Under Pressure: P/C Insurance Markets in an Era of High Catastrophe Losses, Low Interest Rates and Tort Liability Concerns

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P/C Insurance Industry Financial Overview

Industry Performance Has Been Affected by High CAT Losses and Low Interest Rates









* ROE figures are GAAP; ¹Return on avg. surplus. Excluding Mortgage & Financial Guaranty insurers yields a 6.2% ROAS in 2012, 4.7% ROAS for 2011, 7.6% for 2010 and 7.4% for 2009. Sources: A.M. Best, ISO, Insurance Information Institute.

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P/C Net Income after Taxes

1991–2012 (\$ Millions)



A 100 Combined Ratio Isn't What It Once Was: Investment Impact on ROEs



Combined Ratios Must Be Lower in Today's Depressed Investment Environment to Generate Risk Appropriate ROEs

* 2008 -2012 figures are return on average surplus and exclude mortgage and financial guaranty insurers. 2012 combined ratio including M&FG insurers is 103.2, 2011 combined ratio including M&FG insurers is 108.1, ROAS = 3.5%.

Source: Insurance Information Institute from A.M. Best and ISO data.

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Profitability Peaks & Troughs in the P/C Insurance Industry, 1975 - 2012* ROE History suggests next ROE peak will be in 2016-2017



*Profitability = P/C insurer ROEs. 2011 figure is an estimate based on ROAS data. Note: Data for 2008-2012 exclude mortgage and financial guaranty insurers. Source: Insurance Information Institute; NAIC, ISO, A.M. Best.

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Near Record Catastrophe Losses Continue to Pressure Rates

U.S. Catastrophe Losses in Recent Years Have Been Very High and Vulnerability Is Rising Globally







U.S. Insured Catastrophe Losses

(\$ Billions, 2012 Dollars)



2012 Was the 3rd Highest Year on Record for Insured Losses in U.S. History on an Inflation-Adj. Basis. 2011 Losses Were the 6th Highest. YTD 2013 Running Below Average but Q3 Is Typically the Costliest Quarter.

*Through 6/2/13. Includes \$2.6B for 2013:Q1 (PCS) and \$5.32B for the period 4/1 – 6/2/13 (Aon Benfield Monthly Global Catastrophe Recap). Note: 2001 figure includes \$20.3B for 9/11 losses reported through 12/31/01 (\$25.9B 2011 dollars). Includes only business and personal property claims, business interruption and auto claims. Non-prop/BI losses = \$12.2B (\$15.6B in 2011 dollars).

Sources: Property Claims Service/ISO; Insurance Information Institute.

Record tornado losses caused 2011 CAT losses to surge



Top 16 Most Costly Disasters in U.S. History

(Insured Losses, 2012 Dollars, \$ Billions)



Sources: PCS; Insurance Information Institute inflation adjustments to 2012 dollars using the CPI.

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The Past Two Years Have Not Been Kind to Insurers or Utilities





Hurricane Irene: Aug. 27-29, 2011 **Insured Losses: \$4.3 Billion Customers w/o Power: 5 Million**

"Snowtober" Blizzard: Oct. 29, 2011 Insured Losses: ~\$1 Billion **Customers w/o Power: 2.7 Million**





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Derecho: June 29, 2012 Insured Losses: ~\$1+ Billion Customers w/o Power: 3.7 Million Superstorm Sandy: Oct. 29-30, 2012 **Insured Losses: \$18.8 Billion** Customers w/o Power: 8.1 Million

Source: Insurance Information Institute research.





Natural Disasters in the United States, 1980 – 2012 Number of Events (Annual Totals 1980 – 2012)



Source: MR NatCatSERVICE



Geophysical (earthquake, tsunami, volcanic activity)

Meteorological (storm)

Hydrological (flood, mass movement)

Climatological (temperature extremes, drought, wildfire)





Losses Due to Natural Disasters in the US, 1980–2012 (Overall and Insured Losses)

(2012 Dollars, \$ Billions)

2012 was the 2nd most expensive year on record for insured catastrophe losses in the US (incl. NFIP flood).

