



FCF Bank Monitor

H1 2019



THE FINANCING SPECIALIST



EXECUTIVE SUMMARY

Executive Summary

The FCF Bank Monitor is a standardized report on Credit Default Swap spreads of German and foreign banks, most active in the German midcap market and is a reference for investors, corporates and professionals

More advanced, detailed and / or customized reports are available upon request

FCF Bank Monitor

is a comprehensive semi-annual analysis of the historic and current spreads of Credit Default Swaps (CDS) for banks most active in the German corporate lending market. The analysis provides the short-term, medium-term and long-term market view on such banks' credit default risks and is an indicator for banks' (re-)financing costs in the capital markets

Selection of Financial Institutions

The selection of financial institutions is based on the YTD financing volumes (senior debt incl. 2nd lien) in the German midcap segment recorded by Debtwire:

- Only institutions with actively traded CDS instruments are included

Customized Information

More advanced, detailed and / or customized reports can be ordered individually, offering subscribers the possibility to customize the following criteria (among others):

- Inclusion of international / US institutions
- Selection / deselection of specific institutions
- Specific solvency analysis (equity or debt analysis)
- Monthly or quarterly updates

Recipients

The FCF Bank Monitor targets the following audience:

- Financial Institutions
- Investors
- Corporates with existing bank financings and with further financing needs

Availability

The FCF Bank Monitor is available on FCF's website at "www.fcf.de"

Data

All input data is provided by S&P Capital IQ and is not independently verified by FCF. Ratio and multiple calculations are driven based on the input data available. For additional information and disclaimer, please refer to the last page

To recommend colleagues to be added to the mailing list, kindly send an email with the respective contact information

If you have questions, comments or ideas, please do not hesitate to contact us

FCF OVERVIEW



FCF seeks to provide its clients with financing solutions

- (i) at the lowest cost,*
- (ii) with the highest flexibility,*
- (iii) in the shortest period of time,*
- (iv) with the highest closing probability, and with*
- (v) financing partners that integrate well into their strategy*

Who We Are

- Specialized investment bank and financing specialist
- Advising public and private small / midcap companies
- Advisor for structuring and placement of financing transactions:
 - All instruments: Unbiased approach to all available corporate financing instruments (no product selling approach), allowing for customized financing structures
 - All investors: Close and trusted relationships with senior executives of virtually all relevant equity and debt investors
 - Fast process: Process management skills and direct / personal access to institutional debt and equity investors enable fast transactions
- More than 100 transactions with a total placement volume in excess of EUR 4.0 billion since foundation in 2005
- Approx. 10 professionals headquartered in Munich

Capital Markets Capabilities and Services

Equity	Private / Pre-IPO	<ul style="list-style-type: none"> ■ Venture capital ■ Growth capital 	<ul style="list-style-type: none"> ■ Private equity
	Public	<ul style="list-style-type: none"> ■ Initial Public Offering (IPO) / Capital increase ■ Dual-track (IPO and alternative transaction) 	<ul style="list-style-type: none"> ■ pursued in tandem ■ Private Investment in Public Equity (PIPE) ■ Block trade
Debt	Short-term Debt	<ul style="list-style-type: none"> ■ Receivables / Factoring / Asset-backed Securities ■ Borrowing base / Inventory 	<ul style="list-style-type: none"> ■ Working capital / Revolving credit facility ■ Guarantees / Letter of Credit
	Long-term Debt	<ul style="list-style-type: none"> ■ Bank loan facility / Syndicated loans ■ Sale-and-lease back / Leasing ■ Corporate bonds (public / private placement) 	<ul style="list-style-type: none"> ■ Promissory note (<i>Schuldscheindarlehen</i>) ■ High-yield / PIK bond ■ Second lien / Subordinated loans ■ Unitranches
	Mezzanine	<ul style="list-style-type: none"> ■ Mezzanine capital 	<ul style="list-style-type: none"> ■ Convertible bonds

