NAIC National Association of Insurance Commissioners & The Center for Insurance Policy and Research

Capital Markets Special Report

The **NAIC's Capital Markets Bureau** monitors developments in the capital markets globally and analyzes their potential impact on the investment portfolios of US insurance companies. A list of archived Capital Markets Bureau Special Reports is available via the **index**

U.S. Corporate Bond Default and Recovery Rates: Impact on Related Insurance Company Investments

U.S. corporate bonds were the largest insurance company bond investment as of year-end 2010, at approximately $1 trillion of total insurance company investments. Inevitably, the recent financial crisis has impacted the performance of many of these bonds, particularly in terms of default and recovery rates. A review of research provided by the three largest nationally recognized statistical rating organizations (NRSROs) — i.e., Fitch Ratings (Fitch), Standard & Poor's (S&P) and Moody's Investors Service (Moody's) — among other sources, shows that corporate bonds, particularly high-yield bonds, have experienced improvements in default and recovery rates since last year. This is due in part to improving market conditions as the economy emerges from the financial crisis. As a result, the rating stability of these investments has been positively impacted.

U.S. Corporate Bond Activity

In the first quarter of 2011, $218.5 billion in corporate bonds were issued, according to a Credit Market Research study published by Fitch. This included a surge in bonds issued by the industrial and, more recently, financial sectors — almost 70% of which was investment grade. The total U.S. corporate bond universe currently outstanding amounts to $3.8 trillion, 76% of which were investment grade and 24% of which were high-yield, or "speculative" grade. The sectors largely responsible for this issuance pick-up in terms of dollar amount included banking and finance, utilities, energy, healthcare/pharmaceutical and telecommunication.

Rating	% of U.S. Corporate Bond Market
AAA	1.0
AA	12.3
A	34.9
BBB	27.9
BB	9.7
B	9.9
CCC-C	4.2

Source: Fitch's U.S. Corporate Bond Market Index

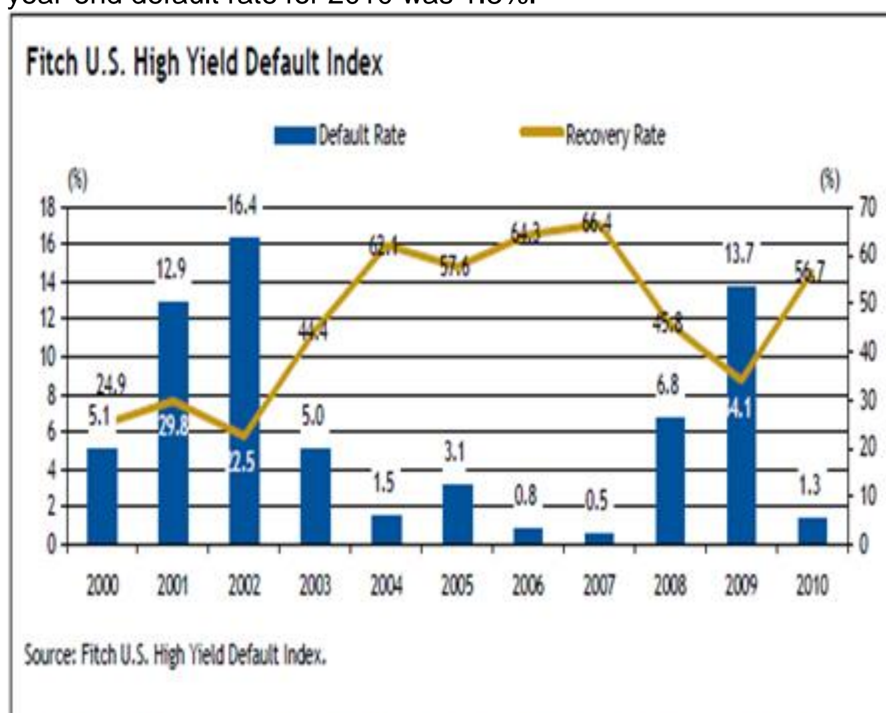
As of year-end 2010, approximately 92% of U.S. insurance companies' corporate bond exposure was designated NAIC 1 and 2 (investment grade), while approximately 8% was designated NAIC 3 through 6 (speculative grade).

