# When Senior meets Junior:

# Information in Credit Default Swap Spreads of Large Banks

Lars Norden [a, *] and Martin Weber [b]

[a] *Department of Finance, Rotterdam School of Management, Erasmus University, the Netherlands*

[b] *Department of Banking and Finance, University of Mannheim, Germany, and Centre for Economic Policy Research (CEPR), London, United Kingdom*

**Abstract**

We investigate whether information from credit default swap spreads (CDS) is useful for assessing the default risk of large banks. Based on an international sample from the period 2001-2008, we analyze and compare individual banks' daily senior and subordinate CDS spreads with stock market, credit rating, and accounting information. We find that differences and ratios of matched CDS spreads with different rankings are informative about banks' default risk. In normal times, both CDS market segments contribute significantly to price discovery but trading in subordinate CDS is less expensive. During the crisis (after August 2007), both segments exhibit a higher liquidity than before. However, information is now reflected earlier in senior than in subordinate CDS spreads, indicating a flight-to-quality. Our results highlight that information from CDS markets is useful beyond banks' share prices and credit ratings and, thus, improves market discipline through market monitoring.

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[*] Corresponding author (L. Norden). Address: Department of Finance, Rotterdam School of Management, Erasmus University, Burgemeester Oudlaan 50, 3000 DR Rotterdam, the Netherlands; Phone: +31 104082807; Fax: +31 104089017; E-mail: lnorden@rsm.nl.

## Extended Abstract

Default risk of banks is a hot topic. Currently, governments, central banks, and bank supervisors struggle whether and how to rescue individual banks, how to restore financial stability, and how to reshape the global financial system. Policy implications of research on financial intermediation and financial stability are needed more than ever. In this paper, we investigate whether joint information from credit default swaps (CDS) spreads with different rankings is useful for assessing the default risk of large banks, which can enhance market discipline. Market-based risk indicators may represent a complementary source of real-time information on banks' default risk, i.e., create market monitoring, and may improve the incentive structure for banks through feedback effects, i.e., exert market influence on credit availability and the cost of credit (see Flannery 1998). Our study primarily relates to market monitoring.

Given the importance of banks, the dramatic growth of credit risk transfer, and its role during the crisis (e.g., Stulz 2009), it is surprising that there is little evidence on CDS of banks (exceptions are Eichengreen et al. 2009, King 2009). Credit spreads of banks were very low before the crisis and there seemed to be no demand for a more comprehensive credit risk assessment and market discipline mechanisms beyond traditional banking supervision, credit ratings, and accounting-based disclosure requirements. The situation has changed substantially during the on-going crisis. Large credit losses, a substantial number of bank failures, the freeze up of interbank markets, and the negative impact on the real economy are examples for the consequences of realized default risk of banks. Counterparty risk in interbank and OTC derivatives markets is now a key issue since credit spreads of many banks have widened dramatically.

Therefore, we take a comprehensive look at how default risk of banks is reflected in CDS markets. We exploit a unique characteristic of these markets: CDS traders frequently provide simultaneous quotes for contracts on senior and subordinate bank debt. The main reason for this simultaneous quotation is that, unlike industrial firms, banks make frequent and substantial use of subordinate notes and debentures (SND) since these instruments are recognized as a part of their regulatory capital. Therefore, the subordinate segment of CDS markets attracts a large share of the overall trading volume in CDS on banks. Moreover, previous studies document that CDS markets are in general more sensitive to credit-related information than other markets, in particular compared to bond markets and when credit conditions deteriorate. Furthermore, in contrast to stock markets, CDS markets are made up by institutional traders only and there has been little supervision and regulation.

In our study, we both consider the difference and the ratio of subordinate and senior CDS spreads as well as both CDS spreads separately. Several remarks are in order. Considering the combined information from senior and subordinate CDS spreads can be superior to considering one type of debt only because the information processing might differ across segments. Moreover, spreads of subordinate debt, often labeled hybrid capital, are more risk-sensitive because of the absolute priority rule in debt service. The recovery rate of subordinate debt is always lower than the one of senior debt. Note that the probability of default is the same of both types of debt since it is measured at the issuer level and not at the level of single securities. In that respect, subordinate debt resembles equity although it is a debt claim. Looking at the difference (and ratio) between credit spreads of debt instruments with different ranks makes it possible to control for time-varying risk premia and liquidity effects. It is analogous to looking at the difference between credit spreads of differently-rated debt (e.g., credit spreads on BBB minus AAA bonds) instead of looking at one spread only. We also consider the ratio to measure the importance of the spreads relative to the levels. This is

important because the dynamics of the difference and ratio may have different interpretations, conditional on which spread has changed more strongly. Note that we control for the fact that both measures are influenced by a bank's capital structure, i.e., the fraction of subordinate debt relative to senior debt. The ratio of CDS spreads measures the relation of the market-implied recovery rates on subordinate and senior debt while the difference measures the product of the probability of default times the difference in recovery rates.