Selected Transactions

<p>Syndicated Loan, Factoring and Warehousing Facility</p> <p>Doppstadt Familienholding GmbH</p> <p>EUR 80m</p> <p>June 2019</p>	<p>Round Extension</p> <p>Synapticon GmbH</p> <p>[confidential]</p> <p>June 2019</p>	<p>Capital Increase</p> <p>Synapticon GmbH</p> <p>> EUR 10m</p> <p>January 2019</p>	<p>Investment in</p> <p>Advisor to AkrosA Private Equity GmbH & Co. KG</p> <p>> EUR 10m</p> <p>December 2018</p>	<p>Acquisition Financing Senior Loan & WCF</p> <p>GSE Group Acquisition by Finexx</p> <p>[confidential]</p> <p>December 2018</p>	<p>Acquisition Financing Second Lien Loan</p> <p>GSE Group Acquisition by Finexx</p> <p>[confidential]</p> <p>November 2018</p>	<p>Syndicated Loan Facility</p> <p>KMP Holding GmbH</p> <p>[confidential]</p> <p>April 2018</p>	<p>Bilateral Loan Facility</p> <p>[confidential]</p> <p>Business Service Provider</p> <p>[confidential]</p> <p>April 2018</p>	<p>Capital Increase</p> <p>[confidential]</p> <p>Leading Virtual Reality Company</p> <p>[confidential]</p> <p>April 2018</p>	<p>European Investment Bank Debt Facility</p> <p>censhare AG</p> <p>EUR 25m</p> <p>December 2017</p>	<p>European Investment Bank Debt Facility</p> <p>AMW GmbH</p> <p>EUR 25m</p> <p>December 2017</p>	<p>R&D Financing Debt Facility</p> <p>Voxeljet AG</p> <p>EUR 25m</p> <p>November 2017</p>
<p>Capital Increase</p> <p>numares AG</p> <p>EUR 11m</p> <p>November 2017</p>	<p>European Investment Bank Debt Facility</p> <p>MagForce AG</p> <p>EUR 35m</p> <p>July 2017</p>	<p>Syndicated Loan Facility</p> <p>Ziegler Holzindustrie GmbH & Co. KG</p> <p>EUR 70m</p> <p>July 2017</p>	<p>Promissory Note</p> <p>Schnellecke Group AG & Co. KG</p> <p>EUR 55m</p> <p>June 2017</p>	<p>Bilateral Loan Facility</p> <p>DSD - Duales System Holding GmbH & Co. KG</p> <p>EUR 30m</p> <p>June 2017</p>	<p>European Investment Bank Debt Facility</p> <p>Biofrontera AG</p> <p>EUR 20m</p> <p>May 2017</p>	<p>Syndicated Loan Facility</p> <p>Schnellecke Group AG & Co. KG</p> <p>EUR 105m</p> <p>March 2017</p>	<p>Factoring Facility</p> <p>Schnellecke Group AG & Co. KG</p> <p>EUR 50m</p> <p>March 2017</p>	<p>Advisor to the Family and the Company</p> <p>W Schulz Group Sale to Berkshire Hathaway</p> <p>[confidential]</p> <p>February 2017</p>	<p>Debt Financing</p> <p>Alno AG</p> <p>> EUR 35m</p> <p>July 2016</p>	<p>Syndicated Loan Facility</p> <p>Karl Tönsmeier Entsorgungswirtschaft GmbH & Co. KG</p> <p>EUR 82m</p> <p>May 2016</p>	<p>Senior Debt Financing</p> <p>Max Aicher Group</p> <p>[confidential]</p> <p>April 2016</p>



1

Financing advisor in Germany, purely focusing on corporate financing transactions



More than
10

Investment banking professionals



Close to
100

Years of aggregated, investment banking / financing experience



More than
100

Completed transactions



More than
4 bn

Total volume of advised & closed transactions since 2005



Network

Access to more than 4000 international financial institutions



2000

Contacts to family offices and ultra high net worth individuals worldwide



More than
25

International conferences organized



More than
120

Articles and research papers published



Leading

Advisor for financing transactions with EIB in the DACH region

KEY FINDINGS



Key Findings (I)

The FCF Bank Monitor highlights the key developments of German and foreign banks most active in the German midcap financing market

The FCF Bank Monitor outlines several key factors that should be considered when selecting banks during a (re)financing of existing financial liabilities

Key Findings

- CDS spreads of banks reveal two fundamental market principles that have significant implications for borrowers:
 - i. Solvency / crisis resistance: CDS spreads put a price on the future solvency of a bank according to all information currently available in the market and signal the bank's ability to remain operational in periods of crisis / illiquid markets. Banks with lower, more stable CDS spreads should respond less erratically during periods of stress with their borrowers (i.e. covenant breaks), ceteris paribus
 - ii. Pricing: CDS spreads indicate the perceived solvency of banks, hence their future ability to refinance in the future (funding costs). Consequently, banks with lower, more stable CDS spreads generally have to pay lower risk premia as part of their funding costs, enabling them to offer cheaper, longer financing conditions to their customers / borrowers, ceteris paribus
- Reference bonds of banks and their corresponding CDS spreads are strongly impacted by regulatory changes / events:
 - In '17, the European Union created a new legal framework that allows European banks to issue senior "preferred" bonds (lower risk to investors)
 - All European banks (excl. German banks) have since issued "preferred" bonds, while the German "Sanierungs- und Abwicklungsgesetz" ("SAG") prohibited German commercial banks from issuing such bonds
 - The corresponding reference CDS spreads of European banks decreased sharply ("preferred", lower risk), while reference CDS spreads of German commercial banks remained unchanged ("non-preferred", higher risk)
 - In '18, the SAG was modified to also allow German commercial banks to issue "preferred" bonds as of May '19
 - The corresponding reference CDS spreads of German commercial banks (e.g. Deutsche Bank, Commerzbank) decreased sharply in May '19 and can now be compared "like-for-like" with their European competitors
- Both German and foreign banks experienced significant increases in perceived credit risk during the Euro crisis in '10 / '11. Since then, confidence in the banks has strengthened
 - As of June 2019, CDS spreads for German and foreign banks active in Germany show significant improvements over the past 6 months, responding to the normalization in market volatility and leading to historically low funding costs for banks. The current market situation provides an ideal opportunity for borrowers to (re)finance existing financial liabilities, reduce interest expenses and secure long-term financing facilities

Key Findings (II)

The FCF Bank Monitor highlights the key developments of German and foreign banks most active in the German midcap financing market

The FCF Bank Monitor outlines several key factors that should be considered when selecting banks during a (re)financing of existing financial liabilities

