



Credit Risk **REPORT**

October 2017



BlackBee
INVESTMENTS



About this Report

The Credit Risk Report is published on a monthly basis and contains information about the credit quality of a selection of institutions and sovereigns.

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Introduction

Credit risk is the risk that an entity (a bank, financial institution or other corporate entity) which promises to return your capital at a future date may not be able to do so as set out at the beginning of the investment. All investments carry some element of credit risk. Understanding credit risk is an important step to take when assessing the suitability and appropriateness of an investment.

In terms of assessing credit risk there are a number of methods available including:

Fundamental, long term and more stable measures such as:

1. Credit Ratings
2. Capitalisation Ratios
3. Liquidity Ratios
4. Analyst Ratings

Shorter and more volatile technical measures include:

5. Credit Default Swaps (CDS)
6. Default Probability Models

The difference between the 2 approaches is that the former can be considered on a stand alone basis whereas the latter should only be used in conjunction with the former or as a reference point to some suitable metric

Credit Ratings

The below table is a guide that provides an explanation of the different credit rating categories by the three main credit rating agencies.

Studies from credit rating agencies show that higher credit ratings are consistent with fewer defaults. Additionally investment grade rated issuers tend to exhibit greater rating stability when compared to speculative grade issuers. Higher credit rated issuers also take a longer time to default whereas issuers with lower initial ratings generally take less time to default from their initial rating. It is only when looking at longer time periods that companies with higher original ratings show up among the list of defaulters.

Debt Categories	Fitch	Moody's	S&P	Credit Rating Agency Opinion	
Investment Grade Securities and Issuers that are viewed as suitable debt investments for market investors. In general terms it is used to broadly identify categories of debt and issuers with relatively high levels of creditworthiness and credit quality.	AAA	Aaa	AAA	Extremely strong capacity to meet financial commitments	
	AA+	Aa1	AA+	Very strong capacity to meet financial commitments	
	AA	Aa2	AA		
	AA-	Aa3	AA-	Strong capacity to meet financial commitments, but somewhat susceptible to adverse economic conditions and changes in circumstances	
	A+	A1	A+		
	A	A2	A		
BBB+	Baa1	BBB+	Adequate capacity to meet financial commitments, but maybe more subject to adverse economic conditions		
BBB	Baa2	BBB			
BBB-	Baa3	BBB-	Considered lowest investment grade by market participants		
Non-Investment Grade Securities and Issuers that are considered to have an ability to repay debt but face high levels of uncertainty which could increase the likelihood of default or a general failure to meet its debt and repayment obligations.	BB+	Ba1	BB+	Considered highest non-investment grade by market participants	
	BB	Ba2	BB	Less vulnerable in the near term but faces major ongoing uncertainties to adverse business, financial and economic conditions	
	BB-	Ba3	BB-		
	B+	B1	B+	More vulnerable to adverse business, financial and economic conditions but currently has the capacity to meet financial commitments	
	B	B2	B		
	CCC		Caa1	CCC+	Currently vulnerable and dependent on favourable business, financial and economic conditions to meet financial commitments
			Caa2	CCC	
			Caa3	CCC-	
			CC	Currently highly vulnerable	
		Ca		A bankruptcy petition has been filed or similar action taken, but payment of financial commitments are continued	
			C		
DDD	C	D		Payment default on financial commitments	
DD					
D					

Source: BlackBee, Fitch, Moody's, S&P

Note: This overview is provided for guidance purposes only and does not purport to be a definitive guide. For further details and explanations please visit the websites of the credit rating agencies we have listed: www.fitchratings.com; www.moodys.com; www.standardandpoors.com

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Credit Ratings

A credit rating is an opinion of creditworthiness based on a particular credit rating agency's analysis (in this report on Long-Term credit ratings, Long-Term Outlook and Senior Unsecured Debt). Credit ratings are meant to be forward looking and factor in conditions that are likely to affect credit risk, however they are not precise probabilities of default. The higher the credit rating the less likely the ratings agency considers that entity to default or renege on its financial commitments.

A number of global credit rating agencies exist which provide a credit rating to institutions which can help investors understand how different entities compare in terms of credit quality. While there are many credit rating agencies, some carry more weight as they are used by a wider selection of market participants on a day to day basis – these include Fitch, Moody's and S&P. All provide ratings with a letter designation, such as A+, BBB, C etc. Ratings are arranged in a descending order with AAA the highest rating. Rating outlooks (positive, stable, negative) were introduced to give market participants a potential leading indicator as to the direction of any credit changes. It is normal to expect more frequent changes to lower credit rated institutions than higher ones however this may not be the case. In forming their opinions of creditworthiness, each rating agency will use different methodologies in their analysis so it can be useful to compare credit ratings of different agencies. Credit ratings are not static and can change over time or as and when events change.