As the economy has slowly emerged from the financial crisis that began in 2007, a low interest rate environment and easing of lending standards has contributed to growth in new issuance. Particularly, for 2011 so far, high-yield new issuance through April was $106 billion, according to Fitch. This included a large proportion of bonds rated B and CCC, which represented 78% of high-yield bond sales for the first quarter of 2011. In addition, according to S&P research,

corporate bond spreads on high-yield bonds were 543 basis points (bps) over the 10-year Treasury as of year-end 2010, compared to 616 bps at the beginning of the year. For investment grade bonds, the spread was 177 bps at year-end 2010, down from 193 bps on Jan. 1. As of May 24, 2011, spreads on high-yield and investment grade bonds were 476 bps and 131 bps, respectively, according to Barclays Capital.
Going forward, a possible impediment to this continued issuance progress includes a reduction in consumer and corporate spending, continued distress with regard to the eurozone countries, as well as a continued high unemployment rate. All of these factors, in turn, may then jeopardize the low default rate environment.

U.S. High-Yield Default Rate

According to Fitch, the U.S. high-yield bond default rate was 1.1% as of the end of April 2011, representing five issuer defaults across $1.2 billion bonds (since the beginning of 2011). In comparison, nine issuers defaulted on $2 billion bonds for the first four months of 2010, and the year-end default rate for 2010 was 1.3%.



Source: Fitch Ratings, Credit Market Research: Fitch U.S. High Yield Default Insight – April 2011; May 12, 2011

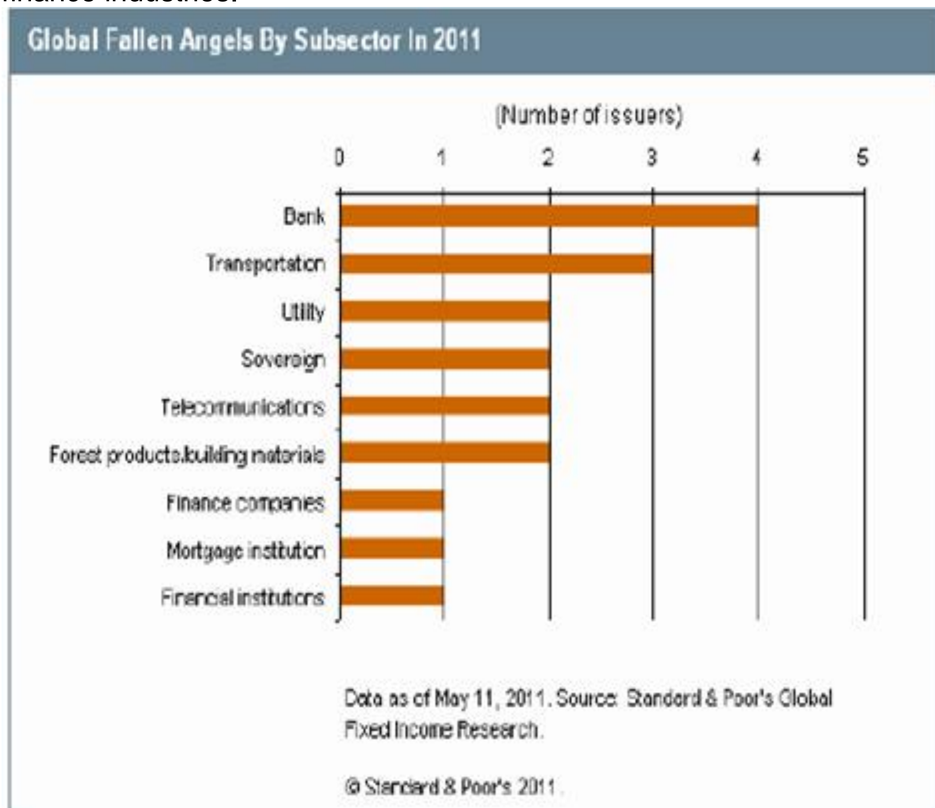
A default can be defined as a missed or delayed payment on a bond, a chapter 11/bankruptcy filing or a distressed debt exchange (DDE). A DDE means that the issuer exchanged the distressed bond for another security or stock with either a lesser coupon or par value. There are various factors that influence when and if a bond will default, such as the size of the issuing company and the point of the credit cycle. That is, different sized companies tend to default at different points in the credit cycle. Large cap high-yield companies, for example, have a greater likelihood of default during stressed periods vs. mid-cap high-yield companies, according to Fitch research. According to a 2005 Fitch study in collaboration with Dr. Edward Altman, New York University Director of Research in Credit and Debt Markets, the high-yield market predominantly comprises large cap ($500 million or more bonds outstanding) and mid-cap (up to $500 million bonds outstanding) companies.
As the chart above shows, the default rate in 2009 reached 13.7% before declining to 1.3% in 2010, as the economy began to recover, due in part to government initiatives and a general improvement in credit trends. Note this amount is significantly lower than the 16.4% default rate that occurred during the last financial downturn in 2002. Additionally, investor demand for yield