Key Findings

- Of the German and foreign banks operating / lending in Germany;
 - German banks with the best perceived solvency across 1-, 5- and 10-year terms are Bayern LB and LBBW
 - Foreign banks with consistently low CDS spreads across 1-, 5- and 10-year terms are the French Crédit Mutuel and the Dutch ING Bank
- A general trend can be uncovered between German and foreign banks, especially across mid- and long-term horizons, whereby foreign banks are perceived to be more solvent than their German peers
- A medium variation in CDS spreads highlights the importance of considering the perceived solvency of the bank prior to selecting an institution as a lending bank. The ratio between the least and most solvent bank is 5.4x for 5-year CDS spreads
- Across longer time horizons, German banks exhibit a higher probability of a future rating downgrade, exhibiting higher CDS spreads than their current rating would indicate, where the DZ Bank and Hamburg Commercial appear most susceptible to future rating downgrades

League Table

FCF allocated scores of 1 (low) to 15 (high) to the 15 German and foreign banks, based on:

- i. 1-Year CDS spread and volatility¹;
- ii. 5-Years CDS spread and volatility;
- iii. 10-Years CDS spread and volatility;
- iv. Public ratings (Fitch, Moody's, S&P)

Based on the total score, FCF created a league table (high to low)

The ranking in the league table gives an indication on the bank's expected future stability and crisis resistance across maturities and rating agencies

The Crédit Mutuel (score 89) heads the league table, whereas the NIBC ranks 15th (score 15)

Rank	Trend H1 2019 vs. H2 2018	Bank	Country (HQ)	CDS 1Y				CDS 5Y				CDS 10Y				Rating		Total Score
				Price	Score	3Y Vol.	Score	Price	Score	3Y Vol.	Score	Price	Score	3Y Vol.	Score	Rating	Score	
1	↑	Crédit Mutuel	FR	8.9	13	3.3	15	36.1	12	4.2	15	53.3	13	6.1	14	6	7	89
2	↑	ING	NL	9.3	12	8.2	11	22.5	15	16.7	10	40.4	15	20.8	8	5	11	82
3	↓	Bayern LB	DE	14.4	8	6.7	13	40.6	11	15.3	12	67.0	11	15.7	11	4	13	79
4	↓	LBBW	DE	29.3	6	7.3	12	46.5	8	5.8	13	63.5	12	6.3	13	4	13	77
5	↓	DZ BANK	DE	30.9	5	6.5	14	65.8	6	5.4	14	77.0	9	5.3	15	4	13	76
6	→	BNP PARIBAS	FR	10.4	11	10.8	7	28.5	14	21.2	7	52.4	14	24.0	7	5	11	71
7	→	HSBC	UK	12.2	9	8.9	9	46.4	9	16.6	11	84.7	7	18.7	9	6	7	61
8	→	Santander	ES	7.4	14	15.6	5	34.9	13	33.6	4	69.7	10	37.7	4	6	7	57
9	↑	COMMERZBANK	DE	6.5	15	15.1	6	44.8	10	24.8	6	84.2	8	24.9	6	7	5	56
10	na	中國銀行 BANK OF CHINA	CN	11.5	10	8.3	10	55.7	7	25.6	5	99.6	5	25.2	5	6	7	49
11	↓	NORD/LB	DE	25.9	7	9.5	8	74.6	4	19.9	8	98.1	6	18.5	10	7	5	48
12	↓	Hamburg Commercial Bank	DE	54.6	1	15.7	4	121.7	1	17.2	9	161.1	1	14.8	12	9	1	29
13	↑	Deutsche Bank	DE	42.7	3	48.7	1	69.2	5	48.7	2	104.1	4	42.0	3	8	3	21
14	↓	UniCredit	IT	33.6	4	33.2	3	119.3	2	46.5	3	159.2	2	47.3	2	9	1	17
15	↓	NIBC	NL	45.7	2	42.0	2	94.2	3	55.5	1	105.4	3	58.0	1	8	3	15

5-YEAR CDS SPREADS



5-Year CDS Spreads

Overview & Historical Analysis

1 Since the turbulent years '09, '10 and '11, CDS spreads have trended downwards

2 Change in reference bonds of foreign banks from "non-preferred" to "preferred" led to sharp decline in CDS spreads

3 In H1 '19, the CDS spreads generally fallen back to the record lows seen in '17

4 Almost all selected banks show significant decreases in CDS spreads over the last twelve months, especially German banks (Commerzbank, Deutsche Bank), benefiting from regulatory changes regarding bond issuance that came into in May '19