Institution	S&P Long-Term	Moody's Long-Term	Fitch Long-Term	S&P Outlook Long-Term	Moody's Outlook Long-Term	Fitch Outlook Long-Term	Moody's Senior Unsecured Debt	Fitch Senior Unsecured Debt
Allied Irish Banks Plc	BBB-	n/a	BB+	STABLE	STABLE	POS	Baa2	BB+
Banco Santander Sa	A-	n/a	A-	STABLE	STABLE	STABLE	(P)A3	A-
Bank Of America Corp	BBB+	n/a	A	STABLE	n/a	STABLE	Baa1 *+	A
Bank Of Ireland	BBB	n/a	BBB-	STABLE	POS	POS	Baa1	BBB-
Exane Sa	BBB+	Baa2	n/a	STABLE	STABLE	n/a	n/a	n/a
Bnp Paribas	A	n/a	A+	STABLE	STABLE	STABLE	Aa3	A+
Citigroup Inc	BBB+	n/a	A	STABLE	STABLE	STABLE	Baa1	A
Commerzbank Ag	A-	n/a	BBB+	NEG	STABLE	STABLE	Baa1	BBB+
Credit Agricole Sa	A	n/a	A+	STABLE	STABLE	STABLE	A1	A+
Credit Suisse Group Ag-Reg	BBB+	n/a	A-	STABLE	STABLE	STABLE	(P)Baa2	A-
Depfa Bank Plc	A-	n/a	WD	STABLE	STABLE	n/a	Baa2	WD
Deutsche Bank Ag-Registered	A-	n/a	BBB+	NEG	STABLE	STABLE	Baa2	BBB+
Dexia Credit Local	BBB	n/a	BBB+	STABLE	STABLE	STABLE	Baa3	BBB+
Ebs Dac	n/a	n/a	BB+	n/a	STABLE	POS	WR	BB+
Efg Bank Ag	n/a	n/a	A	n/a	STABLE	NEG	n/a	n/a
Efg International Ag	n/a	A3	A	n/a	STABLE	NEG	n/a	n/a
Erste Group Bank Ag	A-	n/a	A-	POS	POS	STABLE	A3	A-
Hsbc Holdings Plc	A	n/a	AA-	NEG	NEG	STABLE	A2	AA-
Investec Plc	n/a	n/a	n/a	n/a	POS	n/a	Baa1	n/a
Kbc Groep Nv	BBB+	n/a	A	STABLE	STABLE	STABLE	Baa1	A
Morgan Stanley	BBB+	n/a	A	STABLE	STABLE	STABLE	A3	A
Natixis	A	n/a	A	STABLE	POS	STABLE	A2	A
Nomura Holdings Inc	A-	n/a	A-	NEG	STABLE	STABLE	Baa1	A-
Permanent Tsb Plc	BB	n/a	n/a	POS	POS	n/a	Ba3	n/a
Raiffeisen Bank Internationa	BBB+	n/a	WD	POS	STABLE	n/a	Baa1	n/a
Raiffeisen Schweiz	n/a	n/a	n/a	n/a	STABLE	n/a	A2	n/a
Royal Bank Of Canada	AA-	n/a	AA	NEG	NEG	NEG	A1	AA
Royal Bank Of Scotland Group	BBB-	n/a	BBB+	STABLE	STABLE	STABLE	Baa3	BBB+
Societe Generale Sa	A	n/a	A	STABLE	STABLE	STABLE	A2	A
Standard Chartered Plc	BBB+	n/a	A+	STABLE	STABLE	STABLE	A2	A+
Ubs Group Ag-Reg	A-	n/a	A+	STABLE	STABLE	STABLE	n/a	n/a
Ulster Bank Ireland Dac	BBB	n/a	BBB	STABLE	STABLE	STABLE	WR	BBB
Unicredit Spa	BBB-	n/a	BBB	STABLE	STABLE	STABLE	Baa1	BBB
Assured Guaranty Corp	AA	n/a	n/a	STABLE	STABLE	n/a	n/a	n/a
Mbia Inc	BBB	n/a	NR	STABLE	NEG	n/a	Ba1	NR
Progressive Corp	A	n/a	A+	STABLE	STABLE	STABLE	A2	A
Travelers Cos Inc/The	A	n/a	A+	STABLE	STABLE	STABLE	A2	A
Ryanair Holdings Plc	BBB+	n/a	BBB+	STABLE	n/a	STABLE	n/a	n/a
Dell Inc	NR	n/a	BB+	n/a	STABLE	STABLE	Ba2	BB
Kerry Group Plc-A	BBB+	n/a	n/a	STABLE	STABLE	n/a	n/a	n/a
Vale Sa-Pref	BBB-	WR	BBB	POS	STABLE	NEG	Ba1	BBB
Pfizer Inc	AA	n/a	A+	STABLE	STABLE	NEG	A1	A+
Rio Tinto Plc	A-	n/a	A-	POS	STABLE	STABLE	n/a	A-

Source: BlackBee, Bloomberg

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Assessing Credit Risk



Methodology: This table is based on a composite (average) credit rating by assigning a ranking score to a credit rating issued by a rating agency.