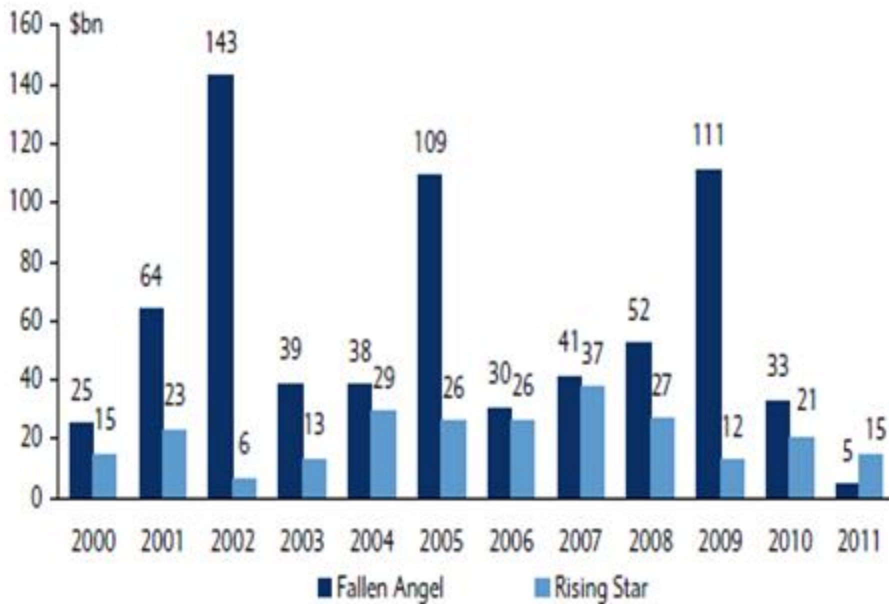
encouraged the sale of high-yield bonds in 2010 to record levels. Fitch research also shows that the rate of DDEs slowed in 2010, with 20% of issuer defaults consisting of DDEs in 2010 compared to 30% in 2009.

This most recent benign default rate environment has been supported by an improvement in high-yield credit quality, as evidenced by a decrease in the amount of high-yield bonds that have been downgraded. For the first quarter of 2011, rating activity for investment grade bonds remained relatively unchanged, while high-grade bonds experienced net upgrades, as indicated by all three rating agencies. An investment grade rating suggests that the likelihood of default is significantly less than for a bond with a below-investment grade (high-yield) rating. Therefore, defaults to investment grade bonds rarely happen. Rather, to the extent an investment grade bond experiences any credit quality deterioration, it would likely be downgraded to below-investment grade (high-yield or speculative) before a default actually occurs. Such bonds that are downgraded to high-yield that were once rated investment grade are referred to as “fallen angels.” Conversely, bonds that were initially rated below-investment grade and since upgraded to investment grade are referred to as “rising stars.”