German Institutions	10-Year Price Development (in bps)										3-Year Changes (in %)			Annual Volatility	Long-Term Ratings			
	31/12/2009	31/12/2010	31/12/2011	31/12/2012	31/12/2013	31/12/2014	31/12/2015	31/12/2016	31/12/2017	31/12/2018	30/06/2019	Δ 16-19	Δ 17-19	Δ 18-19	Last 90 Days	S&P	Moody's	Fitch
Bayern LB	107.2	193.0	289.5	94.6	101.0	77.2	75.8	68.6	32.9	38.3	40.6	-40.8%	23.2%	6.0%	1.9%	-	Aa3	A-
Commerzbank ¹	62.4	147.1	284.5	154.6	110.7	83.6	90.6	117.3	54.5	124.7	44.8	-61.8%	-17.8%	-64.1%	86.7%	A-	A1	A
Deutsche Bank ¹	77.0	105.4	194.2	95.2	84.3	79.7	96.5	162.3	72.4	204.6	69.2	-57.4%	-4.4%	-66.2%	106.1%	BBB+	A3	BBB+
DZ Bank	97.7	122.5	165.1	92.4	82.4	75.9	78.1	78.6	70.2	66.1	65.8	-16.3%	-6.3%	-0.5%	31.5%	AA-	Aa1	AA-
Hamburg Commercial	233.8	205.5	373.4	170.1	189.3	193.8	187.0	172.1	147.6	149.0	121.7	-29.3%	-17.6%	-18.4%	6.7%	-	Baa2	-
LBBW	123.7	159.5	287.2	96.6	80.8	61.4	64.8	50.0	36.6	38.8	46.5	-7.1%	27.1%	19.9%	30.9%	-	Aa3	A-
Nord LB	na	na	na	na	na	104.6	114.1	115.8	72.8	93.5	74.6	-35.6%	2.5%	-20.2%	6.6%	-	Baa2	A-
Min	62.4	105.4	165.1	92.4	80.8	61.4	64.8	50.0	32.9	38.3	40.6	-61.8%	-17.8%	-66.2%	1.9%	-	-	-
Max	233.8	205.5	373.4	170.1	189.3	193.8	187.0	172.1	147.6	204.6	121.7	-7.1%	27.1%	19.9%	106.1%	-	-	-
Median	102.5	153.3	285.9	95.9	92.7	79.7	90.6	115.8	70.2	93.5	65.8	-35.6%	-4.4%	-18.4%	30.9%	-	-	-
Mean	117.0	155.5	265.7	117.3	108.1	96.6	101.0	109.2	69.6	102.2	66.2	-35.5%	1.0%	-20.5%	38.6%	-	-	-

Foreign Institutions	10-Year Price Development (in bps)										3-Year Changes (in %)			Volatility	Long-Term Ratings			
	31/12/2009	31/12/2010	31/12/2011	31/12/2012	31/12/2013	31/12/2014	31/12/2015	31/12/2016	31/12/2017	31/12/2018	30/06/2019	Δ 16-19	Δ 17-19	Δ 18-19	90 Days	S&P	Moody's	Fitch
Bank of China	114.4	122.2	278.0	108.5	113.6	120.1	130.4	142.4	66.1	81.8	55.7	-60.9%	-15.8%	-31.9%	43.3%	A	-	A
BNP Paribas	60.1	114.5	259.0	137.0	83.3	69.6	70.8	85.6	22.5	73.0	28.5	-66.7%	26.9%	-61.0%	43.6%	A+	Aa3	AA-
Crédit Mutuel	5.0	108.9	318.6	150.1	109.1	64.8	41.9	24.0	26.5	40.6	36.1	50.2%	36.0%	-11.1%	18.5%	A	Aa3	A+
HSBC	78.0	99.4	153.4	93.5	65.4	52.1	83.1	81.2	35.3	91.3	46.4	-42.9%	31.4%	-49.2%	38.0%	A	A2	AA-
ING Bank	64.4	144.6	221.9	109.2	81.2	54.8	52.4	64.4	16.9	39.1	22.5	-65.1%	33.4%	-42.5%	33.7%	A+	Aa3	AA-
NIBC	240.2	220.4	458.0	272.5	271.2	178.6	159.8	182.0	70.0	91.7	94.2	-48.2%	34.6%	2.7%	38.8%	BBB+	-	A2
Santander	81.8	248.6	355.7	270.6	123.2	79.6	139.7	119.3	31.8	74.9	34.9	-70.7%	9.7%	-53.4%	37.8%	A	A2	A-
UniCredit	94.3	197.2	537.3	299.5	146.6	128.0	132.7	173.8	61.4	177.4	119.3	-31.4%	94.1%	-32.8%	36.4%	BBB	Baa1	BBB
Min	5.0	99.4	153.4	93.5	65.4	52.1	41.9	24.0	16.9	39.1	22.5	-70.7%	-15.8%	-61.0%	18.5%	-	-	-
Max	240.2	248.6	537.3	299.5	271.2	178.6	159.8	182.0	70.0	177.4	119.3	50.2%	94.1%	2.7%	43.6%	-	-	-
Median	79.9	133.4	298.3	143.6	111.4	74.6	106.8	102.4	33.6	78.3	41.2	-54.6%	32.4%	-37.6%	37.9%	-	-	-
Mean	92.3	157.0	322.7	180.1	124.2	93.4	101.3	109.1	41.3	83.7	54.7	-42.0%	31.3%	-34.9%	36.3%	-	-	-