Our paper relates to the following three strands of literature. First, there are studies that examine indicators of bank fragility based on stock and bond market information and compare their usefulness to traditional risk measures such as financial ratios and credit ratings (e.g., Swidler and Wilcox 2002, Gropp, Vesala, and Vulpes 2004, Düllmann and Sosinska 2007, Knaup and Wagner 2008, Adrian and Brunnermeier 2008, De Jonghe 2008). Second, there are ideas on how to make market discipline an integral part of banking regulation and supervision. Most of these proposals are work in progress and analyze how banks' subordinate notes and debentures (SND) can be used to set the "right" incentives for banks through market monitoring and market influence (Flannery 1998, Bliss 2001, Evanoff and Wall 2002, Lang and Robertson 2002, Basel Committee on Banking Supervision 2003, Sironi 2002 and 2003, Krishnan, Ritchken, and Thomson 2005, Lehar, Seppi, Strobl 2005, Evanoff, Jagtiani, and Nakata 2008). None of these studies examines the informational content of banks' senior and subordinate CDS spreads. Third, an increasing number of empirical studies on CDS markets provide evidence that these markets are very efficient in processing credit-related information (Hull, Predescu, and White 2004, Norden and Weber 2004, Jorion and Zhang 2007, Acharya and Johnson 2007, Norden 2008). These studies show that CDS markets lead bond markets in a time-series and event-specific framework and CDS spreads contribute more to price discovery than bond spreads (Blanco, Brennan and Marsh 2005, Zhu 2006, Alexopoulou, Andersson and Georgescu 2009, Norden and Weber 2009).

We base our study on an international sample of large banks from the period 2001-2008 and examine whether individual banks' daily senior and subordinate CDS spreads compared to stock market, credit rating, and accounting information (see Table 1). We provide evidence that differences and ratios of matched CDS spreads with different rankings are informative about banks' default risk compared to other sources of information (see Figure 1). It can be seen that there is substantially more variation and a different pattern in our measures of CDS market information than in banks' share prices, especially during the crisis. For example, the strong reversal in CDS spreads on European banks in September 2008, i.e., the sharp decreases in the difference and ratio of subordinate and senior CDS spreads are due to the announcement of bank rescue plans by several governments whereas stock markets continue to fall (see King, 2009). Moreover, we show that subordinate CDS spreads are more closely related to share prices than senior CDS spreads (see Table 2). In addition, we observe that both types of CDS spreads become more sensitive to stock market information during the crisis (Table 2, Panel B).

We also find that CDS trading in the subordinate segment is less expensive in normal times (see Figure 2), which is consistent with the importance of subordinate debt for bank capital. Interestingly, both CDS market segments are more liquid after August 2007. This finding is complementary to the results by Alexopoulou, Andersson and Georgescu (2009) who show that CDS markets contribute more to price discovery during the crisis than bond markets. However, the CDS market structure has shifted towards the senior segment, indicating a flight-to-quality. Our time-series analysis reveals two-way linkages and a long-run equilibrium between senior and subordinate CDS spreads before the crisis. However, during the crisis, the long-run equilibrium breaks down and there is a clear lead of the senior over the subordinate CDS spreads during the crisis (see Table 3). This change in information

processing is supported with an increased liquidity of the senior CDS segment during the crisis.

Finally, we analyze the determinants of the difference and ratio of matched subordinate and senior CDS spreads on banks (see Table 4). Most important, we find that the difference of the percentage bid-ask spread between subordinate and senior CDS is significantly negatively related to the difference and ratio. In other words, the bigger the difference in trading costs and liquidity, the closer the two CDS spreads. The magnitude of this effect almost doubles during the crisis, indicating that liquidity is an important factor. Furthermore, the share price index SHARE is significantly related to the difference and ratio (except for the ratio during the crisis), i.e., spreads on subordinate relative to senior debt increase when share prices fall. Note the magnitude of the link between stock and CDS markets increases by more than 30% (from -0.1089 to -0.1443). Interestingly, the rating variables RATING, DOWN and REVDOWN are all positively related to the difference between senior and subordinate debt before the crisis since the difference reflects both the risk of default and loss severity. Hence, it is consistent to find no influence on the ratio since the probability of default is netted out in this measure. Moreover, it is noteworthy that the coefficients of RATING and DOWN loose their significance whereas the coefficient of REVDOWN more than doubles. This is in line with the rating agencies' claim that providing additional services such as rating reviews, watch listings and outlooks adds value to the credit rating itself. Finally, SUBTA, the fraction of subordinate debt to total assets is the only significant accounting measure that affects CDS spreads. Consistent with theory, it only affects the ratio but not the difference of subordinate and senior CDS spreads since the capital structure is also measured in relative terms.