Fallen Angels and Rising Stars

S&P recently published a report stating that it downgraded a total of 18 issuers in the amount of $145.1 billion that represented “fallen angels,” while it upgraded a total of 16 “rising stars” in the amount of $48.2 billion, between Jan. 1 and May 13, 2011. An industry breakdown of the fallen angels is shown in the table below; note that six of the 18 fallen angels were in the banking and finance industries.





(Note: 2011 data in the above Barclays Capital graph includes through April 2011)

According to a study by Edward Altman and Brenda Kuehne with the New York University Salomon Center, four issuers in financial services that were originally rated investment grade defaulted in 2010, resulting in a fallen angel average issuer annual default rate of 1.76%, which is significantly lower than 8.07% in 2009 and the historical high of 8.46% in 2001.

Year	Fallen Angel Average 12-Mo. Default Rate
2010	1.76
2009	8.07
2008	3.07
2007	0.86
2006	1.40
2005	2.74
2004	0.83
2003	5.88
2002	6.59
2001	8.46
2000	7.01
1999	4.01
1998	3.31
1997	2.04
1996	1.38
1995	0.25
1994	0.00
1993	1.72
1992	4.50
1991	7.53
1990	5.77
1989	3.74
1988	4.25
1987	4.36
1986	2.46
1985	6.77
Arithmetic Average	3.80
Standard Deviation	2.49

[a] All S&P issuer based except for Altman rates.

Sources: NYU Salomon Center and S&P.

The table below shows the fallen angel proportion of defaults, indicating that 15% of the 55 defaulted issues in 2010 were originally rated investment grade.

Figure 12. Fallen Angel Defaulted Issues by Original Rating, 1977-2010

Year	Total No. Defaulted Issues[a]	Originally Rated Investment Grade (%)
2010	55	15
2009	405	32
2008	154	31
2007	35	11
2006	52	13
2005	184	49
2004	79	19
2003	203	33
2002	322	39
2001	258	14
2000	142	16
1999	87	13
1998	39	31
1997	20	0
1996	24	13
1995	29	10
1994	16	0
1993	24	0
1992	59	25
1991	163	27
1990	117	16
1989	66	18
1988	64	42
1987	31	39
1986	55	15
1985	26	4
1984	14	21
1983	7	43
1982	20	55
1981	1	0
1980	4	25
1979	1	0
1978	1	100
1977	2	100
Total	**2,759**	**27%**

[a] Where we could find an original rating from either S&P or Moody's.

Sources: Moody's, NYU Salomon Center, and S&P.

Industry High-Yield Default Rates

In terms of industries, Fitch's U.S. High Yield Default Index shows that, for 2010, broadcasting and media led high-yield default rates at 5.5%, followed by building and materials at 2.2%. High-yield defaults through April 2011 have been minimal and were led by the auto industry at 0.9%. On average, for the time period 1980 through 2010, Fitch's U.S. High Yield Default Index shows that the banking and finance industry leads the average annual default rate at 8.3%, followed by automotive at 7.4%. Note that industry default rates are not only influenced by general economic conditions, but also by corporate actions and industry-specific factors.

Due in part to company financial policies, certain industries fared worse than others in terms of high defaults during the recent financial crisis. Easy access to low financing, particularly for highly leveraged companies, likely contributed to the rise in the default rate in 2008 and 2009. According to research by S&P, the industries with default rates that exceeded their long-term averages were leisure/media, forest and building products/homebuilders and financial institutions, because the financial and housing markets were impacted most severely by the recent crisis.