All Institutions	10-Year Price Development (in bps)										3-Year Changes (in %)			Annual Volatility	Long-Term Ratings			
	31/12/2009	31/12/2010	31/12/2011	31/12/2012	31/12/2013	31/12/2014	31/12/2015	31/12/2016	31/12/2017	31/12/2018	30/06/2019	Δ 16-19	Δ 17-19	Δ 18-19	Last 90 Days	S&P	Moody's	Fitch
Min	5.0	99.4	153.4	92.4	65.4	52.1	41.9	24.0	16.9	38.3	22.5	-70.7%	-17.8%	-66.2%	1.9%	-	-	-
Max	240.2	248.6	537.3	299.5	271.2	193.8	187.0	182.0	147.6	204.6	121.7	50.2%	94.1%	19.9%	106.1%	-	-	-
Median	88.1	145.9	285.9	123.1	105.1	79.6	90.6	115.8	54.5	81.8	46.5	-42.9%	23.2%	-31.9%	36.4%	-	-	-
Mean	102.9	156.3	298.3	153.2	117.3	94.9	101.2	109.2	54.5	92.3	60.0	-38.9%	17.1%	-28.2%	37.4%	-	-	-

5-Year Govt. Interest Rates	10-Year Price Development (in bps)										3-Year Changes (in %)			Annual Volatility	Long-Term Ratings			
	31/12/2009	31/12/2010	31/12/2011	31/12/2012	31/12/2013	31/12/2014	31/12/2015	31/12/2016	31/12/2017	31/12/2018	30/06/2019	Δ 16-19	Δ 17-19	Δ 18-19	Last 90 Days	S&P	Moody's	Fitch
EU Central Government Bond	263.7	214.8	155.5	58.3	107.1	7.1	1.7	-47.3	-16.6	-26.3	-64.4	-36.1%	-288.3%	-145.1%	56.9%	AAA	Aaa	AAA
United Kingdom Government Debt	279.0	220.0	86.4	84.9	204.2	113.1	125.6	48.0	72.0	90.7	63.6	32.5%	-11.7%	-29.9%	55.4%	AAA	Aaa	AAA

¹ Regulatory changes in May '19 lower CDS spreads for commercial German banks as newly offered senior preferred bonds form reference CDS price (as already seen at foreign banks)

Source: S&P Capital IQ as of June 30th, 2019

Note: All calculations based on mid prices

5-Year CDS Spreads

Pricing, Rating, Volatility & Development

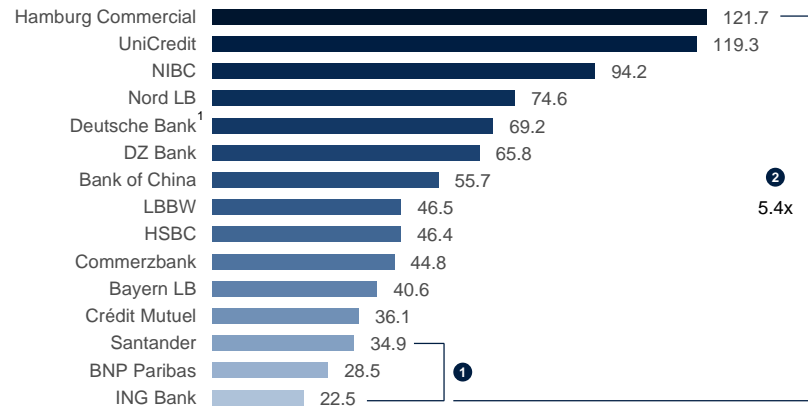
1 Based on the latest 5-year CDS spreads, the most solvent banks are the Dutch ING Bank, the French BNP Paribas and the Spanish Santander, with CDS spreads below 35 bps

2 The ratio between the least and most solvent bank is 5.4x (121.7 / 22.5), signalling a significant gap in the perceived medium-term solvency amongst the selected banks

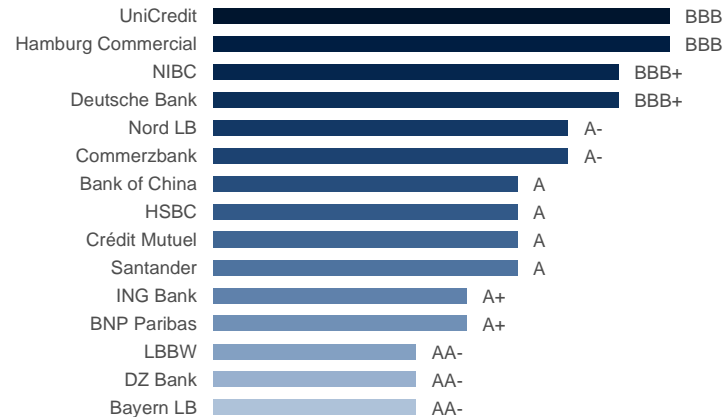
3 Only three banks experienced higher CDS spreads than 12 months prior

4 Overall, foreign banks exhibit higher levels of volatility in their CDS spreads over the last 90 days, discounting Deutsche Bank and Commerzbank

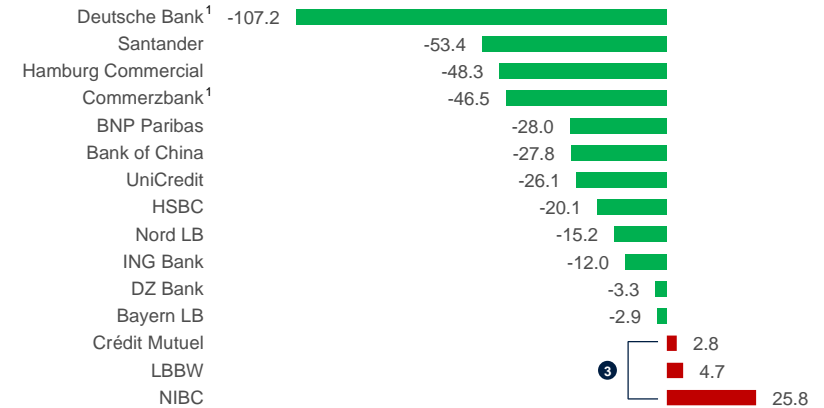
CDS Mid-Price as of 30/06/2019 (in bps)