Approximately 57% of the overall cost of catastrophes in the US was covered by insurance in 2012



Overall losses (in 2012 values)

Source: MR NatCatSERVICE



2012 Losses Overall: \$101.1B Insured: \$57.9B



Natural Disaster Losses in the United States: 2012

As of January 1, 2013	Number of Events	Fatalities	Estimated Overall Losses (US \$m)	Estimated Insured Losses (US \$m)
Tropical Cyclone	4	143	52,240	26,360
Severe Thunderstorm	115	118	27,688	14,914
Drought	2	0	20,000	16,000†
Wildfire	38	13	1,112	595
Winter Storm	2	7	81	38
Flood	19	3	13	0 ††
TOTALS	184	284	\$101,134	\$57,907

Source: MR NatCatSERVICE

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† - Includes Federal Crop Insurance Losses. † + - Excludes federal flood.



Inflation Adjusted U.S. Catastrophe Losses by Cause of Loss, **1992–2011**¹



- 3. Does not include NFIP flood losses
- 4. Includes wildland fires

5. Includes civil disorders, water damage, utility disruptions and non-property losses such as those covered by workers compensation. Source: ISO's Property Claim Services Unit.



Insured cat losses from 1992-2011 totaled \$384.3B, an average of \$19.2Bper year or \$1.6B per month

Wind losses are by far cause the most catastrophe losses, even if hurricanes/TS are excluded.



U.S. Thunderstorm Loss Trends, 1980 – 2012



Source: Property Claims Service, MR NatCatSERVICE





Top 16 Most Costly World Insurance Losses, 1970-2012*

(Insured Losses, 2012 Dollars, \$ Billions)



*PCS estimate as of 4/12/13.

Sources: PCS; Insurance Information Institute inflation adjustments to 2012 dollars using the CPI.

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Natural Loss Events: Full Year 2012



Natural Disasters Worldwide, 1980 – 2013*

Number of Events



Source: MR NatCatSERVICE



Geophysical (earthquake, tsunami, volcanic activity)

Meteorological (storm)

Hydrological (flood, mass movement)

Climatological (temperature extremes, drought, wildfire)





Losses Due to Natural Disasters Worldwide, 1980– 2013* (Overall & Insured Losses) (Overall and Insured Losses)









Outlook for 2013 Hurricane Season: Above Average Activity Expected

Hurricanes and Tropical Storms Drive Some of the Largest Losses Utilities Experience Each Year







Top 12 Most Costly Hurricanes in U.S. History

(Insured Losses, 2012 Dollars, \$ Billions)

10 of the 12 most costly hurricanes in insurance history occurred over the past 9 years (2004 - 2012)



*PCS estimate as of 4/12/13.

Sources: PCS; Insurance Information Institute inflation adjustments to 2012 dollars using the CPI.

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Hurricane Sandy: Claim Payments to Policyholders, by State (\$ Thousands)

TOTAL = \$18.75 Billion*



Insurers Will Pay at Least \$18.75 Billion to 1.52 Million Policyholders across 15 States and DC in the Wake of Hurricane Sandy

Sources: Catastrophe loss data is for Catastrophe Serial No. 90 (Oct. 28 - 31, 2012) from PCS as of Jan. 18, 2013; Insurance Information Institute .



NH DC ME VT

\$55 \$37	\$36	\$13
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Hurricane Sandy: Insured Loss by Claim Type* (\$ Millions)

Total Claim Value = \$18.75 Billion*



*PCS insured loss estimates as of 1/18/13. Catastrophe modeler estimates range up to \$25 billion. All figures exclude losses paid by the NFIP. Source: PCS; Insurance Information Institute.

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Although Commercial Lines accounted for only 13% of total claims, they account for 48% of all claim dollars paid. In most hurricanes, Commercial Lines accounts for about 1/3 of insured losses.