Fitch U.S. High Yield Default Index: Industry Default Rates

(%)

Fitch Industry	Average Annual 1980–2010	2010	April YTD
Automotive	7.4	0.5	0.9
Banking and Finance	8.3	1.5	0.1
Broadcasting and Media	5.3	5.5	—
Building and Materials	4.7	2.2	—
Cable	5.1	—	—
Chemicals	3.0	—	—
Computers and Electronics	3.1	0.3	—
Consumer Products	3.3	—	—
Energy	2.0	1.1	—
Food, Beverage, and Tobacco	3.9	1.5	—
Gaming, Lodging, and Restaurants	4.7	1.3	0.3
Healthcare and Pharmaceutical	2.5	1.8	—
Industrial/Manufacturing	3.3	0.8	—
Insurance	5.2	—	—
Leisure and Entertainment	5.3	—	—
Metals and Mining	4.2	1.2	—
Miscellaneous	2.1	0.3	—
Paper and Containers	4.3	1.0	—
Real Estate	2.6	—	—
Retail	4.4	3.0	0.5
Supermarkets and Drug Stores	5.3	3.1	—
Telecommunications	9.9	1.2	0.5
Textiles and Furniture	6.8	—	—
Transportation	6.4	1.7	—
Utilities	5.5	—	—
Total Index	**5.1**	**1.3**	**0.1**

Source: Fitch U.S. High Yield Default Index.

Insurance Company Exposure to Banking and Finance

Insurance Company Exposure to Banking and Finance

With the majority of insurance company corporate bond exposures having corresponding NAIC ratings indicative primarily of investment grade, the likelihood of default or significant loss with respect to these exposures is mitigated. And, as mentioned in the report published May 20 by the NAIC Capital Markets Bureau regarding U.S. insurance company exposure to financial institutions, total exposure (including short-term and long-term debt) in banking, finance and insurance industries was $457 billion as of year-end 2010. This represents almost half of the total insurance industry's U.S. corporate bond exposure and just over 8% of invested assets. Given the high level of issuance in the financial sector in recent years, which was also noted in the article, this exposure could have been much higher. In particular, the banking and finance industries comprised about $284 billion, or about 60% of the financial sector exposure. Also, as mentioned in the May 20 report, "…financial bonds are attractive as insurance company investments because they are typically highly liquid and highly rated by nationally recognized statistical rating organizations (NRSROs). … Without insurance companies, financial institutions would lose a significant source of capital." The report also showed that slightly more than 95% of insurance company exposure to banking and finance is designated NAIC 1 and NAIC 2, which mitigates concern over Fitch's reference to the high average default rate within banking and finance. Notwithstanding, given the current instability of the U.S. banking system, downgrades of any banks to speculative grade would, consequently, result in an increased likelihood of default to the banking exposure.

Strong U.S. High-Yield Recovery Rates

Fitch's research revealed that "the same fundamental factors that put downward pressure on the default rate in 2010 also boosted the year's recoveries on defaulted bonds." For 2010, Fitch calculated the weighted average recovery rate on defaulted high-yield bonds to be 56.7% of par. Separately, recovery rates for DDE tend to be higher than for "traditional" high-yield defaulted bonds, averaging 88.2% of par as of year-end 2010. Nevertheless, Fitch cites concern over whether the reduction of debt through a DDE will prevent a company from ultimately filing for bankruptcy, as deleveraging typically results in a better outcome.

Similar to defaults, recoveries are not only influenced by current economic dynamics, but also by company- and industry-specific factors. For example, a company with a strong business model, despite high leverage, might experience higher recoveries if its equity is highly valued. On the other hand, industries (and, therefore, companies) that are cyclically challenged with weaker business models, will likely experience lower recovery values. Industries that fall into this latter category include broadcasting and media, building and materials, and banking and finance. Each of these industries tends to experience high defaults along with low recovery rates.

