


## An FBI View of Cybercrime and Cyber Security Threats

2019 Casualty Loss Reserve Seminar

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Commitment Beyond Numbers



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September 17, 2019

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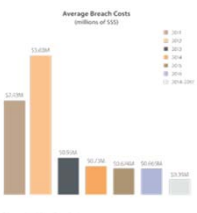
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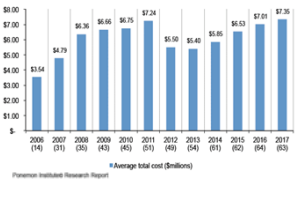
### Average breach cost

Total breach cost for the claim submitted in years 2014-2017 were \$322M. The smallest breach cost reported was \$110 while the largest was \$16.8M. The average cost for the period 2014-2017 was \$394K. The median cost was \$35K.



**Average Breach Costs**  
Millions of \$

Year/Period	Average Breach Cost (Millions of \$)
2014	16.8
2015	11.0
2016	16.8
2017	16.8
2014-2017 (Avg)	3.94
2014-2017 (Med)	0.35



**Figure 2. The average total organizational cost of data breach over the past 12 years**  
(in millions)

Year	Average Total Organizational Cost (Millions)
2006	\$3.54
2007	\$4.79
2008	\$6.36
2009	\$6.66
2010	\$6.75
2011	\$7.24
2012	\$5.90
2013	\$5.40
2014	\$5.85
2015	\$5.43
2016	\$7.01
2017	\$7.38

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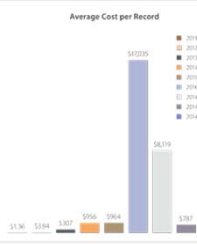
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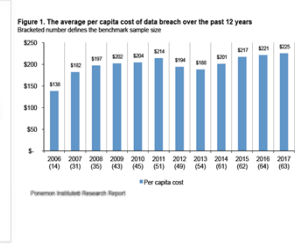
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### Average breach cost per record



**Average Cost per Record**

Year/Period	Average Cost per Record (\$)
2014	16,800,000
2015	110,000
2016	16,800,000
2017	16,800,000
2014-2017 (Avg)	394,000
2014-2017 (Med)	35,000



**Figure 1. The average per capita cost of data breach over the past 12 years**  
(Bracketed number defines the benchmark sample size)

Year	Average Per Capita Cost (\$)
2006	\$178 (14)
2007	\$182 (31)
2008	\$197 (30)
2009	\$202 (43)
2010	\$204 (45)
2011	\$214 (51)
2012	\$194 (49)
2013	\$188 (54)
2014	\$201 (61)
2015	\$217 (62)
2016	\$221 (64)
2017	\$220 (63)

