone Ratings. The former two are ex ante benchmarks and the latter two ex post benchmarks, calculated as indicated in Table III. Cumulative abnormal CDS changes (CACC) are summed from 2 days before to 2 days after the Fitch release on July 20, 2011. Abnormal CDS changes are calculated using three approaches: market model-adjusted, mean-adjusted and size-adjusted. Market model-adjusted CDS changes are based on regressions of daily bank CDS changes on changes in a country-specific CDS index, changes in 10-year government bond yields, changes in country-specific equity volatility, changes in Libor-OIS spreads, and a constant, over an estimation window from 80 to 10 trading days prior to July 20, 2011. The mean-adjusted abnormal CDS change is the actual CDS change for a given bank minus the average daily CDS change for the same bank over an estimation window from 80 to 10 trading days prior to July 20, 2011. The size-adjusted abnormal CDS change is the actual CDS change for a given bank minus the contemporaneous CDS change of the equal-size decile portfolio of banks. ***,**, and * signify statistical significance at the 1%, 5% and 10% levels, respectively.

Rating Surprise for:	*Midpoint Map*		*Sovereign Support*		*Mean of 21-Point Standalone*		*Ordinal Ranking*	
	Obs	CACC[-2,2]	Obs	CACC[-2,2]	Obs	CACC[-2,2]	Obs	CACC[-2,2]
	Panel A: Full Sample							
Market Model-adjusted								
Positive Surprise	40	-3.1%	9	-1.0%	34	-2.7%	17	-1.9%
No Surprise	34	-2.5%	65	-3.1%	30	-2.9%	52	-3.0%
Negative Surprise	0	---	0	---	10	-3.0%	5	-3.8%
Positive Minus Negative Surprises		n.a.		n.a.	44	0.3%	22	1.9%
P-value, two-tailed test		n.a.		n.a.		0.861		0.384
Mean-adjusted								
Positive Surprise	40	-8.9%	9	-5.6%	34	-8.7%	17	-7.7%
No Surprise	34	-7.5%	65	-8.6%	30	-8.3%	52	-8.8%
Negative Surprise	0	---	0	---	10	-6.2%	5	-4.6%
Positive Minus Negative Surprises		n.a.		n.a.	44	-2.5%	22	-3.1%
P-value, two-tailed test		n.a.		n.a.		0.315		0.338
Size-adjusted								
Positive Surprise	40	0.6%	9	1.3%	34	0.8%	17	0.9%
No Surprise	34	-0.7%	65	-0.2%	30	-0.6%	52	-0.3%
Negative Surprise	0	---	0	---	10	-0.7%	5	0.2%
Positive Minus Negative Surprises		n.a.		n.a.	44	1.5%	22	0.7%
P-value, two-tailed test		n.a.		n.a.		0.419		0.768
	Panel B: Excluding European Banks							
Market Model-adjusted								
Positive Surprise	19	-2.9%	5	-3.3%	16	-2.5%	9	-2.3%
No Surprise	20	-3.1%	34	-3.0%	15	-3.9%	27	-3.5%
Negative Surprise	0	---	0	---	8	-2.6%	3	-1.4%
Positive Minus Negative Surprises		n.a.		n.a.	24	0.1%	12	-0.9%
P-value, two-tailed test		n.a.		n.a.		0.966		0.570
Mean-adjusted								
Positive Surprise	19	-4.7%	5	-4.8%	16	-4.3%	9	-4.2%
No Surprise	20	-5.0%	34	-4.9%	15	-6.2%	27	-5.4%
Negative Surprise	0	---	0	---	8	-3.4%	3	-1.6%
Positive Minus Negative Surprises		n.a.		n.a.	24	-0.9%	12	-2.6%
P-value, two-tailed test		n.a.		n.a.		0.607		0.246
Size-adjusted								
Positive Surprise	19	3.2%	5	0.6%	16	3.3%	9	2.9%
No Surprise	20	0.5%	34	2.0%	15	0.9%	27	1.4%
Negative Surprise	0	---	0	---	8	0.7%	3	2.2%
Positive Minus Negative Surprises		n.a.		n.a.	24	2.6% **	12	0.7%
P-value, two-tailed test		n.a.		n.a.		0.048		0.708

Table A.VIII: Multivariate Regressions of CDS Reactions to Rating Surprises Using Dummy Variables