Recovery Rates by Industry

Fitch Industry	Weighted Avg. Recovery Rate (%)	No. of Issues
2010		
Telecommunication	100.6	1
Miscellaneous	98.6	1
Supermarkets and Drug Stores	89.5	1
Paper and Containers	86.9	1
Transportation	80.6	1
Gaming, Lodging, and Restaurants	69.0	3
Industrial/Manufacturing	62.1	1
Energy	61.3	3
Building and Materials	53.8	3
Healthcare and Pharmaceutical	52.6	3
Metals and Mining	49.5	2
Retail	44.6	3
Banking and Finance	43.2	5
Broadcasting and Media	35.1	7
Computers and Electronics	9.6	1
Total Defaulted Issues	**56.7**	**36**
1Q11		
Banking and Finance	47.2	1
Automotive	24.6	1
Retail	24.4	2
Gaming, Lodging, and Restaurants	20.6	1
Total Defaulted Issues	**30.8**	**5**

Source: Fitch Ratings, Advantage Data.

Also influencing recovery rates is the seniority of the bond within the company's capital structure. As shown in the table below, the more senior the bond, the more it is expected to recover, given its priority in terms of payment over the company's more junior debt.

Recovery Rates by Seniority

	Weighted Avg. Recovery Rate (%)	Median Recovery Rate* (%)	No. of Issues
2010			
Senior Secured	64.3	55.3	15
Senior Unsecured	69.3	81.6	10
Senior Subordinated	28.3	16.9	11
Total Defaulted Issues	**56.7**	**50.0**	**36**
1Q11			
Senior Secured	47.2	47.2	1
Senior Unsecured	22.8	22.4	3
Senior Subordinated	24.6	24.6	1
Total Defaulted Issues	**30.8**	**24.4**	**5**

*Similar seniorities per issuer collapsed into one observation
Source: Fitch Ratings, Advantage Data.

And, to the extent a company has bank loans outstanding, which are senior in capital structure to the company's bonds, Fitch's U.S. High Yield Default Index revealed that the average loan recovery rate was 83% of par in 2010, compared to 60% of par in 2009. While still small, insurance companies have in recent years also participated in this market. This is frequently referred to as the leveraged loan market.

Given the sizeable insurance company exposure to banking, if any issuers within this industry are downgraded to speculative grade by any of the NRSROs, insurance companies might expect a weighted average recovery rate of about 47% of par on their investment (as of the first quarter of 2011) based on the table above cited from Fitch's research.

What Lies Ahead

Default and recovery rates going forward will continue to be dependent on the progress of U.S. economic recovery and growth as it continues to emerge from the recent financial crisis, particularly as it relates to the unemployment rate and status of the financial and housing sectors. It will also depend on the direction of oil and gas prices, which could dampen consumer and corporate spending if they continue to rise above the $100/barrel and $4/gallon marks, respectively. Additionally, an increase in interest rates due to risk aversion could also have a negative impact.

However, all three rating agencies and other sources expect that with continued U.S. economic recovery, albeit slow, and appropriate government monetary policy, default rates on high-yield bonds are expected to remain below 2% by year-end 2011. Similar to defaults, recovery rates will be influenced by macroeconomics, industry-related events and company-related attributes. The Capital Markets Bureau will continue to monitor this topic and publish updated information as appropriate.