Outlook for 2013 Hurricane Season: 75% Worse Than Average

Forecast Parameter	Median (1981-2010)
Named Storms	12.0
Named Storm Days	60.1
Hurricanes	6.5
Hurricane Days	21.3
Major Hurricanes	2.0
Major Hurricane Days	3.9
Accumulated Cyclone Energy	92.0
Net Tropical Cyclone Activity	103%

Source: Philip Klotzbach and Dr. William Gray, Colorado State University, June 2013, accessed at http://tropical.atmos.colostate.edu/forecasts/2013/jun2013/jun2013.pdf; Insurance Information Institute.







Landfall Probabilities for 2013 Hurricane Season: Above Average

	Average*
Entire US East & Gulf Coasts	52%
US East Coast Including Florida Peninsula	31%
Gulf Coast from Florida Panhandle to Brownsville	30%
Caribbean	42%

*Average over the past century. Source: Philip Klotzbach and Dr. William Gray, Colorado State University, June 2013.







Selected Large Outages Associated with Tropical Systems, by State

(Millions of Customers)

Florida: Frances (2004) Florida: Wilma (2005) New Jersey: Sandy (2012) Texas: Ike (2008) New York: Sandy (2012) Florida: Charley (2004) Pennsylvania: Sandy (2012) Alabama: Ike (2008) Mississippi: Katrina (2005) New York: Irene (2011) Katrina: Katrina (2005) New Jersey: Irene (2011) Texas: Rita (2005) Connecticut: Sandy (2012)



Sources: US Dept. of Energy, Vertyx, AP analysis; Insurance Information Institute.



3.50 4.00

significant losses for



Total Value of Insured Coastal Exposure in 2012 (2012 Dollars, \$ Billions)



Source: AIR Worldwide.





\$3,000 \$3,500

\$2.923 trillion insured coastal exposure in New **York in 2012**

\$2,923.1 \$2,862.3

Combined Ratio Points Associated with Catastrophe Losses: 1960 - 2012* Catastrophe losses as a share of all **Combined Ratio Points**

Avg. CAT Loss Component of 10 ŝ the Combined Ratio by Decade 8 1960s: 1.04 1970s: 0.85 ດ ю 6 1980s: 1.31 1990s: 3.39 2000s: 3.52 2010s: 7.20* 3.6 4 3.0 N 33 2.3 ы К 4 0 0 N 2 0 0.5 0.5 0.7 **6** 4 0 \cap

The Catastrophe Loss Component of Private Insurer Losses Has Increased **Sharply in Recent Decades**

Notes: Private carrier losses only. Excludes loss adjustment expenses and reinsurance reinstatement premiums. Figures are adjusted for losses ultimately paid by foreign insurers and reinsurers. Source: ISO (1960-2011); A.M. Best (2012E) Insurance Information Institute.



losses reached a record high in 2012

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Federal Disaster Declarations Patterns: 1953-2013 Disaster Declarations Set New Records in Recent Years







Number of Federal Disaster Declarations, 1953-2013*



Hurricane Sandy Produced 13 Declarations in 2012/13.

*Through July 7, 2013.

Source: Federal Emergency Management Administration; http://www.fema.gov/disasters; Insurance Information Institute.



Federal Disasters Declarations by State, 1953 – 2013: Highest 25 States*



Source: FEMA: http://www.fema.gov/news/disaster_totals_annual.fema; Insurance Information Institute.



Federal Disasters Declarations by State, 1953 – 2013: Lowest 25 States*



Includes Puerto Rico and the District of Columbia. ws/disaster totals annual.fema: Insurance Information Institute.

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Severe Weather Report Update: 2013

Damage from Tornadoes, Large Hail and High Winds Keep Insurers Busy







Severe Weather Reports, 2012



There were 22,503 severe weather reports in 2012; including 1,119 tornadoes; 7,033 "Large Hail" reports and 14,351 high wind events

Source: NOAA Storm Prediction Center; http://www.spc.noaa.gov/climo/online/monthly/2012 annual summary.html#

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Location of Tornado Reports: through July 3, 2013

The storm system that spawned the deadly EF-5 tornado on May 19 in Moore, OK, produced insured losses of \$1.575 billion





REPORT DATABASE (ROUGH LOG)

NOAA/Storm Prediction Center Norman, Oklahoma

Tornado Reports January 01, 2013 - July 03, 2013

Updated: Wednesday July 03, 2013 14:53 CT

Source: NOAA Storm Prediction Center; http://www.spc.noaa.gov/climo/online/monthly/2013 annual summary.html#; PCS.

