
MEMORANDUM

TO: Innovation and Technology (EX) Task Force

FROM: Denise Matthews
Director, Data Coordination and Statistical Analysis

DATE: September 12, 2019

SUBJECT: Report on the Cybersecurity Insurance and Identity Theft Coverage Supplement

The purpose of this report is to provide the Innovation and Technology (EX) Task Force with the information filed by insurers in the Cybersecurity Insurance and Identity Theft Coverage Supplement (Supplement) to the property/casualty (P/C) annual financial statement for 2018. The NAIC also receives data from Surplus Lines insurers, which is included in this report.

Overview

Cybersecurity continues to be crucial to effective and efficient operation of U.S. businesses. Cybersecurity breaches can cause a major drain on the U.S. economy. Insurers face cybersecurity risks in their daily operations, as do banks and securities firms. The financial services sector is susceptible to cyber threats for multifaceted reasons. Financial firms receive, maintain and store sensitive personal financial information for their customers. Insurers, in many cases, receive personal health information in addition to personal financial information. Insurers receive information from both policyholders and claimants.

Cybercriminals are interested in fraudulently obtaining and using sensitive information for financial gain. We know from observation of the dark web that personal health information continues to be more valuable than personal financial information. Nation states are also known to sponsor cyberattacks for espionage or to gain access to corporate trade secrets and business processes. Ransomware attacks are increasing and a continued area of concern because they are used to extort payments from compromised firms.

Insurers are selling cyber risk-management services and cybersecurity insurance products to businesses and individuals. It is to gain information and understanding about cybersecurity insurance markets that led regulators to design and implement the Supplement.

This year, insurers reported information based on the 2018 calendar year results. Based on the data filed, approximately 500 insurers have provided businesses and individuals with cybersecurity insurance, with 96%¹ of the insurers writing cybersecurity insurance as part of a package policy.

An overview shows a cybersecurity insurance market of roughly \$2.03 billion in direct written premiums for insurers required to file the Supplement. This is a slight increase from last year's direct written premiums of \$1.89 billion. Insurers writing stand-alone cybersecurity insurance products reported approximately \$1.11 billion in direct written premiums, and those writing cybersecurity insurance as part of a package policy reported roughly \$915 million in premium writings.

The remainder of this report will provide figures filed for each category and explain assumptions used to arrive at the \$2.03 billion in direct written premiums by admitted insurers. This report will also discuss the entities' reporting data and assumptions related to entities where data on package policies is missing from the data set.

Cybersecurity Insurance Coverage

The Supplement requires insurers to report the following information on stand-alone cybersecurity insurance policies:

- Number of claims reported (first-party and third-party).
- Direct premiums written and earned.
- Direct losses paid and incurred.
- Adjusting and other expenses paid and incurred.
- Defense and cost containment expenses paid and incurred.
- Number of policies in-force (claims-made and occurrence).

¹ The number in NAIC's report from last year stated 47%; however, the number was actually 96%.

The Supplement requires insurers to report the following information on cybersecurity insurance coverage sold as part of a package policy:

- Number of claims reported (first-party and third-party).
- Direct premiums written and earned, if available or estimable.
- Direct losses paid and incurred.
- Adjusting and other expenses paid and incurred.
- Defense and cost containment expenses paid and incurred.
- Number of policies in-force (claims-made and occurrence).

Stand-Alone Policies

As noted in the 2018 report, the gap between earned and written premiums is indicative of a growing market. That gap has decreased between 2017 and 2018 indicating the market is maturing in the stand-alone cybersecurity insurance marketplace. Insurers writing this coverage reported \$1.11 billion in direct written premiums spread among 46 groups of insurers (140 individual insurers). Direct earned premiums reported were \$1.03 billion. The top 10 insurers wrote 82.3% of the total U.S. market, with the top 20 writing 94% of the market (Exhibit 1). The stand-alone cybersecurity insurance written premiums for 2018 increased by 12.02% since last year.

The loss ratios for stand-alone cybersecurity insurance range from zero to 106%. The loss ratios from the top 20 standalone insurers range from .03% to 82.7%. These loss ratios are listed in the chart below. It is important to note that the cybersecurity insurance market for cybersecurity insurance products is still nascent; therefore, an element of catastrophe exposure exists. A loss ratio of zero might be indicative of sound underwriting, but it might also simply indicate the selected businesses did not experience a cyber event in 2018.