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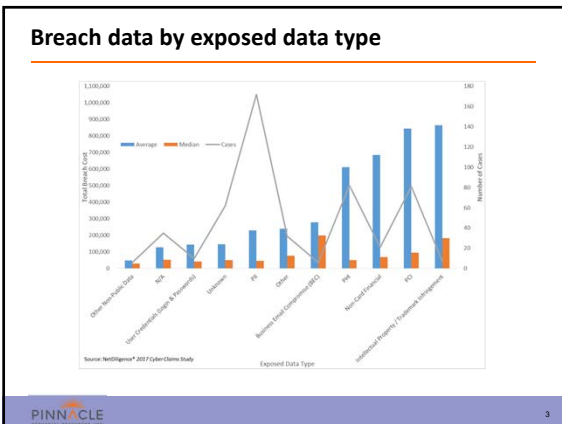
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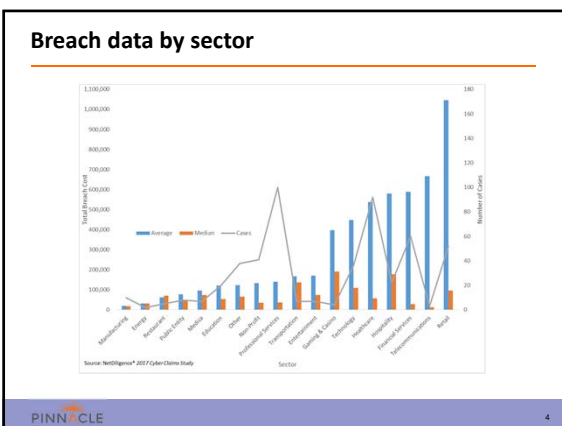
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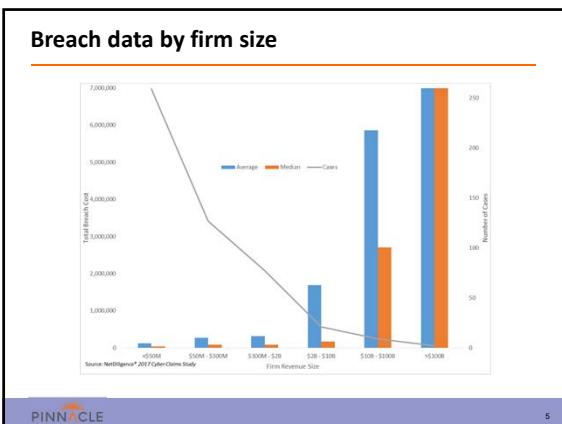
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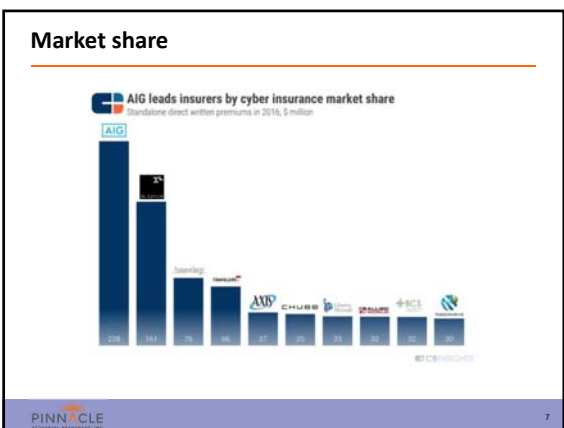
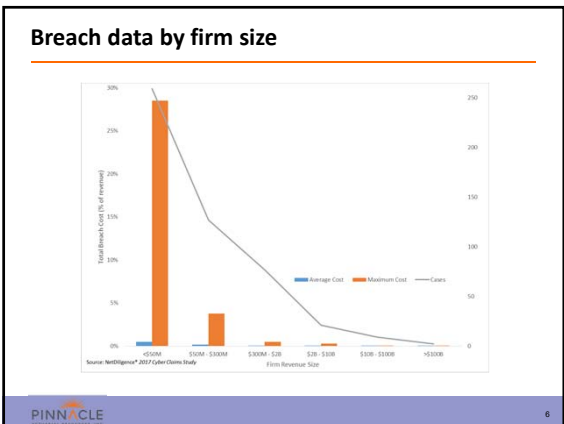
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### Loss ratios

U.S. P/C Industry - Standalone Cybersecurity Direct Pure Loss Ratio\*\* (DPLR)  
 Top 20 Ranked By 2016 Standalone DPLR\*\*  
 (\$ Millions)