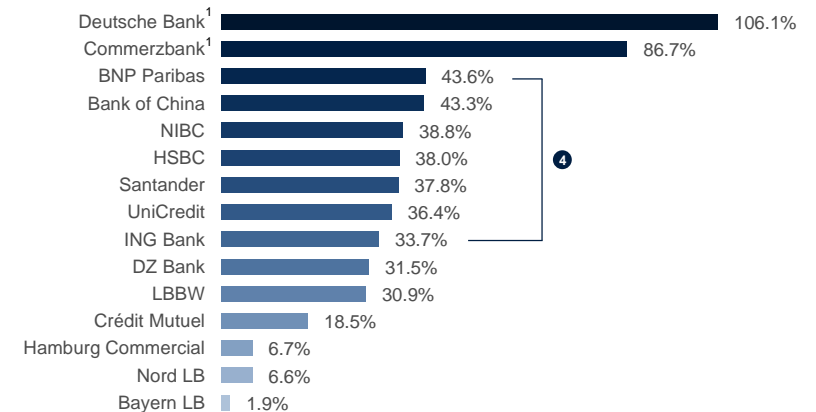
Long-Term Rating* as of 30/06/2019



1-Year Change in CDS Mid-Price (in bps)



Annual Volatility (Last 90 days) as of 30/06/2019



¹ Regulatory changes in May '19 lower CDS spreads for commercial German banks as newly offered senior preferred bonds form reference CDS price (as already seen at foreign banks)

Source: S&P Capital IQ as of June 30th, 2019

Note: All calculations based on mid prices, * S&P Rating notches (institutions without S&P Rating converted using best available Moody's or Fitch rating)

5-Year CDS Spreads

36 Month Spread Development of German vs. Foreign Institutions

German and foreign banks generally follow the same trend over the past 3 years

Mean and median CDS spreads have generally been lower for foreign banks, in particular since Q1 '17 (EU regulations)

Volatility remains consistent across both German and foreign banks over the 3 year period, exhibiting standard deviations (median) of 19 bps and 24 bps, respectively

Regulatory changes introduced in May '19 in Germany have led to sharp declines in CDS spreads for Deutsche Bank and Commerzbank and hence CDS spreads during 2019



5-Year CDS Spreads

36 Month Spread Development of German Institutions

Over the last 3 years, Deutsche Bank and Commerzbank were the most volatile German banks with standard deviations of 49 bps and 25 bps, respectively

DZ Bank and LBBW were the least volatile (standard deviations below 6 bps)

CDS spreads show significant improvements in Q1 and Q2 '19

The market perception of the performance of Deutsche Bank and Commerzbank in '18 caused the strong increase in CDS spreads



5-Year CDS Spreads

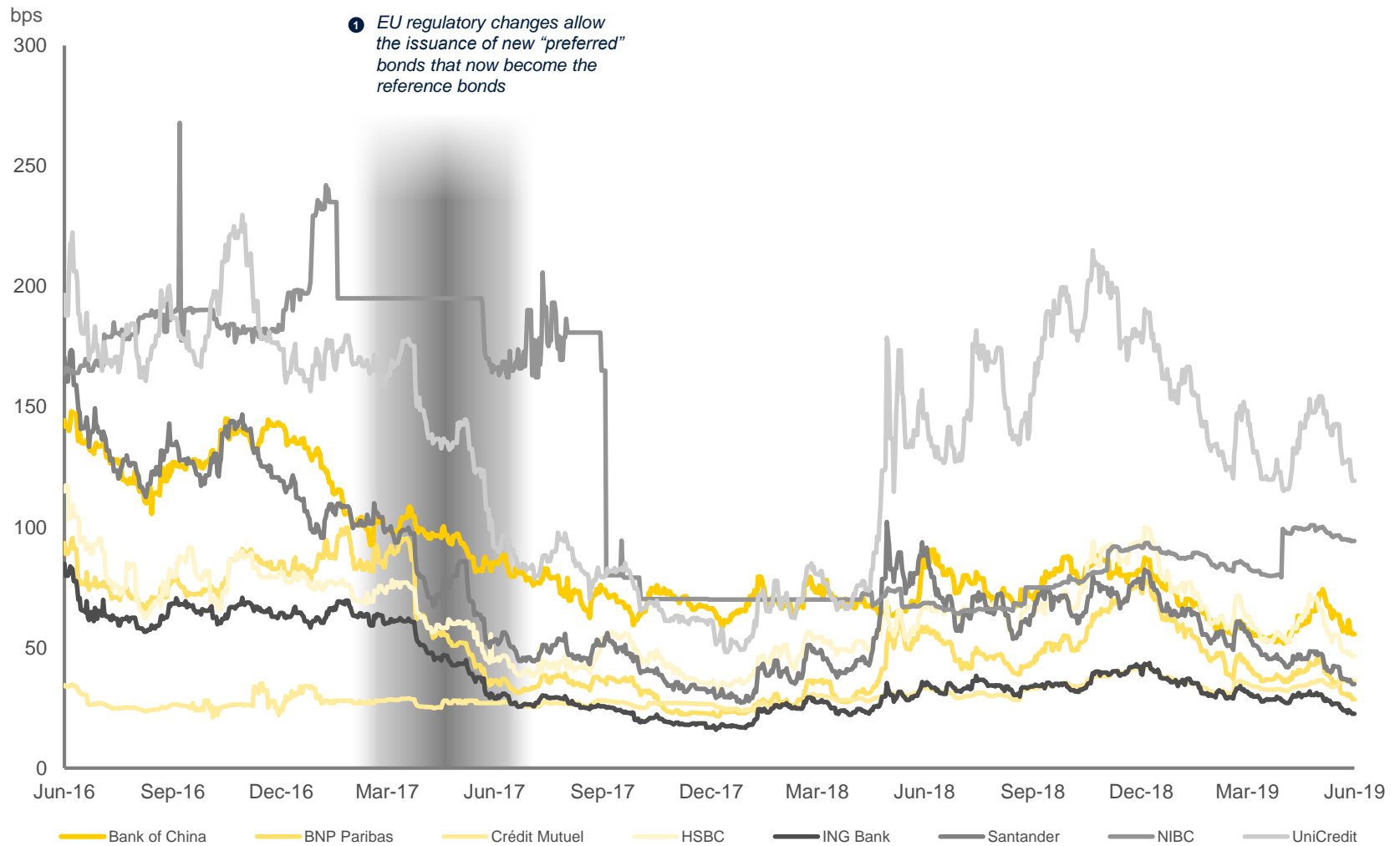
36 Month Spread Development of Foreign Institutions