**References**


Acharya, V., Johnson, T. (2007): Insider trading in credit derivatives, *Journal of Financial Economics* 84, 110-141.

Adrian, T., Brunnermeier, M.K. (2008): CoVaR, Federal Reserve Bank of New York, Staff Report No. 348, September 2008.

Alexopoulou, I., Andersson, M., Georgescu, O. (2009): An Empirical Study on the Decoupling Movements between Corporate Bond and CDS Spreads, European Central Bank.

Basel Committee on Banking Supervision (2003): Markets for Bank Subordinated Debt and Equity in Basel Committee Member Countries, Working Paper No. 12, August.

Berger, A., Davies, S., Flannery, M. (2000): Comparing market and supervisory assessments of bank performance: Who knows what when?, *Journal of Money, Credit, and Banking*, 32, 641-667.

Blanco, R., Brennan, S., Marsh, I., 2005. An empirical analysis of the dynamic relation between investment-grade bonds and credit default swaps. *Journal of Finance* 60, 2255-2281.

Bliss, R. (2001): Market discipline and subordinated debt: A review of some salient issues, *Economic Perspectives*, Federal Reserve Bank of Chicago, 25, No. 1, 24-45.

Blum, J. (2002): Subordinated debt, market discipline, and banks' risk taking, *Journal of Banking and Finance*, 26, 1427-1441.

Bongini, P., Laeven, L., Majnoni, G. (2002): How Good is the Market at Assessing Bank Fragility? A Horse Race Between Different Indicators, *Journal of Banking and Finance*, 26, 1011-1028.

Cakici, N., Chatterjee, S. (1993): Market discipline, bank subordinated debt, and interest rate uncertainty, *Journal of Banking and Finance*, 17, 747-762.

DeYoung, R., Flannery, M., Lang, W., Sorescu, S. (2001): The information content of bank exam ratings and subordinated debt prices, *Journal of Money, Credit, and Banking*, 33, 900-925.

Düllmann, K., Sosinska, A. (2007): Credit default swap prices as risk indicators of listed German banks, *Financial Markets and Portfolio Management*, 21, 269-292.

Eichengreen, B., Mody, A., Nedeljkovic, M., Sarno, L. (2009): How the Subprime Crisis Went Global: Evidence from Bank Credit Default Swap Spreads, NBER Working Paper No. w14904.

Evanoff, D., Wall, L. (2002): Measures of riskiness of banking organizations: Subordinated debt yields, risk-based capital, and examination ratings, *Journal of Banking and Finance*, vol. 26, 989-1009.

Evanoff, D., Jagtiani, J., Nakata, T. (2008): The Potential Role of Subordinated Debt Programs in Enhancing Market Discipline in Banking. Federal Reserve Bank of Chicago, Working Paper, August 2007.

Fitch Ratings (2009): Global Credit Derivatives Survey, Special Report, August 20, 2009.

Flannery, M. (1998): Using market information in prudential bank supervision: a review of the U.S. empirical evidence, *Journal of Money, Credit, and Banking*, 30, 273-305.

Fratianni, M., Marchionne, F. (2009): Rescuing banks from the effects of the financial crisis. Working Paper, September 2009.

Goyal, V. (2005): Market discipline of bank risk: Evidence from subordinated debt contracts, *Journal of Financial Intermediation*, 14, 318-350.

Gropp, R., Vesala, J., Vulpes, G. (2006): Equity and bond market signals as leading indicators of bank fragility, *Journal of Money, Credit, and Banking*, 38, 399-428.

Hawkesby, C., Marsh, I.W., Stevens, I. (2007): Comovements in the equity prices of large complex financial institutions, *Journal of Financial Stability*, 2, 391-411.

Hull, J., Predescu, M., White, A. (2004): The relationship between credit default swap spreads, bond yields, and credit rating announcements, *Journal of Banking and Finance*, 28, 2789-2811.