Exhibit 1 Standalone Cyber Insurance Market Share by Individual Insurers 2018 Data Year						
Rank	Company Code	Company Name	Direct Written Premium	Market Share	Loss Ratio (including defense and cost containment)	Cumulative Market Share
1	968	AXA INS GRP	255,874,528	23.0%	57.2%	23.0%
2	12	AMERICAN INTL GRP	232,312,591	20.9%	36.1%	43.8%
3	3548	TRAVELERS GRP	112,920,719	10.1%	27.7%	54.0%
4	37540	BEAZLEY INS CO INC	100,860,728	9.1%	6.1%	63.0%
5	212	ZURICH INS GRP	43,315,425	3.9%	18.2%	66.9%
6	23	BCS INS GRP	39,534,843	3.5%	13.5%	70.5%
7	158	FAIRFAX FIN GRP	38,145,472	3.4%	23.4%	73.9%
8	3098	TOKIO MARINE HOLDINGS INC GRP	34,858,640	3.1%	38.2%	77.0%
9	111	LIBERTY MUT GRP	33,427,580	3.0%	43.6%	80.0%
10	218	CNA INS GRP	25,032,362	2.2%	13.7%	82.3%
11	4698	ASPEN INS HOLDING GRP	21,073,367	1.9%	61.6%	84.2%
12	3416	AXIS CAPITAL GRP	19,592,044	1.8%	1.6%	85.9%
13	785	MARKEL CORP GRP	16,542,650	1.5%	60.2%	87.4%
14	4904	INTACT FINANCIAL GRP	13,439,331	1.2%	53.2%	88.6%
15	501	ALLEGHANY GRP	11,101,174	1.0%	12.1%	89.6%
16	4666	HISCOX INS GRP	10,595,387	1.0%	26.8%	90.6%
17	98	WR BERKLEY CORP GRP	10,176,206	0.9%	20.4%	91.5%
18	31	BERKSHIRE HATHAWAY GRP	10,069,160	0.9%	82.7%	92.4%
19	761	ALLIANZ INS GRP	9,743,451	0.9%	.03%	93.2%
20	783	RLI INS GRP	8,843,152	0.8%	4.9%	94.0%

Package Policies

The reported direct written premiums for cybersecurity package policies totaled \$898.3 million. This year, only 9 out of 491, down from 16 out of 462 based on 2017 data, reported no premiums, generally indicating they were unable to break out the premium change for the cybersecurity coverage from the remainder of the package policy. To arrive at a figure representing a complete market, NAIC staff assumed the 9 insurers writing cybersecurity package policies where premiums were not reported would have reported premiums in the same ratio as those insurers reporting premiums.² The NAIC estimates \$16.8 million of direct written premiums for those 9 companies. As a result, by extrapolation, the NAIC estimates the direct written premiums sold through package policies was approximately \$915

² Nine of the 491 insurers reporting no premium represent 1.83% of direct written premiums for package policies.

million. This is an increase of a little more than 2%. The top 10 insurers writing package cyber insurance products represent 71.8% of the market, and the top 20 insurers represent 82.8% of the market. (See Exhibit 2.)

Exhibit 2 Package Cyber Insurance Market Share by Individual Insurers 2018 Data Year						
Rank	Company Code	Company Name	Direct Written Premium	Market Share	Loss Ratio	Cumulative Market Share
1	626	CHUBB LTD GRP	320,729,113	35.7%	28.6%	35.7%
2	218	CNA INS GRP	58,324,863	6.5%	32.5%	42.2%
3	3416	AXIS CAPITAL GRP	56,408,989	6.3%	9.1%	48.5%
4	91	HARTFORD FIRE & CAS GRP	39,704,460	4.4%	16.4%	52.9%
5	3219	SOMPO GRP	34,054,366	3.8%	56.7%	56.7%
6	3548	TRAVELERS GRP	33,309,900	3.7%	4.5%	60.4%
7	111	LIBERTY MUT GRP	33,067,460	3.7%	34.1%	64.1%
8	23	BCS INS GRP	29,969,858	3.3%	6.3%	67.4%
9	457	ARGO GRP US INC GRP	20,593,376	2.3%	27.4%	69.7%
10	31	BERKSHIRE HATHAWAY GRP	18,564,643	2.1%	68.9%	71.8%
11	244	CINCINNATI FIN GRP	16,785,618	1.9%	7.0%	73.6%
12	88	THE HANOVER INS GRP	12,761,012	1.4%	9.1%	75.1%
13	69	FARMERS INS GRP	12,640,773	1.4%	3.6%	76.5%
14	37540	BEAZLEY INS CO INC	10,087,075	1.1%	24.4%	77.6%
15	3098	TOKIO MARINE HOLDINGS INC GRP	9,733,560	1.1%	3.4%	78.7%
16	98	WR BERKLEY CORP GRP	9,283,630	1.0%	0.3%	79.7%
17	7	FEDERATED MUT GRP	8,879,172	1.0%	2.5%	80.7%
18	140	NATIONWIDE CORP GRP	7,237,205	0.8%	15.1%	81.5%
19	785	MARKEL CORP GRP	5,970,595	0.7%	0%	82.2%
20	4790	MMIC GRP	5,804,655	0.6%	14.6%	82.8%

Total Admitted Market

Thus, \$2.03 billion is the reported and estimated total of direct written premiums for cybersecurity insurance coverage on a stand-alone and package policy basis for 2018 by insurers obligated to complete and submit NAIC statutory financial statements. This is a 6.81% increase from last year's direct written premium.

In order to provide perspective and context, it should be noted that \$2.03 billion in direct written premiums is a small percentage of the \$621 billion³ in net written premiums reported by P/C insurers for 2018. All of these writings are supported by \$780 billion⁴ in policyholder surplus held by insurers.