Legend: AIB=Allied Irish Banks Plc; SAN=Banco Santander Sa; BOA=Bank Of America Corp; BKIR=Bank Of Ireland; EXANE=Exane Sa; BNP=Bnp Paribas; C=Citigroup Inc; CBK=Commerzbank Ag; CA=Credit Agricole Sa; CS=Credit Suisse Group Ag-Reg; DB=Deutsche Bank Ag-Registered; EBS=Ebs Dac; EFGI=Efg International Ag; HSBC=Hsbc Holdings Plc; INVES=Investec Plc; KBC=Kbc Groep Nv; MS=Morgan Stanley; NAT=Natixis; NOM=Nomura Holdings Inc; PTSB=Permanent Tsb Plc; RBI=Raiffeisen Bank Internationa; RSC=Raiffeisen Schweiz; RBC=Royal Bank Of Canada; RBS=Royal Bank Of Scotland Group; SG=Societe Generale Sa; STAN=Standard Chartered Plc; UNI=Unicredit Spa; MBIA*=Mbia Inc;

Source: BlackBee, Bloomberg

Tier 1 Capital Ratio: A bank's capital position is a measure of its ability to withstand against unexpected losses. A bank's capital is often defined in tiers or categories with Tier 1 and Core Tier 1 being the most commonly cited and is usually the ratio of the bank's equity capital to its total risk-weighted assets.

Investment Grade: Securities and issuers that are viewed as suitable debt investments for market investors. In general terms it is used to broadly identify categories of debt and issuers with relatively high levels of creditworthiness and credit quality.

Non-Investment Grade: Securities and issuers that are considered to have an ability to repay debt but face high levels of uncertainty which could increase the likelihood of default or a general failure to meet its debt and repayment obligations.

Historical Default Rates: Historical Default Rates show the historical average default rate by rating category over various investment horizons. The underlying data is sourced from the major rating agency default studies and is based on actual defaults. Although historical default rates should not be relied upon as fact for a given institution, these studies can provide useful proxies for expected default rates in the future, for a given credit rating and investment horizon.

Historic Default Sources:

Standard and Poors 2014 Annual Global Corporate Default Study And Rating Transitions - Global Corporate Average Cumulative Default Rates By Rating Modifier (1981-2014);

Moody's Investor Services Corporate Default and Recovery Rates, 1920-2010 - Average Cumulative Issuer-Weighted Global Default Rates by Alphanumeric Rating, 1983-2010

Methodology applied: Average of the data points for a given credit rating and investment horizon.

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Warning: These figures are estimates only. They are not a reliable guide to the future performance of your investment.

Bank Capitalisation

A bank's capital position is a measure of its ability to withstand against unexpected losses, with the greatest capital requirements relating to credit risk. Much of a bank's activities are funded either from customer deposits or other forms of borrowing that must be repaid in full. If a bank is funding its activities without any of its own capital, in the event of any losses, the bank would not be able to repay borrowers. However, with bank capital, when a loss does occur, the bank simply suffers a decrease in its capital base and continues to remain solvent. Ideally banks should hold enough capital to absorb losses in stressed market conditions and continue their business functions.

Bank capital is often defined in tiers or categories with Tier 1 and Core Tier 1 (Common Equity Tier 1) being the most commonly cited. The Core Tier 1 is the best of the best and is the ratio of the bank's equity capital (ordinary shares and retained earnings) to its total risk-weighted assets. The higher the Tier 1 capital ratio the better capitalised a bank is considered to be. On top of minimum capital requirements, regulators also require certain banks to have capital buffers which are being phased in over time. In addition to capitalisation ratios, the Leverage Ratio can be used to assess the risk of excessive leverage or debt. A high leverage ratio (i.e. a low amount of capital to total assets - an asset of a bank would include a loan) is riskier, as a bank has less capital to absorb losses. Taken in tandem with a bank's capital position it can provide a clearer picture of financial strength. Current central bank requirements for Tier 1 Capital Ratios are 4.5%-6%. Basel III requirements (due to take effect in 2019) will require a Tier 1 Capital Ratio of 7%-9.5% (depending on risk weighted adjustments).

Institution	Tier 1 Capital Ratio	Leverage Ratio
Allied Irish Banks Plc	19.9%	4.1%
Banco Santander Sa	12.5%	5.7%
Bank Of America Corp	13.6%	5.2%
Bank Of Ireland	n/a	n/a
Exane Sa	n/a	n/a
Bnp Paribas	12.9%	6.1%
Citigroup Inc	15.8%	5.0%
Commerzbank Ag	13.9%	6.4%
Credit Agricole Sa	15.1%	4.7%
Credit Suisse Group Ag-Reg	18.0%	6.4%
Depfa Bank Plc	65.3%	1.0%
Deutsche Bank Ag-Registered	15.6%	5.5%
Dexia Credit Local	12.6%	12.8%
Ebs Dac	n/a	n/a
Efg Bank Ag	n/a	n/a
Efg International Ag	18.2%	5.5%
Erste Group Bank Ag	13.4%	6.2%
Hsbc Holdings Plc	16.1%	4.7%
Investec Plc	11.5%	2.8%
Kbc Groep Nv	17.8%	5.0%
Morgan Stanley	19.0%	4.6%
Natixis	12.3%	5.5%
Nomura Holdings Inc	19.2%	4.9%
Permanent Tsb Plc	14.2%	6.5%
Raiffeisen Bank Internationa	13.9%	6.5%
Raiffeisen Schweiz	16.5%	6.4%
Royal Bank Of Canada	12.3%	6.3%
Royal Bank Of Scotland Group	17.7%	4.6%
Societe Generale Sa	14.5%	5.4%
Standard Chartered Plc	15.7%	5.5%
Ubs Group Ag-Reg	19.7%	4.2%
Ulster Bank Ireland Dac	29.8%	3.2%
Unicredit Spa	9.0%	9.0%