Rank	DPLR	Company Name	Standalone Direct Pure Loss Ratio**			
			2015	2016	2017	
1	12	Zurich Financial Services NA Group	16.6	20.6	163.7	149.2
2	79	CNA Insurance Group	—	1.6	—	238.1
3	27	Duke Insurance Group	8.5	9.6	8.9	198.8
4	7	Liberty Mutual Insurance Companies	12.3	22.4	81.9	75.1
5	16	Market Corporation Group	—	24.4	—	88.9
6	10	Alliant Health Insurance Group	29.9	22.4	40.7	50.3
7	2	AU, California Group	113.4	160.7	78.5	61.6
8	14	Sunam Holdings US Group	19.7	2.2	50.0	49.0
9	17	Allghany Insurance Holdings Group	13.1	11.4	36.6	37.2
10	3	Chubb Risk Group	36.9	38.3	22.9	23.4
11	8	Rock Insurance Company	8.6	32.2	27.3	20.9
12	5	American International Group	27.6	23.8	41.3	35.6
13	40	National Mutual Group (NM)	8.1	8.1	40.2	35.9
14	11	Tokio Marine US P/C Group	18.9	30.3	18.9	27.9
15	6	Norfolk Group	146.4	140.1	141.7	26.6
16	37	Truist Medical Insurance Group	0.4	0.4	178.8	23.6
17	32	Integrative Insurance Group	1.6	1.6	13.0	20.0
18	108	Guaranty Insurance Companies	0.1	0.1	10.6	19.2
19	36	MMI Mutual Group	—	0.2	—	19.0
20	48	US Group	1.3	0.2	1.3	17.1
<b>Total**</b>			<b>274.1</b>	<b>269.3</b>	<b>96.4</b>	<b>34.9</b>
<b>Top 10*</b>			<b>869.8</b>	<b>738.4</b>	<b>89.8</b>	<b>28.3</b>
<b>Top 20*</b>			<b>491.3</b>	<b>392.4</b>	<b>87.2</b>	<b>48.1</b>
<b>Total P/C Industry**</b>			<b>493.7</b>	<b>371.1</b>	<b>91.4</b>	<b>40.8</b>

\*\*Based on 2016 like policies and coverage (open/under) direct premium ratios.  
 \*\*Calculated by dividing standalone direct insured losses by standalone direct premium earned.  
 \*\*Top P/C Industry DPLR calculated by dividing industry total standalone direct insured losses by industry total standalone direct premium earned.  
 Source: A.M. Best data and research.



### Rate indication example

Beasley Insurance Company, Inc.  
BBB (Admitted, Surplus and Program) – For Internal Use Only  
Indianapolis, Indiana  
Evaluated as of December 31, 2017

Deviation of Rate Level Indication  
Countrywide

Countrywide	(1)	(2)	(3)		(4)	(5)	(6)	(7)	(8)
			Original Earned Premium	Trended Premium					
Report Year					Loss & ALAE Trend	Countrywide Trended UL	Loss & ALAE Ratio		
2013	18,383,717	0.7262	13,883,808	14,097,300	1.4887	10,368,121	476.59%		
2014	20,086,888	0.7758	18,342,768	4,990,000	1.1784	6,799,882	31.53%		
2015	40,872,595	0.8219	33,883,186	5,441,000	1.2763	6,906,878	20.56%		
2016	34,562,412	0.8744	47,654,100	11,029,800	1.1837	14,208,889	29.82%		
2017	39,264,683	0.8902	39,892,100	28,326,200	1.0942	30,888,389	51.85%		
Total	151,068,765		172,278,013	64,891,200		79,781,413	46.81%		

(9)	ULAE to Loss and ALAE Ratio						3.22%
(10)	Selected Trended Ultimate Loss and LAE Ratio = (8a) ÷ [(4)(9)]						47.55%
(11)	Total Historical Claims in Experience Period						2,131
(12)	Credibility of Countrywide Experience minimum (100%, Square root [(11) / 3000])						28.29%
(13)	Permissible Loss and LAE Ratio (Table 9.5)						60.89%
(14)	Selected Annual Loss Trend (Table 9.1)						8.00%
(15)	Trended Permissible Loss and LAE Ratio = (13) ÷ [(12) + (14)]						60.87%
(16)	Credibility Weighted Selected Loss and LAE Ratio = [(2)(15)] ÷ [(9)]						35.87%
(17)	Indicated Countrywide Rate Change = [(16) / (13)] - 100%						-19.17%

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### Market trends

According to **62%** of brokers, Cyber coverage is becoming more consistent, but it is still difficult to compare policies

Over **80%** noted buyers switching from Cyber endorsements to stand-alone policies - **43%** noted that this occurred frequently

**Pricing is seen as less consistent than last year, many brokers noting soft market conditions and broadening coverage without adequate rate consideration**

Competition is driving pricing  
 Competition between carriers was seen to prevail over actuarial assessment of the cost of risk. One respondent noted it's "becoming a sales game, rather than the pricing of risk. This is causing a perpetually softening market."

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### Thank you!

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