This table reports regressions of abnormal bank stock returns on rating surprises and bank characteristics. The dependent variable is the market model-adjusted abnormal return from two days before to two days after July 20, 2011 CACC[-2,2]. The rating surprises are calculated with respect to four benchmarks: Midpoint Map, Sovereign Support, Mean and Median of 21-Point Standalone Rating. The former two are ex ante benchmarks and the latter two are ex post benchmarks, calculated as indicated in Table III. There are two dummies for Positive Surprises and Negative Surprises. The reference case in each regression are banks with No Surprise. For each measure of ratings surprise there are two specifications: a first regression with only the rating surprise, and a second that includes bank characteristics, defined in Table III. The regressions are estimated by pooled OLS, with robust standard errors clustered by country. ***,**, and * signify statistical significance at the 1%, 5% and 10% levels, respectively.

Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Panel A: Full Sample							
Positive Rating Surprise for Midpoint Map	-0.0062	0.0014						
Negative Rating Surprise for Midpoint Map	n.a.	n.a.						
Positive Rating Surprise for Sovereign Support			0.0395***	0.0372*				
Negative rating Surprise for Sovereign Support			n.a.	n.a.				
Positive Rating Surprise for Mean of 21-Point Standalone					0.0026	0.0116		
Negative Rating Surprise for Mean of 21-Point Standalone					-0.0004	0.0147		
Positive Rating Surprise for Ordinal Ranking							0.0109	-0.0123
Negative Rating Surprise for Ordinal Ranking							-0.0074	0.0046
Bank Size		-0.0182		-0.0199		-0.0174		-0.0161
Fitch Securitization Share		0.0079		0.0090		0.0102		0.0042
Sovereign Rating		0.0068**		0.0057*		0.0077***		0.0074**
Common Equity / Total Assets		-0.4521		-0.3788		-0.4790		-0.4288
Return on Equity		-0.0538		-0.0817		-0.0522		-0.0265
Liquidity Ratio		-0.0545		-0.0417		-0.0540		-0.0488
Short-term Funding		-0.0197		-0.0156		-0.0266		-0.0228
Local Analyst Dummy		0.0332**		0.0319**		0.0302**		0.0353**
1=Asia		-0.0394		-0.0456*		-0.0354		-0.0355
1=Italy, Portugal, Spain		-0.0139		-0.0116		-0.0112		-0.0093
1=Europe minus Italy, Portugal, Spain		-0.0282		-0.0303		-0.0287		-0.0258
1=Rest of world		-0.0117		-0.0148		-0.0018		-0.0164
1=9-point standalone is low (C/D, D, D/E or E)		-0.0295		-0.0481		-0.0282		-0.0297
1=9-point standalone is high (A/B, B)		-0.0334		-0.0227		-0.0366		-0.0424
Constant	-0.0249**	0.1534	-0.0320***	0.1861	-0.0295***	0.1234	-0.0303***	0.1169
Number of Observations	74	74	74	74	74	74	74	74
R2 adjusted	-0.010	0.093	0.043	0.132	-0.027	0.092	-0.017	0.087
Positive minus Negative Rating Surprise	n.a.	n.a.	n.a.	n.a.	0.3%	-0.3%	1.8%	-1.7%
P-value					0.8721	0.8826	0.3189	0.3884
Significance								
	Panel B: Excluding European Banks							
Positive Rating Surprise for Midpoint Map	0.0019	0.0112						
Negative Rating Surprise for Midpoint Map	n.a.	n.a.						
Positive Rating Surprise for Sovereign Support			0.0230**	0.0146				
Negative rating Surprise for Sovereign Support			n.a.	n.a.				
Positive Rating Surprise for Mean of 21-Point Standalone					0.0143	0.0237		
Negative Rating Surprise for Mean of 21-Point Standalone					0.0136	0.0199		
Positive Rating Surprise for Ordinal Ranking							0.0112	0.0182
Negative Rating Surprise for Ordinal Ranking							0.0206	0.0269
Bank Size		-0.0227		-0.0189		-0.0171		-0.0134
Fitch Securitization Share		-0.0313		-0.0346		-0.0415		-0.0450
Sovereign Rating		-0.0001		-0.0002		0.0019		-0.0005
Common Equity / Total Assets		-0.2437		-0.1230		-0.2423		-0.0458
Return on Equity		-0.3623*		-0.3221**		-0.3485**		-0.3645*
Liquidity Ratio		-0.0891		-0.0667		-0.0984		-0.0870
Short-term Funding		0.1149		0.1025		0.1135		0.1039
Local Analyst Dummy		0.0176		0.0193		0.0147		0.0210
1=Asia		-0.0669**		-0.0615*		-0.0588		-0.0586
1=Rest of world		-0.0267		-0.0337		-0.0136		-0.0239
1=9-point standalone is low (C/D, D, D/E or E)		-0.0491		-0.0445		-0.0400		-0.0277
1=9-point standalone is high (A/B, B)		0.0090		0.0148		-0.0017		0.0156
Constant	-0.0314**	0.3362	-0.0322***	0.2736	-0.0392***	0.2264	-0.0346***	0.2033
Number of Observations	39	39	39	39	39	39	39	39
R2 adjusted	-0.026	-0.051	-0.003	-0.056	-0.024	-0.032	-0.026	-0.049
Positive minus Negative Rating Surprise	n.a.	n.a.	n.a.	n.a.	0.1%	0.4%	-0.9%	-0.9%
P-value					0.9749	0.8835	0.4463	0.6855
Significance								