Source: BlackBee, Bloomberg

"n/a" shows data not available, or not available from Bloomberg. n/a-not applicable to Assured Guaranty

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Bank Liquidity

A banks liquidity position is a measure of its ability to meet near term financial obligations such as withdrawals from depositors or investors. Because there is often a maturity mismatch between a banks funding and their activities, banks are vulnerable to sudden withdrawals by depositors or investors. To reduce liquidity risk, banks can seek to either attract stable sources of funding or hold a buffer of high quality liquid assets such as government bonds or cash. Liquidity can be measured by two new liquidity ratios, the Liquidity Coverage Ratio and the Net Stable Funding Ratio. These are being finalised/phased in over a number of years.

The Net Stable Funding Ratio (NSFR) is designed to ensure banks hold a minimum amount of stable funding over a one year horizon. It is calculated by dividing a bank's available stable funding (e.g. deposits) by its required stable funding (i.e. the amount of stable funding required to support various assets such as mortgages). The ratio must always be greater than 100%. The Liquidity Coverage Ratio (LCR) is designed to ensure banks hold sufficient liquid assets so they can survive a short term liquidity crisis of 30 days. The minimum requirement is 60% coverage by 2015 and 100% by 2019 so they can meet their cash outflows over a stressed period. In addition to the above ratios, Loans to Deposits is a widely used measure of liquidity. A high ratio of loans to deposits may suggest a vulnerable funding profile. However this measure excludes certain forms of stable funding such as long term debt.

Institution	Net Stable Funding Ratio	Liquidity Coverage Ratio	Loan to Deposit Ratio	Sub Industry
Allied Irish Banks Plc	119.0%	128.0%	103.7%	Diversified Banks
Banco Santander Sa	n/a	146.0%	125.7%	Diversified Banks
Bank Of America Corp	n/a	n/a	72.6%	Diversified Banks
Bank Of Ireland	n/a	n/a	n/a	Diversified Banks
Exane Sa	n/a	n/a	n/a	#N/A Field Not Applicable
Bnp Paribas	n/a	123.0%	101.5%	Diversified Banks
Citigroup Inc	n/a	121.0%	70.3%	Diversified Banks
Commerzbank Ag	n/a	n/a	83.7%	Diversified Banks
Credit Agricole Sa	n/a	n/a	68.4%	Diversified Banks
Credit Suisse Group Ag-Reg	n/a	202.0%	77.8%	Diversified Capital Markets
Depfa Bank Plc	n/a	n/a	152.7%	n/a
Deutsche Bank Ag-Registered	n/a	128.0%	75.1%	Diversified Capital Markets
Dexia Credit Local	n/a	n/a	1103.0%	n/a
Ebs Dac	n/a	n/a	n/a	n/a
Efg Bank Ag	n/a	n/a	n/a	n/a
Efg International Ag	n/a	n/a	57.8%	Asset Management & Custody Ban
Erste Group Bank Ag	n/a	142.6%	98.1%	Diversified Banks
Hsbc Holdings Plc	n/a	136.0%	68.3%	Diversified Banks
Investec Plc	n/a	n/a	78.2%	Diversified Capital Markets
Kbc Groep Nv	125.0%	139.0%	87.7%	Diversified Banks
Morgan Stanley	n/a	n/a	40.7%	Investment Banking & Brokerage
Natixis	n/a	n/a	241.0%	Diversified Capital Markets
Nomura Holdings Inc	n/a	n/a	273.7%	Investment Banking & Brokerage
Permanent Tsb Plc	n/a	n/a	151.3%	n/a
Raiffeisen Bank Internationa	n/a	184.0%	98.6%	Diversified Banks
Raiffeisen Schweiz	n/a	n/a	109.6%	n/a
Royal Bank Of Canada	n/a	127.0%	69.1%	Diversified Banks
Royal Bank Of Scotland Group	121.0%	123.0%	92.5%	Diversified Banks
Societe Generale Sa	n/a	142.0%	110.7%	Diversified Banks
Standard Chartered Plc	n/a	n/a	69.7%	Diversified Banks
Ubs Group Ag-Reg	116.0%	132.0%	72.4%	Diversified Capital Markets
Ulster Bank Ireland Dac	n/a	n/a	116.1%	n/a
Unicredit Spa	n/a	132.0%	114.0%	Diversified Banks