Jorion, P., Zhang, G. (2007): Good and bad credit contagion: Evidence from credit default swaps, *Journal of Financial Economics* 84, 860-883.

King, M. (2009): Time to buy or just buying time? The market reaction to bank rescue packages, BIS Working Paper No. 288, September 2009.

Knaup, M., Wagner, W. (2008): A market-based measure of credit quality and banks' performance during the Subprime Crisis, Tilburg University, Working Paper.

Krishnan, C., Ritchken, P., Thomson, J. (2005): Monitoring and controlling bank risk: does risky debt help? *Journal of Finance*, 60, 343-378.

Lang, W., Robertson, D. (2002): Analysis of proposals for a minimum subordinated debt requirement, *Journal of Economics and Business*, 54, 115-136.

Lehar, A., Seppi, D., Strobl, G. (2005): Using price information as an instrument of market discipline in regulating bank risk, Working Paper, Kenan-Flagler Business School, University of North Carolina at Chapel Hill.

Norden, L., Weber, M. (2004): Informational efficiency of credit default swap and stock markets: The impact of credit rating announcements, *Journal of Banking and Finance*, 28, 2813-2843.

Norden, L. (2008): Credit derivatives, corporate news, and credit ratings, WFA 2009 San Diego Meetings Paper.

Norden, L., Weber, M. (2009): The co-movement of credit default swap, bond and stock markets: an empirical analysis, *European Financial Management* 15, 529-562.

Pop, A. (2006): Market discipline in international banking regulation: Keeping the playing field level, *Journal of Financial Stability*, 2, 286-310.

Sironi, A. (2002): Strengthening banks' market discipline and leveling the playing field: Are the two compatible?, *Journal of Banking and Finance*, 26, 1065-1091.

Sironi, A. (2003): Testing for market discipline in the European banking industry: Evidence from subordinated debt issues, *Journal of Money, Credit, and Banking*, 35, 443-472.

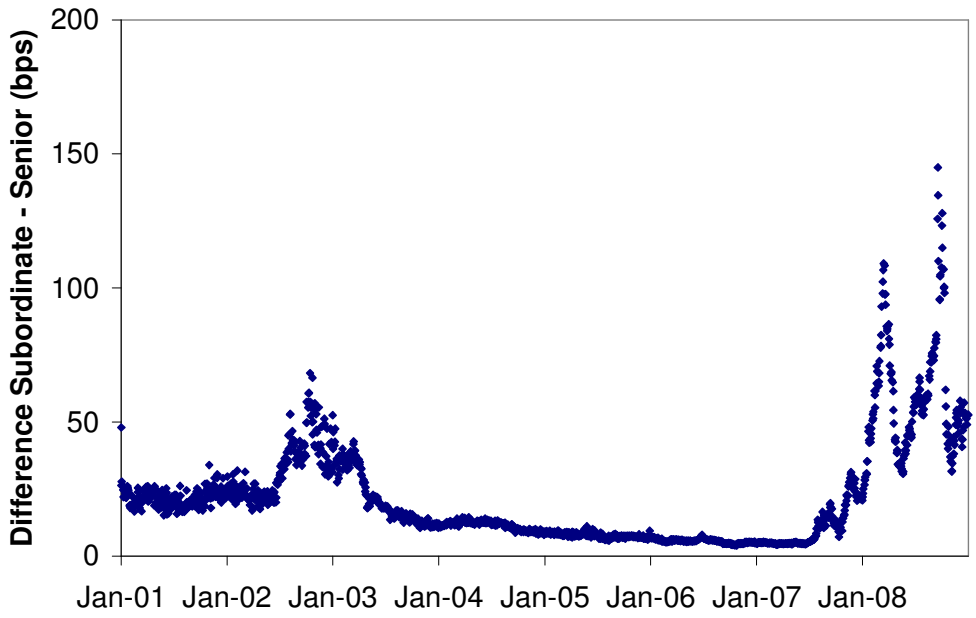
Stulz, R.M. (2009): Credit default swaps and the credit crisis. NBER Working Paper 15384, September 2009.

Swidler, S., Wilcox, J. (2002): Information about bank risk in option prices, *Journal of Banking and Finance*, 26, 1033-1057.

Zhu, H. (2006): An empirical comparison of credit spreads between the bond market and the credit default swap market. *Journal of Financial Services Research* 29, 211-235.