Table A.IX: Multivariate Regressions of CDS Reactions to Rating Surprises Using Continuous Variables

This table reports regressions of abnormal CDS changes on rating surprises and bank characteristics. The dependent variable is the market model-adjusted abnormal CDS change from two days before to two days after July 20, 2011, CAR[-2,2]. The rating surprises are calculated with respect to four benchmarks: Midpoint Map, Sovereign Support, Mean and Median of 21-Point Standalone Rating. The former two are ex ante benchmarks and the latter two ex post benchmarks, calculated as indicated in Table III. The regressions include a squared term for the ratings surprise to capture potential non-linearity. For each measure of ratings surprise there are two specifications: a first regression with only the ratings surprise, and a second that includes bank characteristics, defined in Table III. The regressions are estimated by pooled OLS, with robust standard errors clustered by country. ***,**, and * signify statistical significance at the 1%, 5% and 10% levels, respectively.

Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Panel A: Full Sample							
Rating Surprise for Midpoint Map	-0.0168	-0.0044						
Rating Surprise for Midpoint Map^2	0.0079*	0.0033						
Rating Surprise for Sovereign Support			0.0323**	0.0223				
Rating Surprise for Sovereign Support^2			-0.0053	-0.0004				
Rating Surprise for Mean of 21-Point Standalone					0.0002	-0.0006		
Rating Surprise for Mean of 21-Point Standalone^2					0.0028	0.0032		
Rating Surprise for Ordinal Ranking							0.0033	-0.0025
Rating Surprise for Ordinal Ranking^2							0.0003	-0.0004
Bank Size		-0.0187		-0.0202		-0.0181		-0.0161
Fitch Securitization Share		0.0082		0.0102		0.0079		0.0037
Sovereign Rating		0.0066**		0.0058*		0.0070**		0.0074**
Common Equity / Total Assets		-0.4532		-0.4052		-0.4501		-0.4273
Return on Equity		-0.0659		-0.0869		-0.0623		-0.0258
Liquidity Ratio		-0.0534		-0.0419		-0.0514		-0.0491
Short-term Funding		-0.0273		-0.0214		-0.0307		-0.0216
Local Analyst Dummy		0.0328**		0.0313**		0.0322**		0.0354**
1=Asia		-0.0396		-0.0448		-0.0380		-0.0363
1=Italy, Portugal, Spain		-0.0134		-0.0119		-0.0120		-0.0097
1=Europe minus Italy, Portugal, Spain		-0.0284		-0.0308		-0.0277		-0.0259
1=Rest of world		-0.0107		-0.0122		-0.0093		-0.0169
1=9-point standalone is low (C/D, D, D/E or E)		-0.0302		-0.0483		-0.0288		-0.0295
1=9-point standalone is high (A/B, B)		-0.0299		-0.0223		-0.0312		-0.0423
Constant	-0.0257**	0.1644	-0.0320***	0.1907	-0.0305***	0.1485	-0.0308***	0.1176
Number of Observations	74	74	74	74	74	74	74	74
R2 adjusted	-0.0097	0.0823	0.0291	0.1196	-0.0233	0.0824	-0.013	0.0855
	Panel B: Excluding European Banks							
Rating Surprise for Midpoint Map	0.0152	0.0104						
Rating Surprise for Midpoint Map^2	-0.0077	-0.0013						
Rating Surprise for Sovereign Support			0.0640***	0.0665				
Rating Surprise for Sovereign Support^2			-0.0295***	-0.0352				
Rating Surprise for Mean of 21-Point Standalone					0.0001	0.0028		
Rating Surprise for Mean of 21-Point Standalone2					-0.0013	0.0067		
Rating Surprise for Ordinal Ranking							-0.0012	-0.0015
Rating Surprise for Ordinal Ranking^2							0.0017*	0.0028
Bank Size		-0.0229		-0.0181		-0.0199		-0.0134
Fitch Securitization Share		-0.0346		-0.0352		-0.0464*		-0.0464
Sovereign Rating		0.0000		-0.0010		0.0006		-0.0007
Common Equity / Total Assets		-0.2499		-0.0836		-0.2118		-0.0591
Return on Equity		-0.3705*		-0.3290**		-0.3689**		-0.3873*
Liquidity Ratio		-0.0926		-0.0663		-0.0868		-0.0929
Short-term Funding		0.1161		0.1112		0.0981		0.1032
Local Analyst Dummy		0.0177		0.0181		0.0193		0.0194
1=Asia		-0.0683*		-0.0622*		-0.0653*		-0.0598
1=Rest of world		-0.0259		-0.0387		-0.0273		-0.0213
1=9-point standalone is low (C/D, D, D/E or E)		-0.0518		-0.0309		-0.0464		-0.0273
1=9-point standalone is high (A/B, B)		0.0094		0.0178		0.0101		0.0184
Constant	-0.0323**	0.3402	-0.0322***	0.2738	-0.0295***	0.2909	-0.0347***	0.2116
Number of Observations	39	39	39	39	39	39	39	39
R2 adjusted	-0.0448	-0.0862	-0.0260	-0.0947	-0.0548	-0.0859	-0.0265	-0.0411