May 20, 2011								
Major Insurer Share Prices			**Change %**			**Prior**		
		Close	**Week**	**QTD**	**YTD**	**Week**	**Quarter**	**Year**
Life	Aflac	$49.60	(8.2)	(6.0)	(12.1)	$54.02	$52.78	$56.43
	Ameriprise	62.29	(0.2)	2.0	8.2	62.41	61.08	57.55
	Genworth	11.11	(1.0)	(17.5)	(15.4)	11.22	13.46	13.14
	Lincoln	29.26	(1.8)	(2.6)	5.2	29.79	30.04	27.81
	MetLife	44.28	(0.3)	(1.0)	(0.4)	44.41	44.73	44.44
	Principal	31.68	2.1	(1.3)	(2.7)	31.02	32.11	32.56
	Protective	24.25	(1.4)	(8.7)	(9.0)	24.59	26.55	26.64
	Prudential	63.78	1.0	3.6	8.6	63.13	61.58	58.71
	UNUM	26.77	2.1	2.0	10.5	26.22	26.25	24.22
PC	ACE	$68.82	1.5	6.4	10.6	$67.81	$64.70	$62.25
	Axis Capital	33.36	(0.8)	(4.5)	(7.0)	33.62	34.92	35.88
	Allstate	32.00	(1.2)	0.7	0.4	32.38	31.78	31.88
	Arch Capital	34.56	0.9	(65.2)	(60.7)	34.24	99.19	88.05
	Cincinnati	30.66	(78.1)	(6.5)	(3.3)	140.24	32.79	31.69
	Chubb	65.74	(55.1)	7.2	10.2	146.32	61.31	59.64
	Everest Re	90.05	(40.9)	2.1	6.2	152.40	88.18	84.82
	Progressive	21.70	(86.3)	2.7	9.2	158.48	21.13	19.87
	Travelers	62.38	(62.1)	4.9	12.0	164.56	59.48	55.71
	WR Berkley	33.08	(80.6)	2.7	20.8	170.64	32.21	27.38
	XL	23.60	(86.6)	(4.1)	8.2	176.72	24.60	21.82
Other	AON	$52.33	(72.3)	(1.2)	13.7	$188.88	$52.96	$46.01
	AIG	30.76	(84.2)	(12.5)	(36.3)	194.96	35.14	48.27
	Assurant	37.96	(81.1)	(1.4)	(1.5)	201.04	38.51	38.52
	Fidelity National	15.55	(92.5)	10.0	13.7	207.12	14.13	13.68
	Hartford	27.06	(87.3)	0.5	2.2	213.20	26.93	26.49
	Marsh	30.49	(86.1)	2.3	11.5	219.28	29.81	27.34
Health	Aetna	$45.09	(80.5)	20.5	47.8	$231.44	$37.43	$30.51
	Cigna	49.22	(79.3)	11.2	34.3	237.52	44.28	36.66
	Humana	80.05	(67.1)	14.5	46.2	243.60	69.94	54.74
	United	49.89	(80.0)	10.4	38.2	249.68	45.20	36.11
	WellPoint	80.64	(68.5)	15.5	41.8	255.76	69.79	56.86
Monoline	Assured	$16.61	(93.8)	11.5	(6.2)	$267.92	$14.90	$17.70
	MBIA	8.73	(96.8)	(13.0)	(27.2)	274.00	10.04	11.99
	MGIC	7.49	(97.3)	(15.7)	(26.5)	280.08	8.89	10.19
	PMI	1.39	(99.5)	(48.5)	(57.9)	286.16	2.70	3.30
	Radian	4.42	(98.5)	(35.2)	(45.3)	292.24	6.81	8.07
	XL Capital	23.60	(92.1)	(4.1)	8.2	298.32	24.60	21.82

May 20, 2011								
Major Market Variables			**Change %**			**Prior**		
		Close	**Week**	**QTD**	**YTD**	**Week**	**Quarter**	**Year**
Dow Jones Ind		12,512.04	3637.2	1.6	8.1	334.80	12,319.73	11,577.51
S&P 500		1,333.27	291.1	0.6	6.0	340.88	1,325.83	1,257.64
S&P Financial		211.36	(39.1)	(4.2)	(1.6)	346.96	220.71	214.77
S&P Insurance		191.45	(45.8)	(1.8)	1.7	353.04	194.96	188.22
US Dollar $			**Change %**			**Prior**		
	/ Euro	$1.42	(99.6)	0.0	5.8	$371.28	$1.42	$1.34
	/ Crude Oil bbl	99.49	(73.6)	(6.8)	7.9	377.36	106.72	92.22
	/ Gold oz	1,513.50	294.7	5.2	6.5	383.44	1,438.90	1,420.78
Treasury Ylds %		%	**Change**			%	%	%
	1 Year	0.17	0.00	(0.12)	(0.10)	0.17	0.28	0.27
	10 Year	3.15	(0.01)	(0.33)	(0.15)	3.16	3.47	3.30
	30 Year	4.30	0.01	(0.21)	(0.04)	4.29	4.51	4.34
Corp Credit Spreads -bp			**Change %**			**Prior**		
	CDX.IG	76.27	38.4	(9.0)	(10.3)	55.12	83.81	85.00