Over the last 3 years, NIBC and UniCredit were the most volatile foreign banks with standard deviations of 56 bps and 47 bps, respectively

Crédit Mutuel and HSBC were the least volatile (standard deviations below 17 bps)

CDS spreads show significant improvements in Q1 and Q2 '19, except for those of the NIBC

The macro-economic situation in Italy, France and the UK in '18, led to a strong increase in CDS spreads



5-Year CDS Spreads

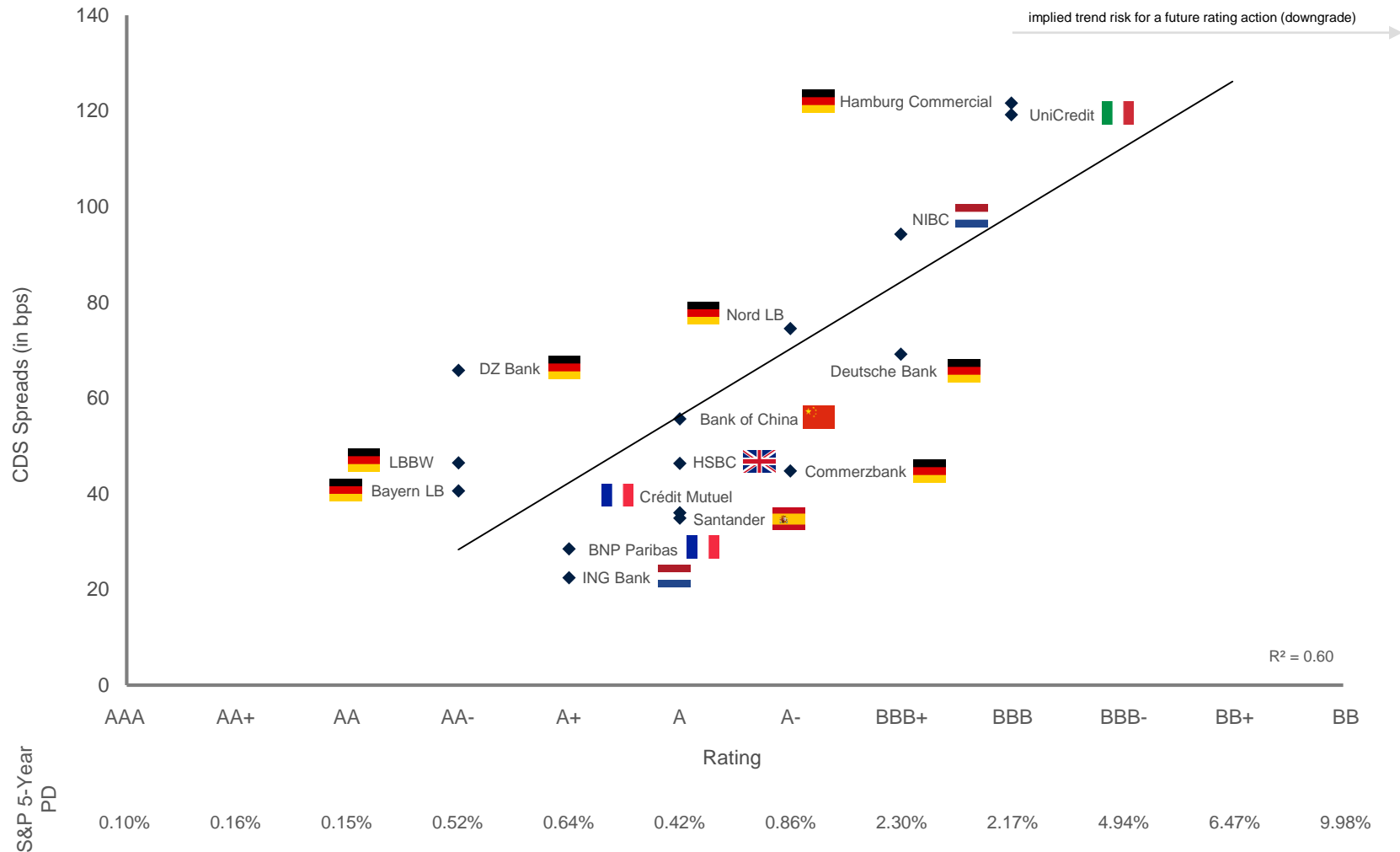
CDS vs. Rating for 5 Year Spreads

The comparison of current CDS spreads with current ratings, highlights the relationship between these forward- and backward-looking solvency indicators

A strong correlation exists between CDS spreads and rating (60% of the variation in CDS spreads can be explained via ratings)

The slope implies (on average) a 1-notch fall in rating would result in a higher 5-Year CDS price by approx. 14 bps

Banks above the trendline seem to possess greater solvency risk than their rating would imply; a possible indicator for a future rating "downgrade"



ANNEX
DEFINITIONS



Credit Default Swaps

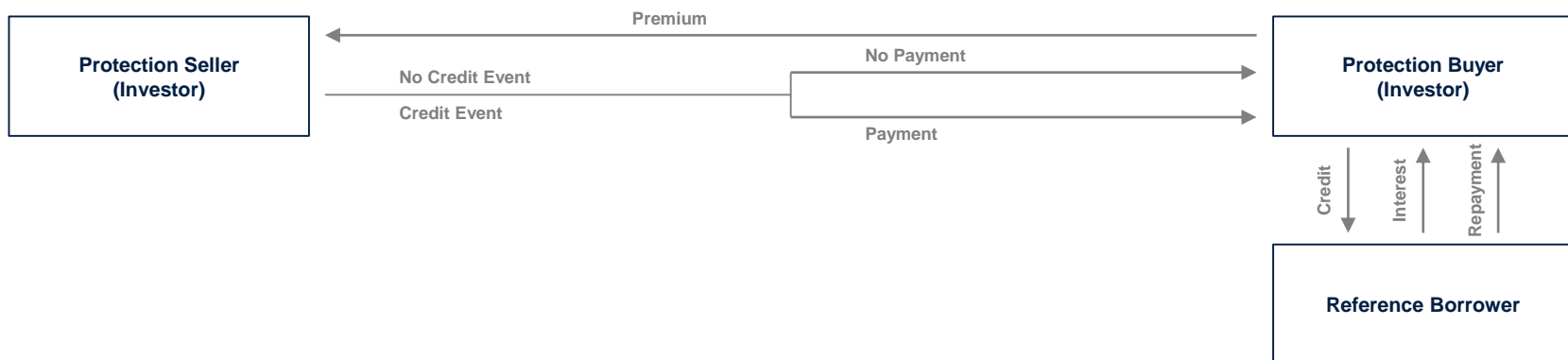
Credit Default Swaps (CDS) are, in simplest terms, very much like insurance policies. The main difference between a classical insurance policy and a CDS is that those buying the CDS can trade in and out of their contracts.

A CDS is a privately negotiated contract in which one party, the Protection Buyer (the one seeking to shed the risk, for example a lender to a bank), pays a fee (also premium or “spread”) to the Protection Seller (the one taking on the risk, for example specialized financial institutions) for protection against a loss that may be incurred from the exposure to a loan