Appendix B: Fitch Rating Point and Numerical Values Assigned

This appendix reports the numerical values assigned to each of the Fitch's ratings in this study. The value of a 9-Point Standalone Rating ("Individual Rating") is set equal to the midpoint of the corresponding range on the 21-Point Standalone Rating ("Viability Rating"), based on a mapping published by Fitch prior to the transition. In this mapping, a 9-Point Standalone Rating translates into one of several possible 21-Point Standalone Ratings, reflecting the combination of qualitative and quantitative factors employed by Fitch to derive a standalone rating.

Our Label:	All-in Rating		9-Point Standalone Rating		21-Point Standalone Rating	
Fitch Label:	*Issuer Default Rating*		*Individual Rating*		*Viability Rating*	
	Fitch Letter Code	Our Numeric Point	*Fitch Letter Code*	Our Numeric Point	*Fitch Letter Code*	Our Numeric Point
	AAA	20			*aaa*	20
	AA+	19	*A*	19.0	*aa+*	19
	AA	18			*aa*	18
	AA-	17	*A/B*	17.0	*aa-*	17
	A+	16	*B*	15.5	*a+*	16
	A	15			*a*	15
	A-	14	*B/C*	13.5	*a-*	14
	BBB+	13			*bbb+*	13
	BBB	12	*C*	11.5	*bbb*	12
	BBB-	11			*bbb-*	11
	BB+	10	*C/D*	9.5	*bb+*	10
	BB	9			*bb*	9
	BB-	8			*bb-*	8
	B+	7	*D*	7.0	*b+*	7
	B	6			*b*	6
	B-	5	*D/E*	5.0	*b-*	5
					ccc+	4
	CCC	3			*ccc*	3
			E	1.5	*ccc-*	2
	CC	1			*cc*	1
	C	0	*F*	0.0	*c*	0