May 20, 2011
Major Insurer Bond Yields

	Company	Coupon	Maturity	Price			Spread	
				Current	Change	Yield	B.P.	Change
Life	Aflac	8.500%	5/15/2019	$124.14	($0.01)	4.82%	203	2
	Ameriprise	5.300%	3/15/2020	$109.03	($0.17)	4.07%	112	3
	Genworth	6.515%	5/15/2018	$102.90	$0.37	6.00%	342	(4)
	Lincoln National	8.750%	7/15/2019	$129.27	($0.26)	4.41%	159	4
	MassMutual	8.875%	6/15/2039	$141.92	$0.78	5.82%	154	(4)
	MetLife	4.750%	2/15/2021	$103.05	($0.28)	4.36%	122	6
	Mutual of Omaha	6.800%	6/15/2036	$104.47	($0.70)	6.44%	236	7
	New York Life	6.750%	11/15/2039	$117.59	$0.29	5.52%	122	(1)
	NLV Financial	7.500%	8/15/2033	$117.91	$0.04	6.03%	211	1
	Northwestern Mutual	6.063%	3/15/2040	$108.83	$0.21	5.45%	113	(2)
	Pacific Life	9.250%	6/15/2039	$134.58	($0.52)	6.54%	227	3
	Principal	6.050%	10/15/2036	$106.54	($0.17)	5.57%	139	1
	Prudential	4.500%	11/15/2020	$100.99	($0.09)	4.37%	129	5
	TIAA	6.850%	12/15/2039	$116.73	($0.02)	5.66%	137	0
P&C	ACE INA	5.900%	6/15/2019	$113.61	$0.05	3.91%	112	3
	Allstate	7.450%	5/15/2019	$121.15	($0.28)	4.29%	152	6
	American Financial	9.875%	6/15/2019	$125.50	($0.06)	5.86%	306	4
	Berkshire Hathaway	5.400%	5/15/2018	$112.30	$0.09	3.40%	87	1
	Travelers	3.900%	11/15/2020	$97.90	$0.10	4.17%	110	2
	XL Group	6.250%	5/15/2027	$100.99	($0.24)	6.15%	250	(2)
Other	AON	5.000%	9/15/2020	$104.11	$0.19	4.46%	139	1
	AIG	5.850%	1/15/2018	$106.57	$0.03	4.69%	223	2
	Fidelity National	7.875%	7/15/2020	$111.19	($0.31)	6.25%	447	19
	Hartford	5.500%	3/15/2020	$105.28	($0.01)	4.76%	181	3
	Marsh	9.250%	4/15/2019	$129.62	($0.77)	4.71%	182	10
	Nationwide	9.375%	8/15/1939	$127.90	$0.36	7.08%	282	(2)
Health	Aetna	3.950%	9/15/2020	$98.94	($0.29)	4.09%	104	5
	CIGNA	5.125%	6/15/2020	$106.85	$0.06	4.21%	118	1
	United Healthcare	3.875%	10/15/2020	$98.43	$0.12	4.08%	98	1
	Wellpoint	4.350%	8/15/2020	$102.29	($0.01)	4.05%	102	3

Questions and comments are always welcome. Please contact the Capital Markets Bureau at **CapitalMarkets@naic.org**.

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