Source: BlackBee, Bloomberg

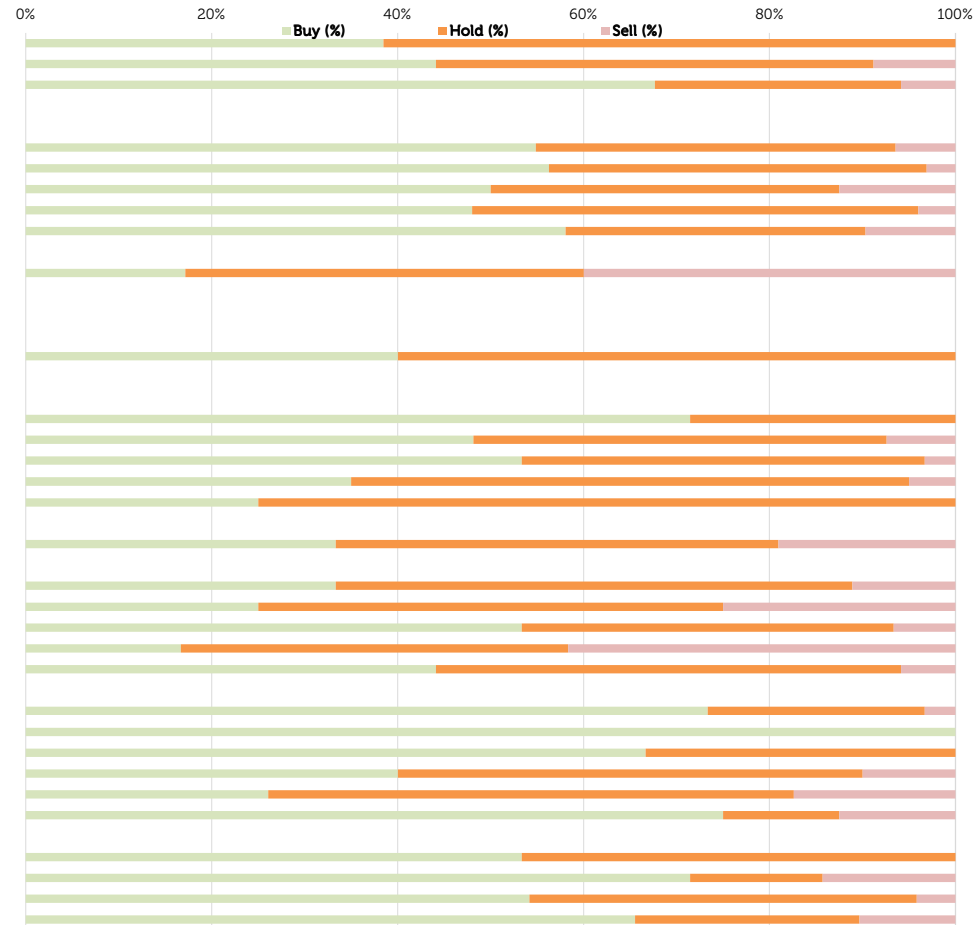
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Analyst Ratings

Analyst Ratings are analyst recommendations from various banks and financial institutions around the world for a selected bank. Bloomberg also provides 12m Consensus Target Price in local currency (Target Px).

Bank Name	Buy (%)	Hold (%)	Sell (%)	Total Analysts	Target Px	Current Px
Allied Irish Banks Plc	38%	62%	n/a	13	5.09	5.06
Banco Santander Sa	44%	47%	9%	34	6.10	5.74
Bank Of America Corp	68%	26%	6%	34	27.00	25.63
Bank Of Ireland	n/a	n/a	n/a	n/a	n/a	n/a
Exane Sa	n/a	n/a	n/a	0	n/a	111.09
Bnp Paribas	55%	39%	6%	31	72.31	68.09
Citigroup Inc	56%	41%	3%	32	74.07	73.34
Commerzbank Ag	50%	38%	13%	8	10.42	5.16
Credit Agricole Sa	48%	48%	4%	25	15.61	15.34
Credit Suisse Group Ag-Reg	58%	32%	10%	31	15.74	15.31
Depfa Bank Plc	n/a	n/a	n/a	0	n/a	n/a
Deutsche Bank Ag-Registered	17%	43%	40%	35	14.57	14.42
Dexia Credit Local	n/a	n/a	n/a	0	n/a	n/a
Ebs Dac	n/a	n/a	n/a	0	n/a	n/a
Efg Bank Ag	n/a	n/a	n/a	0	n/a	n/a
Efg International Ag	40%	60%	n/a	10	7.40	8.28
Erste Group Bank Ag	n/a	n/a	n/a	0	n/a	n/a
Hsbc Holdings Plc	n/a	n/a	n/a	0	n/a	n/a
Investec Plc	71%	29%	n/a	7	623.91	547.00
Kbc Groep Nv	48%	44%	7%	27	72.89	71.60
Morgan Stanley	53%	43%	3%	30	49.96	48.44
Natixis	35%	60%	5%	20	6.69	6.70
Nomura Holdings Inc	25%	75%	n/a	12	728.33	632.80
Permanent Tsb Plc	n/a	n/a	n/a	n/a	n/a	n/a
Raiffeisen Bank Internationa	33%	48%	19%	21	25.30	28.14
Raiffeisen Schweiz	n/a	n/a	n/a	0	n/a	n/a
Royal Bank Of Canada	33%	56%	11%	18	102.60	96.84
Royal Bank Of Scotland Group	25%	50%	25%	24	273.61	267.40
Societe Generale Sa	53%	40%	7%	30	54.04	49.40
Standard Chartered Plc	17%	42%	42%	24	721.89	746.10
Ubs Group Ag-Reg	44%	50%	6%	34	18.89	17.07
Ulster Bank Ireland Dac	n/a	n/a	n/a	0	n/a	n/a
Unicredit Spa	73%	23%	3%	30	19.56	17.95
Assured Guaranty Ltd	100%	n/a	n/a	3	51.00	37.77
Mbia Inc	67%	33%	n/a	3	12.67	8.61
Progressive Corp	40%	50%	10%	20	48.50	48.68
Travelers Cos Inc/The	26%	57%	17%	23	126.63	122.49
Ryanair Holdings Plc	75%	13%	13%	24	19.48	16.68
Dell Inc	n/a	n/a	n/a	0	n/a	n/a
Kerry Group Plc-A	53%	47%	n/a	15	82.92	82.07
Vale Sa-Pref	71%	14%	14%	7	37.65	29.52
Pfizer Inc	54%	42%	4%	24	37.88	35.76
Rio Tinto Plc	66%	24%	10%	29	3903.21	3533.50