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Location of Large Hail Reports: through July 3, 2013



Source: NOAA Storm Prediction Center; http://www.spc.noaa.gov/climo/online/monthly/2013 annual summary.html#

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There were 3,716 "Large Hail" reports through July 3, causing extensive property and vehicle damage

Location of High Wind Reports: through July 3, 2013



Source: NOAA Storm Prediction Center; http://www.spc.noaa.gov/climo/online/monthly/2013 annual summary.html#

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There were 7,371 "Wind Damage" reports through July 3, causing extensive property damage


Severe Weather Reports: through July 3, 2013



Source: NOAA Storm Prediction Center; http://www.spc.noaa.gov/climo/online/monthly/2013 annual summary.html#



There were 11,717 severe weather reports through July 3; including 630 tornadoes; 3,716 "Large Hail" reports and 7,371 high wind events



U.S. Tornado Count, 2005-2013*



*Through July 6, 2013. Source: http://www.spc.noaa.gov/wcm/.





Investments: The New Reality

Investment Performance Is a Key Driver of Profitability Depressed Yields Will Necessarily Impact Underwriting & Pricing







Property/Casualty Insurance Industry Investment Income: 2000–2013*1



Investment Income Fell in 2012 and is Falling in 2013 Due to Persistently Low Interest Rates, Putting Additional Pressure on (Re) Insurance Pricing

1 Investment gains consist primarily of interest and stock dividends..

*Estimate based on annualized actual Q1:2013 investment income of \$11.385B.

Sources: ISO; Insurance Information Institute.





Insurers Posted Net Realized Capital Gains in 2010, 2011 and 2012 Following Two Years of Realized Losses During the Financial Crisis. Realized Capital Losses Were a Primary Cause of 2008/2009's Large Drop in Profits and ROE

Sources: A.M. Best, ISO, Insurance Information Institute,





Property/Casualty Insurance Industry Investment Gain: 1994–2013:Q1¹ (\$ Billions)



Investment Gains Slipped in 2012 as Low Interest Rates Reduced Investment Income and Realized Investment Gains Fell; The Financial Crisis Caused Investment Gains to Fall by 50% in 2008. Reduced investment earnings are pressuring rates/pricing.

1 Investment gains consist primarily of interest, stock dividends and realized capital gains and losses.

* 2005 figure includes special one-time dividend of \$3.2B;

Sources: ISO: Insurance Information Institute.

12 13:Q1



P/C Industry Investment Gains, Inflation-Adjusted: 1994–2013E¹ (\$ Billions)

1994-2012 average yearly gain: \$61B hasn't been achieved since 2007



Because the Federal Reserve Board aims to keep interest rates exceptionally low until the unemployment rate hits 6.5%—likely well into 2014—maturing bonds will be re-invested at still low rates even once "tapering" begins.

1 Investment gains consist primarily of interest, stock dividends and realized capital gains and losses. *2005 figure includes special one-time dividend of \$3.2B; 2013F figure is I.I.I. estimate for 2013:Q1, annualized. Sources: ISO: Insurance Information Institute.



U.S. 10-Year Treasury Note Yields: A Long Downward Trend, 1990–2013*



'90 '91 '92 '93 '94 '95 '96 '97 '98 '99 '00 '01 '02 '03 '04 '05 '06 '07 '08 '09

Since roughly 80% of P/C bond/cash investments are in 10-year or shorter durations, most P/C insurer portfolios will have low-yielding bonds for years to come.

*Monthly, through June 2013. Note: Recessions indicated by gray shaded columns. Sources: Federal Reserve Bank at http://www.federalreserve.gov/releases/h15/data.htm. National Bureau of Economic Research (recession dates); Insurance Information Institutes.

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Yields on 10-Year U.S. Treasury Notes recently plunged to record modernera lows and remain low by historical standards

9 '10 '11 '12 '13



U.S. Treasury Security Yields: A Long Downward Trend, 1990–2013*



Since roughly 80% of P/C bond/cash investments are in 10-year or shorter durations, most P/C insurer portfolios will have low-yielding bonds for years to come.