Figure 1: Banks' CDS spreads and share prices during 2001-2008

Panel A: Median difference of 5-year unsecured subordinate and senior CDS spreads




Panel B: Median ratio of 5-year unsecured subordinate and senior CDS spreads

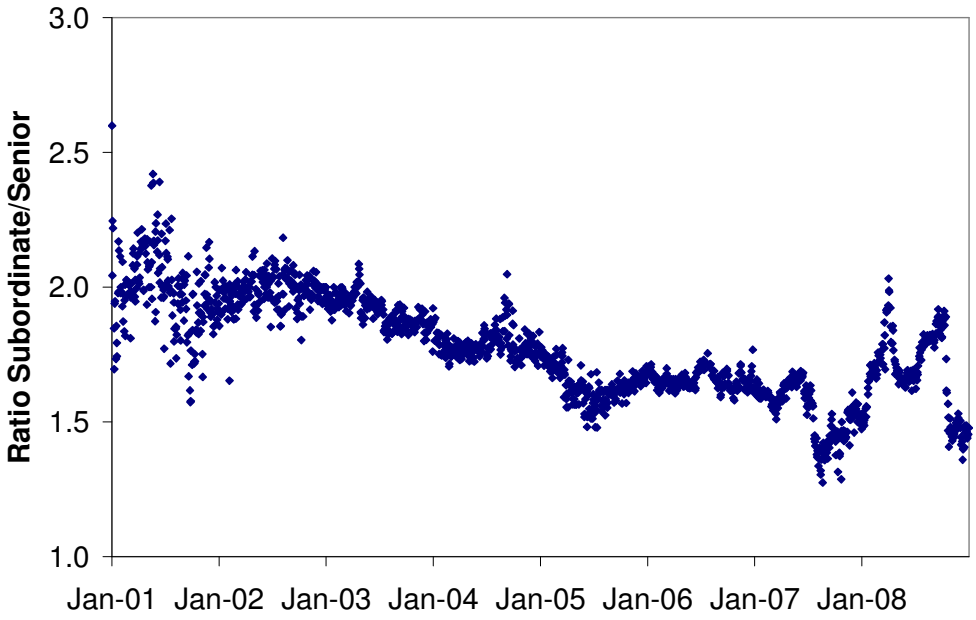


Figure 1 (continued)

Panel C: Banks' share price evolution (index plot, Jan 2, 2001=100)

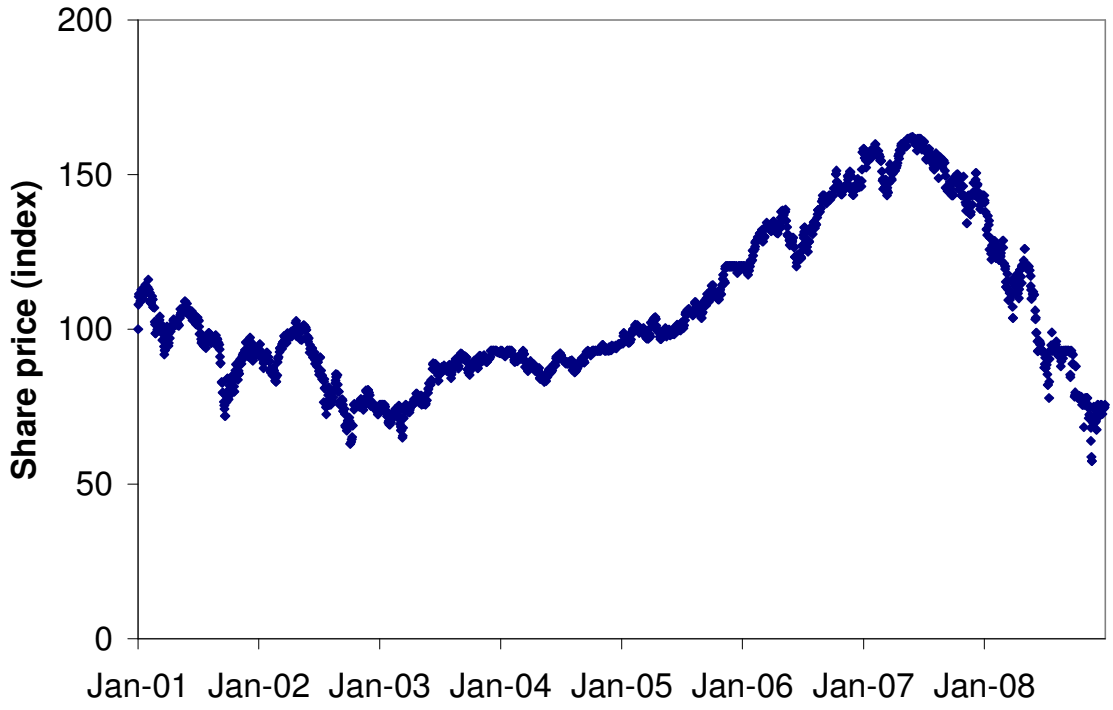


Figure 2: Liquidity of banks' senior and subordinate CDS spreads during 2001-2008

This figure displays the cross-sectional median of the banks' percentage bid-ask spreads for senior and subordinate CDS.