Source: BlackBee, Bloomberg
 "n/a" shows data not available from Bloomberg

Target Price is below Current Price
 Target Price is above Current Price

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Credit Default Swaps (CDS)

Credit Default Swaps (CDS) are a type of insurance contract that is bought and sold by market participants (asset managers, pension funds, banks etc.) to help allocate and manage their credit risk exposure. These market participants typically hold assets of a company or wish to hold debt/bonds of a company and rather than buying and selling company securities they buy and sell CDS on the company to replicate the risk they wish to take. Buying and selling CDS is typically a quicker, cheaper and more efficient method to manage credit risk. CDS trading is the single largest constituting part of the global credit market. CDS are quoted in terms of basis points (bps) – a quote of 400bps on the 5 year debt/bond of a company means it costs \$40,000 per annum to insure against a default of \$1,000,000 of that company debt/bond.

CDS trading is a bilateral agreement which means that the CDS market can at times be extremely volatile and often illiquid.

Additionally, despite the depth of the CDS market, not all entities will have a CDS. This is due to either the entity not having enough debt/bonds to insure against or its existing debt/bonds being considered of too illiquid nature. Investors should not use CDS in isolation or representative of a default. Investors should note that professional market participants do not solely use this model for determining default probabilities. Rather it conveys information as to the relative 'richness' or 'cheapness' of a credit.

Institution	5y Model CDS	5y Market CDS	1m Change	3m Change	1y Change
Allied Irish Banks Plc	94.0	n/a	n/a	n/a	n/a
Banco Santander Sa	92.0	51.6	8.8%	-0.1%	-61.9%
Bank Of America Corp	54.0	48.8	-11.6%	-0.2%	-43.7%
Bank Of Ireland	123.0	55.0	-2.7%	-14.7%	-65.6%
Exane Sa	61.0	n/a	n/a	n/a	n/a
Bnp Paribas	49.0	35.4	-2.7%	0.7%	-54.3%
Citigroup Inc	61.0	48.6	-11.3%	-4.7%	-43.9%
Commerzbank Ag	53.0	71.1	-0.5%	1.2%	-45.7%
Credit Agricole Sa	52.0	32.7	6.0%	-1.1%	-56.6%
Credit Suisse Group Ag-Reg	61.0	68.8	-3.2%	3.6%	-52.0%
Depfa Bank Plc	115.0	254.7	-0.2%	-0.1%	-10.6%
Deutsche Bank Ag-Registered	51.0	88.2	0.7%	10.1%	-62.1%
Dexia Credit Local	108.0	136.0	0.4%	6.6%	-32.0%
Ebs Dac	n/a	n/a	n/a	n/a	n/a
Efg Bank Ag	n/a	n/a	n/a	n/a	n/a
Efg International Ag	55.0	n/a	n/a	n/a	n/a
Erste Group Bank Ag	44.0	65.3	-7.4%	-20.8%	-47.2%
Hsbc Holdings Plc	71.0	53.4	n/a	n/a	n/a
Investec Plc	183.0	n/a	n/a	n/a	n/a
Kbc Groep Nv	40.0	n/a	n/a	n/a	n/a
Morgan Stanley	93.0	59.3	-8.5%	-3.8%	-39.6%
Natixis	53.0	37.4	-0.1%	-6.7%	-53.0%
Nomura Holdings Inc	64.0	42.0	11.4%	2.4%	-36.9%
Permanent Tsb Plc	n/a	n/a	n/a	n/a	n/a
Raiffeisen Bank Internationa	47.0	90.0	-14.9%	-5.4%	-42.2%
Raiffeisen Schweiz	n/a	n/a	n/a	n/a	n/a
Royal Bank Of Canada	57.0	n/a	n/a	n/a	n/a
Royal Bank Of Scotland Group	80.0	50.5	-2.6%	8.3%	-63.3%
Societe Generale Sa	53.0	37.2	-1.6%	1.7%	-51.9%
Standard Chartered Plc	76.0	n/a	n/a	n/a	n/a
Ubs Group Ag-Reg	51.0	50.5	9.6%	n/a	n/a
Ulster Bank Ireland Dac	n/a	50.5	-2.6%	8.3%	-63.3%
Unicredit Spa	95.0	77.9	-14.8%	-13.7%	-58.7%
Assured Guaranty Corp	n/a	181.0	n/a	n/a	n/a
Mbia Inc	146.0	525.0	n/a	n/a	n/a
Progressive Corp	40.0	46.5	6.4%	3.5%	-27.0%
Travelers Cos Inc/The	44.0	56.9	25.5%	22.0%	9.4%
Ryanair Holdings Plc	87.0	n/a	n/a	n/a	n/a
Dell Inc	417.0	225.1	-5.4%	-20.7%	-33.3%
Kerry Group Plc-A	59.0	n/a	n/a	n/a	n/a
Vale Sa-Pref	257.0	182.3	0.5%	-58.8%	-58.4%
Pfizer Inc	25.0	24.5	-2.6%	1.1%	-23.4%
Rio Tinto Plc	67.0	64.9	3.7%	-26.7%	-46.3%