*Monthly, constant maturity, nominal rates, through June 2013. Sources: Federal Reserve Bank at http://www.federalreserve.gov/releases/h15/data.htm. National Bureau of Economic Research (recession dates); Insurance Information Institute.



Treasury Yield Curves: Pre-Crisis (July 2007) vs. June 2013



The Fed Is Actively Signaling that it Is Determined to Keep Rates Low Until Unemployment Drops Below 6.5% or Until Inflation Expectations Exceed 2.5%; Low Rates Add to Pricing Pressure for Insurers.

Source: Federal Reserve Board of Governors: Insurance Information Institute.







5.00%



5.19%

Average Maturity of Bonds Held by US P/C Insurers, 2006-2011*

Average Maturity (Years)



Falling Average Maturity (and Duration) of the P/C Industry's Bond Portfolio is Contributing to the Drop in Investment Income Along With Lower Yields

*Year-end figures. Latest available.

Sources: Insurance Information Institute calculations based on A.M. Best data.



Distribution of Bond Maturities, P/C Insurance Industry, 2003-2012



The main shift over these years has been from bonds with longer maturities to bonds with shorter maturities. Since 2006, the industry trimmed its holdings of bonds with maturities greater than 10 years from 20.5% in 2006 to 15.5% in 2012 and then trimmed bonds in the 5-10-year category from 34.1% in 2006 to 27.6% in 2012). Falling average maturity of the P/C industry's bond portfolio is contributing to a drop in investment income along with lower yields.

Sources: SNL Financial; Insurance Information Institute.



Bonds Rated NAIC Quality Category 3-6 as a Percent of Total Bonds, 2003–2012



There are many ways to capture higher yields on bond portfolios. One is to accept greater risk, as measured by NAIC bond ratings. The ratings range from 1 to 6, with the highest quality rated 1. Even in 2012, over 95% of the industry's bonds were rated 1 or 2.

Sources: SNL Financial; Insurance Information Institute.







Reduction in Combined Ratio Necessary to Offset 1% Decline in Investment Yield to Maintain Constant ROE, by Line*



Lower Investment Earnings Place a Greater Burden on Underwriting and Pricing Discipline

*Based on 2008 Invested Assets and Earned Premiums

**US domestic reinsurance only

Source: A.M. Best; Insurance Information Institute.







Annual Inflation Rates, (CPI-U, %), 1990-2014F

Annual Inflation Rates (%)



burden, remain longer-run concerns

Sources: US Bureau of Labor Statistics; Blue Chip Economic Indicators, 7/13 (forecasts).

Inflationary expectations

an extended period of times. Energy, health care and commodity prices, plus U.S. debt



Property/Casualty Insurance Industry Investment Income: 2000–2013*1 (\$ Billions)

\$60



Investment Income Fell in 2012 and is Falling in 2013 Due to Persistently Low Interest Rates, Putting Additional Pressure on (Re) Insurance Pricing

1 Investment gains consist primarily of interest and stock dividends.. *Estimate based on annualized actual Q1:2013 investment income of \$11.385B. Sources: ISO; Insurance Information Institute.





Insurers Posted Net Realized Capital Gains in 2010, 2011 and 2012 Following Two Years of **Realized Losses During the Financial Crisis. Realized Capital Losses Were the Primary Cause** of 2008/2009's Large Drop in Profits and ROE

Sources: A.M. Best, ISO, Insurance Information Institute,





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\$7.0 \$6.2 \$5.9 4 \$

Property/Casualty Insurance Industry Investment Gain: 1994–2013:Q1¹¹ (\$ Billions)



Investment Gains Are Slipping in 2012 as Low Interest Rates Reduce Investment Income and Lower Realized Investment Gains; The Financial Crisis Caused Investment Gains to Fall by 50% in 2008

1 Investment gains consist primarily of interest, stock dividends and realized capital gains and losses.

* 2005 figure includes special one-time dividend of \$3.2B;

Sources: ISO; Insurance Information Institute.