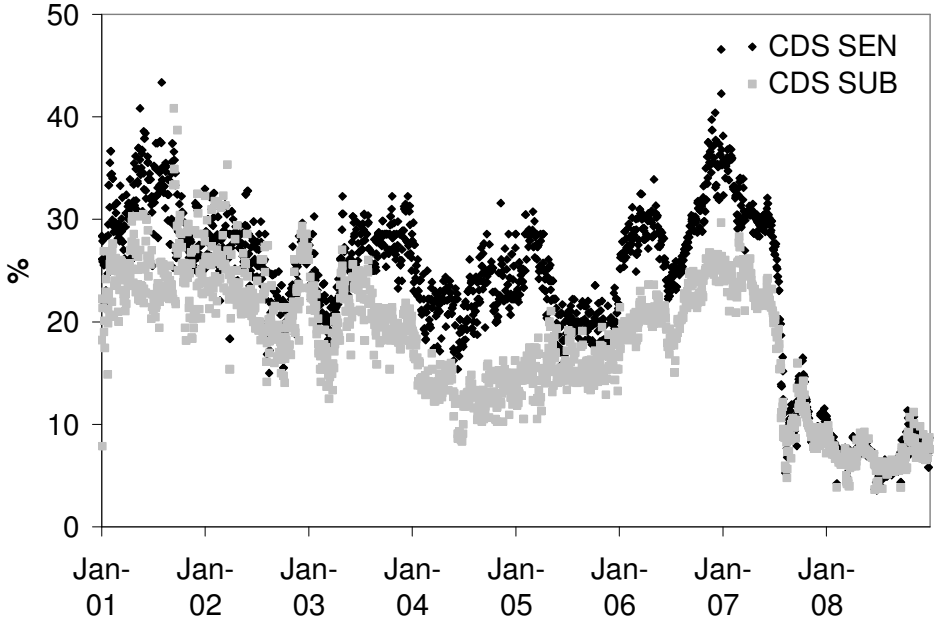


Table 1: The data

The data set includes daily senior and subordinate CDS spreads, daily share prices, daily credit ratings and annual financial statement information on 39 large banks over the period 2001-2008 (91,694 observations; 20 banks from Europe, 14 banks from the US, and 4 banks from Asia). We report variables means, medians, and the 5%- and 95% quantiles. Credit ratings are issuer ratings from Standard & Poor's, Moody's, and Fitch.

| | | Full sample period (Jan 2001 – Dec 2008) | | | | Crisis (Aug 2007- Dec 2008) |
|---|---|---|---|---|---|---|
| Variable | Description | Mean | Median | Q5% | Q95% | Median |
| $CDS^{SEN}$ | CDS spread for 5-year senior unsecured debt (bps) | 39 | 24 | 6 | 125 | 91 |
| $CDS^{SUB}$ | CDS spread for 5-year subordinate unsecured debt (bps) | 60 | 32 | 10 | 105 | 126 |
| $DIF^{SUB, SEN}$ | $CDS^{SUB} - CDS^{SEN}$ (bps) | 25 | 13 | 3 | 91 | 47 |
| $RATIO^{SUB, SEN}$ | $CDS^{SUB} / CDS^{SEN}$ | 1.76 | 1.75 | 1.31 | 2.21 | 1.62 |
| $CDS^{SEN}$ % bid ask | $(CDS^{SEN, ask} - CDS^{SEN, bid}) / CDS^{SEN, mid}$ (%) | 23.03 | 22.58 | 4.28 | 45.69 | 8.16 |
| $CDS^{SUB}$ % bid ask | $(CDS^{SUB, ask} - CDS^{SUB, bid}) / CDS^{SUB, mid}$ (%) | 17.48 | 16.66 | 5.57 | 32.92 | 8.12 |
| SHARE | Share price (index, Jan 2, 2001 = 100) | 121 | 109 | 40 | 229 | 121 |
| TA | Total assets (in million Euro) | 618,893 | 523,990 | 162,076 | 1,402,955 | 894,597 |
| SUBTA | Subordinate debt to total assets (%) | 2.29 | 2.26 | 0.36 | 4.75 | 2.38 |
| DEPTA | Deposits to total assets (%) | 37.08 | 37.05 | 22.36 | 55.75 | 35.76 |
| IBTA | Interbank liabilities to total assets (%) | 15.57 | 14.08 | 6.40 | 29.20 | 11.69 |
| CAPTA | Capital ratio (%) | 4.75 | 4.29 | 2.05 | 8.97 | 4.81 |
| RATING | Average credit rating of the S&P, Moody's and Fitch rating (measured on a 17 scale; AAA=1, AA+ = 2, …, BBB = 9, …, CCC+ = 17) | 4.92 | 5.00 | 3 | 7 | 5.00 |