Source: BlackBee, Bloomberg

"n/a" shows data not available, or not available from Bloomberg

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Other Measures of Credit Risk

There are a number of default probability models which utilise market data to derive probability of default of an entity. One such model is the Bloomberg Issuer Default Risk Model. The model does not use credit market variables such as bond yields or CDS, instead it is an equity market based view of default risk. It calculates the probability of default on the basis that the value of a company's assets will fall below the value of its liabilities. In addition to market data and balance sheet fundamentals, the model also includes companies' income statements. Investors should note the inherent short term and therefore potentially volatile nature of these models and measures and they should only be considered in conjunction with longer term and more stable measures. Investors should note that professional market participants do not solely use this model for determining default probabilities. Rather it conveys information as to the relative 'richness' or 'cheapness' of a credit.

Institution	6 Mth Cumulative Default Probability	1 Yr Cumulative Default Probability	3 Yr Cumulative Default Probability	5 Yr Cumulative Default Probability	5 Yr Annualised Default Probability ((1+5 Yr Cumulative Default Probability)^(1/5)-1)
Allied Irish Banks Plc	0.07%	0.24%	1.35%	2.28%	0.45%
Banco Santander Sa	0.03%	0.13%	0.94%	1.78%	0.35%
Bank Of America Corp	0.00%	0.02%	0.51%	1.85%	0.37%
Bank Of Ireland	0.03%	0.13%	1.01%	1.87%	0.37%
Exane Sa	0.06%	0.21%	1.19%	2.19%	0.43%
BNP Paribas	0.07%	0.22%	1.19%	2.07%	0.41%
Citigroup Inc	0.00%	0.03%	0.62%	2.13%	0.42%
Commerzbank Ag	0.11%	0.34%	1.49%	2.40%	0.48%
Credit Agricole Sa	0.11%	0.32%	1.40%	2.31%	0.46%
Credit Suisse Group Ag-Reg	0.07%	0.21%	0.76%	1.13%	0.23%
Depfa Bank Plc	0.06%	0.22%	1.20%	2.20%	0.44%
Deutsche Bank Ag-Registered	0.09%	0.29%	1.33%	2.23%	0.44%
Dexia Credit Local	n/a	0.37%	n/a	n/a	n/a
Ebs Dac	n/a	n/a	n/a	n/a	n/a
Efg Bank Ag	n/a	n/a	n/a	n/a	n/a
Efg International Ag	0.03%	0.11%	0.55%	0.90%	0.18%
Erste Group Bank Ag	0.02%	0.10%	0.85%	1.66%	0.33%
Hsbc Holdings Plc	0.02%	0.08%	0.76%	1.54%	0.31%
Investec Plc	0.01%	0.05%	0.54%	1.24%	0.25%
Kbc Groep Nv	0.01%	0.06%	0.67%	1.44%	0.29%
Morgan Stanley	0.00%	0.04%	0.72%	2.35%	0.47%
Natixis	0.13%	0.37%	1.48%	2.39%	0.47%
Nomura Holdings Inc	0.27%	0.63%	1.42%	1.84%	0.37%
Permanent Tsb Plc	n/a	n/a	n/a	n/a	n/a
Raiffeisen Bank Internationa	0.04%	0.16%	1.03%	1.89%	0.37%
Raiffeisen Schweiz	n/a	n/a	n/a	n/a	n/a
Royal Bank Of Canada	0.00%	0.02%	0.56%	1.98%	0.39%
Royal Bank Of Scotland Group	0.05%	0.18%	1.06%	1.90%	0.38%
Societe Generale Sa	0.11%	0.33%	1.45%	2.36%	0.47%
Standard Chartered Plc	0.03%	0.12%	0.90%	1.72%	0.34%
Ubs Group Ag-Reg	0.02%	0.06%	0.42%	0.75%	0.15%
Ulster Bank Ireland Dac	n/a	n/a	n/a	n/a	n/a
Unicredit Spa	0.08%	0.26%	1.36%	2.27%	0.45%
Assured Guaranty Ltd	0.01%	0.04%	0.62%	1.54%	0.31%
Mbia Inc	0.08%	0.27%	1.83%	4.80%	0.94%
Progressive Corp	0.00%	0.00%	0.22%	0.59%	0.12%
Travelers Cos Inc/The	0.00%	0.00%	0.25%	0.69%	0.14%
Ryanair Holdings Plc	0.01%	0.03%	0.41%	0.92%	0.18%
Dell Inc	0.45%	1.16%	3.93%	5.60%	1.10%
Kerry Group Plc-A	0.00%	0.01%	0.28%	0.71%	0.14%
Vale Sa-Pref	0.07%	0.23%	1.11%	1.89%	0.38%
Pfizer Inc	0.00%	0.01%	0.22%	0.60%	0.12%
Rio Tinto Plc	0.01%	0.04%	0.43%	0.96%	0.19%