U.S. 10-Year Treasury Note Yields: A Long Downward Trend, 1990–2013*



*Monthly, through June 2013. Note: Recessions indicated by gray shaded columns. Sources: Federal Reserve Bank at http://www.federalreserve.gov/releases/h15/data.htm. National Bureau of Economic Research (recession dates): Insurance Information Institutes.



Treasury Yield Curves: Pre-Crisis (July 2007) vs. Jan. 2013





Distribution of Bond Maturities, P/C Insurance Industry, 2003-2012

2012	16.5%	40.4%		27.6%	9.8%	5.7%
2011	15.2%	41.4%		26.8%	10.3%	6.3%
2010	16.3%	39.5%		26.7%	11.1%	6.4%
2009	16.2%	36.2%		28.7%	11.7%	7.3%
2008	15.7%	32.4%		31.2%	12.7%	8.1%
2007	15.2%	30.0%		33.8%	12.9%	8.1%
2006	16.0%	29.5%		34.1%	13.1%	7.4%
2005	16.0%	28.8%	3	4.1%	13.6%	7.6%
2004	15.4%	29.2%	32	2.5%	15.4%	7.6%
2003	14.4%	29.8%	31.	3%	15.4%	9.2%
00	%	20% 40)% 60)%	80%	1(

The main shift over these years has been from bonds with longer maturities to bonds with shorter maturities. The industry first trimmed its holdings of over-10-year bonds (from 24.6% in 2003 to 15.5% in 2012) and then trimmed bonds in the 5-10-year category (from 31.3% in 2003 to 27.6% in 2012). Falling average maturity of the P/C industry's bond portfolio is contributing to a drop in investment income along with lower yields.

Sources: SNL Financial; Insurance Information Institute.

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)0%



Reduction in Combined Ratio Necessary to Offset 1% Decline in Investment Yield to Maintain Constant ROE, by Line*



Lower Investment Earnings Place a Greater Burden on Underwriting and Pricing Discipline

*Based on 2008 Invested Assets and Earned Premiums

**US domestic reinsurance only

Source: A.M. Best; Insurance Information Institute.









Workers Compensation Operating Environment Rising Medical and Indemnity Lost Time Claim Severities Continue to Rise

Persistently Low Interest Rates Have a Larger Impact on Long Tail Lines Like WC







Workers Compensation Combined Ratio: 1994–2012P



Workers Comp Results Began to Improve in 2012. Underwriting Results Deteriorated Markedly from 2007-2010/11 and Were the Worst They Had Been in a Decade.

Sources: A.M. Best (1994-2009); NCCI (2010-2012P) and are for private carriers only; Insurance Information Institute.







2012p: Preliminary based on data valued as of 12/31/2012.

1991-2011: Based on data through 12/31/2011, developed to ultimate

Based on the states where NCCI provides ratemaking services including state funds, excluding WV; Excludes high deductible policies.

Workers Compensation Medical Severity



Workers Comp Indemnity Claim Costs: Small Increase in 2012

Average Indemnity Cost per Lost-Time Claim

Indemnity Claim Cost (\$ 000s)



2012p: Preliminary based on data valued as of 12/31/2012.

1991-2011: Based on data through 12/31/2011, developed to ultimate

Based on the states where NCCI provides ratemaking services including state funds, excluding WV; Excludes high deductible policies.

Average indemnity costs per claim were up 1% in 2012 to \$22,400



Workers Compensation Premium: Second Consecutive Year of Increase Net Written Premium

(\$ Billions)



Source: 1990–20102p Private Carriers, Annual Statement Data, NCCI.

1996–2012p State Funds: AZ, CA, CO, HI, ID, KY, LA, MD, MO, MT, NM, OK, OR, RI, TX, UT Annual Statements

State Funds available for 1996 and subsequent

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Pvt. Carrier NWP growth was +9.0% in 2012, as pricing reacts to poor underwriting results and low interest rates





Cyber Risk

Cyber Risk is a Rapidly Emerging Exposure for Businesses Large and Small in Every Industry

NEW III White Paper: http://www.iii.org/assets/docs/pdf/paper_CyberRisk_2013.pdf







Data Breaches 2005-2013, By Number of Breaches and Records Exposed # Data Breaches/Millions of Records Exposed



The total number of data breaches and number of records exposed fluctuates from year to year and over time.