Table 2: The contemporaneous link between CDS spreads and share prices

This table reports the contemporaneous link between matched senior and subordinate CDS spreads to share prices of the same banks. Data comes from 20 large European banks from the period 2001-2008. We report p-values from robust standard errors, clustered at the bank-level and adjusted for heteroskedasticity. ***, **, * indicate that coefficients are statistically significant at the 0.01, 0.05, and 0.10-level.

Panel A: Before the crisis (Jan 2001 – Jul 2007)

| Dep. Var. | $\Delta CDS_t^{SEN}$ | | | $\Delta CDS_t^{SUB}$ | | |
|---|---|---|---|---|---|---|
| | Coeff. | p-val. | | Coeff. | p-val. | |
| ΔSHARE | -0.1798 | 0.001 | *** | -0.3448 | 0.001 | *** |
| Const. | 38.6533 | 0.000 | *** | 72.0302 | 0.000 | *** |
| $R^2$ | | 0.2388 | | | 0.2400 | |
| Obs. | | 28,644 | | | 28,644 | |

Panel B: During the crisis (Aug 2007 – Dec 2008)

| Dep. Var. | $\Delta CDS_t^{SEN}$ | | | $\Delta CDS_t^{SUB}$ | | |
|---|---|---|---|---|---|---|
| | Coeff. | p-val. | | Coeff. | p-val. | |
| ΔSHARE | -0.2831 | 0.004 | *** | -0.4923 | 0.002 | *** |
| Const. | 108.2164 | 0.001 | *** | 183.9117 | 0.000 | *** |
| $R^2$ | | 0.1623 | | | 0.1568 | |
| Obs. | | 6,456 | | | 6,456 | |

Table 3: The link between senior and subordinate CDS spreads before and during the crisis

This table reports the estimation results from the second stage of a Vector Error Correction Model (VECM). The first stage regression is $CDS_t^{SUB} = \mu + \rho CDS_t^{SEN} + \delta CRISIS_t + E_t$ and measures the long-run relation between the spread levels. $CDS^{SEN \text{ or } SUB}$ refer to daily senior and subordinate CDS spreads from the same bank and CRISIS is an indicator variable that equals one after July 26, 2007, and zero otherwise. The second stage regressions are based on daily changes in CDS spreads and indicate the short-run adjustment process:

$$\Delta CDS_t^{SEN} = \alpha_1 + \lambda_1 E_{t-1} + \beta_1 \Delta CDS_{t-1}^{SEN} + \gamma_1 \Delta CDS_{t-1}^{SUB} + \varepsilon_t$$
$$\Delta CDS_t^{SUB} = \alpha_2 + \lambda_2 E_{t-1} + \beta_2 \Delta CDS_{t-1}^{SEN} + \gamma_2 \Delta CDS_{t-1}^{SUB} + \varepsilon_t$$

The coefficients $\lambda_1$ and $\lambda_1$ of the lagged residual $E_{t-1}$ serve as an error correction term in the second stage regressions. Data comes from 20 large European banks from the period 2001-2008. We report p-values from robust standard errors, clustered at the bank-level and adjusted for heteroskedasticity. ***, **, * indicate that coefficients are statistically significant at the 0.01, 0.05, and 0.10-level.