Source: BlackBee, Bloomberg

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Sovereign Analysis

Similar to companies, sovereigns (countries) also issue debt and we can use many of the same measures used to analyse companies when analysing sovereign credit risk. While sovereigns often have more freedom than companies to manage their debt, sovereign defaults have happened in the past.

Sovereign Credit Ratings

Country	Fitch Rating	Moody's Rating	S&P Rating	Fitch Outlook	Moody's Outlook	S&P Outlook
UK	AA	Aa2	AAu	NEG	STABLE	NEG
Ireland	A	A2	A+	STABLE	STABLE	STABLE
Belgium	AA-	Aa3	AAu	STABLE	STABLE	STABLE
Denmark	AAA	Aaa	AAA	STABLE	STABLE	STABLE
Finland	AA+	Aa1	AA+	STABLE	STABLE	STABLE
France	AA	Aa2	AAu	STABLE	STABLE	STABLE
Germany	AAA	Aaa	AAAu	STABLE	STABLE	STABLE
Greece	B-	Caa2	B-	POS	POS	POS
Iceland	A-	A3	A	POS	STABLE	STABLE
Italy	BBB	Baa2	BBB-u	STABLE	NEG	STABLE
Luxembourg	AAA	Aaa	AAA	STABLE	STABLE	STABLE
Norway	AAA	Aaa	AAA	STABLE	STABLE	STABLE
Portugal	BB+	Ba1	BBB-u	POS	POS	STABLE
Russia	BBB-	Ba1	BBB-	POS	STABLE	POS
Spain	BBB+	Baa2	BBB+	POS	STABLE	POS
Sweden	AAA	Aaa	AAAu	STABLE	STABLE	STABLE
Switzerland	AAA	Aaa	AAAu	STABLE	STABLE	STABLE
Argentina	B	B3	B	STABLE	POS	STABLE
Brazil	BB	Ba2	BB	NEG	NEG	NEG
Canada	AAA	Aaa	AAA	STABLE	STABLE	STABLE
US	AAA	Aaa	AA+u	STABLE	STABLE	STABLE
Australia	AAA	Aaa	AAAu	STABLE	STABLE	NEG
China	A+	A1	A+	STABLE	STABLE	STABLE
India	BBB-	Baa3	BBB-u	STABLE	POS	STABLE
Japan	A	A1	A+u	STABLE	STABLE	STABLE

Sovereign Credit Default Swaps (CDS)

Country	5 Year CDS	1 Month Change	3 Month Change	1 Year Change	Central Bank Rate	Bond Yields (10 yr)*
UK	23.5	19.6%	17.4%	-27.5%	23.5%	n/a
Ireland	32.0	-5.9%	-11.9%	-45.7%	32.0%	n/a
Belgium	18.5	2.6%	-5.1%	-55.9%	18.5%	n/a
France	20.7	-1.3%	-4.1%	-29.8%	20.7%	n/a
Germany	12.6	-8.1%	-16.4%	-34.4%	12.6%	n/a
Italy	140.8	-2.7%	-2.8%	-7.0%	140.8%	n/a
Spain	67.9	0.9%	7.0%	-18.5%	67.9%	n/a
Switzerland	n/a	n/a	n/a	n/a	n/a	n/a
Canada	n.a	n/a	n/a	n/a	n/a	n/a
US	24.8	n/a	n/a	n/a	n/a	n/a
China	61.7	7.4%	-11.3%	-41.4%	61.7%	n/a
Japan	39.6	n/a	n/a	n/a	n/a	n/a

Source: BlackBee, Bloomberg

"n/a" shows data not available, or not available from Bloomberg

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