in case of unforeseen developments (e.g. non-repayment of / default on the loan). The development is known as a credit event, indicating that the borrower (the reference entity) on which the CDS contract is written is unable to pay its debts. If, such a credit event occurs, the Protection Seller will make a payment to the Protection Buyer of the contract.

For example: A typical contract provides for the Protection Buyer to pay the Protection Seller 500 bps per year (5.0% p.a.) for protection against a default of Bank A on its senior debt. The contract’s notional size is for EUR 10m. This means that the Protection Buyer pays EUR 500,000 per year (4 quarterly payments of EUR 125,000). If another bank, Bank B, has a CDS spread priced at 250 bps (2.5% p.a.), Bank B is perceived to have a lower credit risk than Bank A.

The higher the credit risk of a bank (as seen in the CDS spread), the greater the funding costs that a bank incurs will be. Funding costs represent rate at which the bank is able to borrow from the institutional / inter-bank market (funding cost risk premium). As a direct consequence, the funding cost risk premium has a direct impact on the rates that a bank will charge its clients: Bank B will be able to offer i) cheaper, longer financing conditions and ii) greater flexibility during periods of stress with their clients (corporates), ceteris paribus.

Aside from the direct impact on a banks’ lending rates, the CDS spread is also a good proxy of a banks’ current / future behavior towards its corporate clients in times of market (macro) or client specific (micro) volatility / stress.



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DISCLAIMER**

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