*2013 figures as of March 19, 2013. Source: Identity Theft Resource Center





2012 Data Breaches By Category, By Number of Records Exposed

Government/Military and Business organizations accounted for the majority of records exposed by data breaches during 2012.



Source: Identity Theft Resource Center, http://www.idtheftcenter.org/ITRC%20Breach%20Report%202012.pdf.





External Cyber Crime Costs: Fiscal Year 2012

Information loss (44%) and business disruption or lost productivity (30%) account for the majority of external costs due to cyber crime.



sts include direct and indirect costs that could not be allocated to a main external cost category



Main Causes of Data Breach

Negligent employees and malicious attacks are most often the cause of the data breach. Some 39 percent of incidents involve a negligent employee or contractor, while 37 percent concern a malicious or criminal attack.



Source: 2011 Cost of Data Breach Study: United States, Ponemon Institute, March 2012





Average Organizational Cost of a Data Breach, 2008-2011* (\$ Millions)

Government/Military and Business organizations accounted for the majority of records exposed by data breaches during 2012. 2008 \$6.70 2009 \$6.80 2010 \$7.20 2011 \$5.50 \$0 \$2 \$4 \$6 \$8

*Findings of this benchmark study pertain to the actual data breach experiences of 49 U.S. companies from 14 different industry sectors, all of which participated in the 2011 study. Total breach costs include: lost business resulting from diminished trust or confidence of customers ;costs related to detection, escalation, and notification of the breach; and ex-post response activities, such as credit report monitoring. Source: 2011 Annual Study: U.S. Cost of a Data Breach, the Ponemon Institute.

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\$10





The Ever Shifting Legal Liability & Tort Environment **Mixed Experience Depending on the Age of Claims**







Over the Last Three Decades, Total Tort Costs as a % of GDP Appear Somewhat Cyclical, 1980-2013E (\$ Billions)



Sources: Towers Watson, 2011 Update on US Tort Cost Trends, Appendix 1A

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Fort Costs 2.00% as % of GDF 1.75% 1.68% of

GDP in

2013



Liability Costs as a Fraction of GDP, 2011



Sources: US Chamber of Commerce: Insurance Information Institute.


Which Accident Years Generated Reserve Changes in 2012: **Old Claims Still a Problem**

(\$ Billions)



Insurance liabilities, especially in areas such as environmental claims, can be very long-lived and can develop adversely even decades later

Sources: SNL Financial; Insurance Information Institute.



Reserves for older accident years (claims occurring many years ago)



Tort Costs: Rose for Seven Decades: Old Claims Can Be Problematic

Growth in Tort Costs, Current (Nominal) Dollars, 1933-2011 (\$ Millions)



Sources: Trends in Tort Costs, Towers Watson; Insurance Information Institute.

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Explosion in Tort Costs Lasted for Much of the 20th Century Annual Change in Inflation-Adjusted Tort Costs



Sources: Trends in Tort Costs, Towers Perrin, Insurance Information Institute.











Sources: Trends in Tort Costs, Towers Perrin, Insurance Information Institute.

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Change in Tort Costs by Decade, Even After Adjusting for **Inflation, Still Showed Rapid Growth**

Change from Prior Decade



Sources, Trends in Tort Costs, Towers Watson, Insurance Information Institute.



Liability claims from decades past grew with explosive momentum and still increase in cost today

-10% 2010s





Energy Supply and Demand

The World Will Remain Energy Hungry and Demand Will Increase **Steadily for Decades on a Global Scale Utilizing All Fuel Sources**







Global Electricity Generation by Fuel Source, 2010-2040 Billions of kWH



Source: Energy Information Administration, International Energy Outlook 2013.

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Electricity demand will continue to rise on a global scale



Other renewables





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AEGIS 2013 Policyholders' Conference

Baltimore, Maryland July 29 – August 1