Appendix C: Correlation Coefficients

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
21-Point Standalone Rating	(1)	1.0000															
9-Point Standalone Rating, Midpoint Map	(2)	0.9442*	1.0000														
All-in Rating	(3)	0.8088*	0.7142*	1.0000													
Support Rating Floor	(4)	0.3506*	0.1799*	0.6350*	1.0000												
Rating Surprise for Midpoint Map	(5)	0.2772*	-0.0331	0.3390*	0.5070*	1.0000											
Rating Surprise for Sovereign Support	(6)	-0.1836*	-0.3444*	0.0416	0.2146*	0.4557*	1.0000										
Rating Surprise for Mean of 21-Point Standalone	(7)	0.3557*	0.0288	0.4184*	0.5482*	0.9297*	0.4121*	1.0000									
Rating Surprise for Ordinal Ranking	(8)	0.0534	-0.1937*	0.0809	0.3322*	0.7157*	0.2896*	0.7203*	1.0000								
Ln(Assets)	(9)	0.5460*	0.4165*	0.6129*	0.6407*	0.4273*	0.0684	0.4693*	0.1960*	1.0000							
Fitch Securitization Share %	(10)	0.1285*	0.0799	0.2203*	0.2342*	0.1245*	-0.0210	0.1622*	0.0910	0.4532*	1.0000						
Sovereign Rating	(11)	0.4391*	0.4466*	0.4840*	-0.0894	-0.0041	0.0017	0.0561	-0.1682*	0.2037*	0.2011*	1.0000					
Common Equity / Total Assets	(12)	-0.1927*	-0.0870	-0.2262*	-0.3192*	-0.3162*	-0.1515*	-0.3276*	-0.0652	-0.5261*	-0.2880*	-0.2067*	1.0000				
Return on Equity	(13)	0.2696*	0.2582*	0.2142*	0.2774*	0.0569	-0.0915	0.0932	0.0457	-0.0103	-0.1636*	-0.4052*	0.2179*	1.0000			
Liquidity Ratio	(14)	0.2558*	0.1629*	0.2796*	0.4054*	0.2882*	-0.0611	0.3126*	0.1824*	0.4157*	0.1462*	-0.0377	-0.1537*	0.0764	1.0000		
Short-term Funding %	(15)	0.2896*	0.1928*	0.4351*	0.4963*	0.3029*	0.0839	0.3250*	0.0917	0.6135*	0.3215*	0.2162*	-0.5002*	-0.0537	0.4531*	1.0000	
Local Analyst Dummy	(16)	-0.0376	-0.0611	-0.0058	0.2591*	0.0906	-0.0630	0.0627	0.1543*	0.1708*	-0.0699	-0.3327*	-0.0851	0.1730*	0.2921*	0.0990	1.0000

Appendix D: Correlation Coefficients

Cumulative Abnormal Returns			(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Market Model-adjusted	[0,1]	(1)	1.0000								
	[0,4]	(2)	0.6453*	1.0000							
	[-2,2]	(3)	0.6324*	0.6526*	1.0000						
Mean-adjusted	[0,1]	(4)	0.7566*	0.3965*	0.4250*	1.0000					
	[0,4]	(5)	0.6126*	0.7542*	0.5501*	0.7803*	1.0000				
	[-2,2]	(6)	0.5740*	0.4595*	0.6982*	0.7979*	0.7812*	1.0000			
Size-adjusted	[0,1]	(7)	0.6906*	0.3346*	0.3586*	0.8670*	0.6433*	0.6653*	1.0000		
	[0,4]	(8)	0.4991*	0.7525*	0.4815*	0.5752*	0.8721*	0.6076*	0.6679*	1.0000	
	[-2,2]	(9)	0.4636*	0.4104*	0.6545*	0.6195*	0.6330*	0.8790*	0.7132*	0.6872*	1.0000

Cumulative Abnormal CDS Spread Changes			(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Market Model-adjusted	[0,1]	(1)	1.0000								
	[0,4]	(2)	0.5917*	1.0000							
	[-2,2]	(3)	0.5418*	0.5340*	1.0000						
Mean-adjusted	[0,1]	(4)	0.2532*	0.4255*	0.1555	1.0000					
	[0,4]	(5)	0.1997*	0.7505*	0.2616*	0.8116*	1.0000				
	[-2,2]	(6)	0.0973	0.4082*	0.5808*	0.7759*	0.7294*	1.0000			
Size-adjusted	[0,1]	(7)	0.2982*	0.3507*	0.0667	0.7984*	0.6406*	0.5284*	1.0000		
	[0,4]	(8)	0.1709	0.6523*	0.2181*	0.6057*	0.8234*	0.5473*	0.7442*	1.0000	
	[-2,2]	(9)	0.0603	0.3076*	0.5834*	0.4893*	0.5254*	0.7972*	0.6070*	0.6297*	1.0000

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