Panel A: Before the crisis (Jan 2001 – Jul 2007)

| Dep. Var. | $\Delta CDS_t^{SEN}$ | | | $\Delta CDS_t^{SUB}$ | | |
|---|---|---|---|---|---|---|
| | Coeff. | p-val. | | Coeff. | p-val. | |
| $E_{t-1}$ | 0.0427 | 0.003 | *** | -0.1206 | 0.000 | *** |
| $\Delta CDS_{t-1}^{SEN}$ | -0.2931 | 0.000 | *** | 0.0526 | 0.407 | |
| $\Delta CDS_{t-1}^{SUB}$ | 0.0247 | 0.163 | | -0.2982 | 0.000 | *** |
| Const. | 0.0364 | 0.125 | | -0.1309 | 0.029 | ** |
| $R^2$ | 0.1112 | | | 0.1312 | | |
| Obs. | 26,125 | | | 26,125 | | |

Panel B: During the crisis (Aug 2007 – Dec 2008)

| Dep. Var. | $\Delta CDS_t^{SEN}$ | | | $\Delta CDS_t^{SUB}$ | | |
|---|---|---|---|---|---|---|
| | Coeff. | p-val. | | Coeff. | p-val. | |
| $E_{t-1}$ | -0.0175 | 0.000 | *** | -0.0452 | 0.000 | *** |
| $\Delta CDS_{t-1}^{SEN}$ | 0.1115 | 0.144 | | 0.6285 | 0.000 | *** |
| $\Delta CDS_{t-1}^{SUB}$ | 0.0738 | 0.107 | | -0.1353 | 0.066 | * |
| Const. | 0.2914 | 0.000 | *** | 0.5104 | 0.000 | *** |
| $R^2$ | 0.0547 | | | 0.0876 | | |
| Obs. | 7,171 | | | 7,171 | | |

Table 4: Determinants of the difference and ratio of subordinate and senior CDS spreads

This table reports regression results for the determinants of the difference and ratio of banks' subordinate and senior CDS spreads before and during the crisis. Data comes from 20 large European banks from the period 2001-2008. We report p-values from robust standard errors, clustered at the bank-level and adjusted for heteroskedasticity. ***, **, * indicate that coefficients are statistically significant at the 0.01, 0.05, and 0.10-level.

Panel A: The difference of subordinate and senior CDS spreads

| | Before the crisis (Jan 2001 – Jul 2007) | | | During the crisis (Aug 2007 – Dec 2008) | | |
|---|---|---|---|---|---|---|
| Dep. Var. | $DIF_t^{SUB, SEN}$ | | | $DIF_t^{SUB, SEN}$ | | |
| | Coeff. | p-val. | | Coeff. | p-val. | |
| $SHARE_t$ | -0.1089 | 0.003 | *** | -0.1443 | 0.068 | * |
| $\Delta BIDASK\_CDS^{SUB, SEN}$ | -2.3142 | 0.000 | *** | -4.2733 | 0.000 | *** |
| RATING | 2.7039 | 0.000 | *** | 2.4650 | 0.144 | |
| DOWN | 20.2977 | 0.004 | *** | 5.8786 | 0.476 | |
| REVDOWN | 8.1464 | 0.024 | ** | 21.8613 | 0.068 | * |
| SUBTA | -0.0387 | 0.954 | | -0.2337 | 0.901 | |
| CAPTA | -0.2406 | 0.724 | | -0.2834 | 0.773 | |
| LOG(TA) | 1.4582 | 0.368 | | 3.6627 | 0.444 | |
| Const. | -7.0961 | 0.751 | | -5.3142 | 0.931 | |
| $R^2$ | 0.4529 | | | 0.3062 | | |
| Obs. | 24,476 | | | 4,832 | | |

Panel B: The ratio of subordinate and senior CDS spreads

| | Before the crisis (Jan 2001 – Jul 2007) | | | During the crisis (Aug 2007 – Dec 2008) | | |
|---|---|---|---|---|---|---|
| Dep. Var. | $RATIO_t^{SUB, SEN}$ | | | $RATIO_t^{SUB, SEN}$ | | |
| | Coeff. | p-val. | | Coeff. | p-val. | |
| $SHARE_t$ | -0.0016 | 0.003 | *** | -0.0003 | 0.380 | |
| $\Delta BIDASK\_CDS^{SUB, SEN}$ | -0.0135 | 0.044 | ** | -0.0273 | 0.000 | *** |
| RATING | -0.0215 | 0.136 | | 0.0512 | 0.019 | ** |
| DOWN | 0.1211 | 0.239 | | -0.0142 | 0.774 | |
| REVDOWN | -0.0359 | 0.316 | | 0.0914 | 0.185 | |
| SUBTA | -0.0303 | 0.060 | * | -0.0032 | 0.878 | |
| CAPTA | -0.0048 | 0.803 | | 0.0120 | 0.301 | |
| LOG(TA) | -0.1240 | 0.025 | ** | -0.0148 | 0.621 | |
| Const. | 3.7567 | 0.000 | *** | 1.5654 | 0.002 | *** |
| $R^2$ | 0.1626 | | | 0.2029 | | |
| Obs. | 24,476 | | | 4,832 | | |