Surplus Lines Insurers

The reported information for admitted insurers is limited to only those insurers required to file a P/C annual financial statement with the NAIC. To evaluate this limitation, one must understand the types of insurers writing P/C business in the U.S. and whether each type is required to report information to state insurance regulators. This may be well understood, but it is important for readers not completely familiar with the U.S. regulatory framework to understand, from a state insurance regulator's perspective, the admitted and surplus lines markets.

Generally, the U.S. regulatory system for P/C insurance views insurers as belonging in one of three classifications: 1) domestic; 2) foreign; or 3) alien. A domestic insurer is one licensed or admitted in a state it selects to be its home state. A foreign insurer is one licensed or admitted in a state that is domiciled in another state. An alien insurer is one domiciled in another country. Generally, the states insist insurers be licensed or admitted in the state as a prerequisite for selling P/C insurance products. However, state legislatures recognize not every person or business seeking coverage for unique risks can find it from a licensed or admitted insurer. Thus, state legislatures have allowed non-licensed insurers to write P/C business under certain circumstances.

The insurers doing business as non-licensed or non-admitted insurers are known as surplus lines insurers. They serve as an alternative marketplace to provide coverage for unique exposures and often serve as a testing ground for product innovations before they become mainstream. Offering coverage on a surplus lines basis allows the insurer greater freedom in pricing and does not require formal prior approval of contract language.

This is the third year the NAIC received information filed by surplus lines insurers. Surplus lines data received indicate premiums of \$1.2 billion in cybersecurity stand-alone package policies in 2018, which is a 36.3% increase since last year. The surplus lines premium

³ http://naic.org/documents/topic_insurance_industry_snapshots_2018_ye.pdf.

⁴ Ibid.

for cybersecurity package policies for 2018 is \$368.13 million. This is a decrease of 17.2% from last year's numbers. The total written premium for both types of policies is \$1.57 billion, indicating a total increase of 23.7%.

The Overall Cybersecurity Insurance Market

For 2018, the total cybersecurity insurance market in the U.S. was approximately \$3.6 billion, which is a 14.54% increase from last year. This figure includes the stand-alone and package cybersecurity insurance premiums reported in the NAIC statutory financial statements, an estimate of the missing package cybersecurity premiums where insurers were unable to separate cybersecurity premiums from the package premium, and the information reported by surplus lines insurers.

The vast majority of third-party coverage for standalone cybersecurity policies continue to be written on a claims-made basis. From a solvency risk-management perspective for insurers, the claims-made contract generally serves to limit exposure to the insurer compared to an occurrence policy by placing time limits on when the insured event must be reported to the insurer. While this is good for insurers, it is a coverage limitation from a policyholder perspective.

Identity Theft Coverage

From a market perspective, the year-end 2018 data continues to indicate that U.S. insurers' most common product related to cybersecurity is in the form of identity theft coverage, where insurers wrote approximately 20.7 million policies including identity theft coverage as part of a package policy. This compares to only 236,925 policies that were stand-alone identity theft coverage.

The year-end 2018 data for identify theft coverage indicates the stand-alone premium on the 236,925 policies was \$9.3 million, or approximately \$39.35 per policy. The year-end data for identity theft coverage shows reported package policy premiums of \$216.6 million and 20.7 million policies sold, which is approximately \$10.45 per policy. It is important to note the cost of purchasing this coverage varies from insurer to insurer depending on other coverages purchased with the homeowner's policy or another package policy. Additionally, due to recent data breaches, many people are receiving identity theft coverage as a result of the breach. It is also important to keep in mind that oftentimes another policy may include this coverage for no charge; therefore, the cost per policy may be slightly higher or lower.

Conclusion

This report summarizes some interesting findings. The data and estimates based on the data indicate the total U.S. market for cyber insurance is roughly \$3.6 billion. Having a time series will allow state insurance regulators to track market growth and pinpoint areas where further regulatory oversight may be needed. The data indicate the cyber insurance market slowed between 2017 and 2018.

It is important to mention that reinsurance is not reflected in the data. An estimate by Aon indicates that \$800 million in cyber reinsurance was placed in 2018. AM Best postulates that treaty reinsurance is more widely available than facultative reinsurance. AM Best also said that most treaties are being written as quota share reinsurance treaties. It is noteworthy to mention that most of the quota share treaty agreements include a loss ratio cap. A systemic event continues to be the top threat to cyber insurers' solvency.⁵

The chart below depicts information collected from all four years of data collection.

Year	Direct Written Premium Stand-alone Cyber Policies	Direct Written Premium Package Cyber Policies	Direct Written Premium Stand-alone Surplus Lines Cyber Policies	Direct Written Premium Package Surplus Lines Cyber Policies	Stand-alone Policy Totals (Admitted and Surplus Lines)	Package Policy Totals (Admitted and Surplus Lines)	Total Cyber Premiums Written
2015	\$ 483,197,973	\$ 932,645,734	Not Reported	Not Reported	\$ 483,197,973	\$ 932,645,734	\$ 1,415,843,707
2016	\$ 811,057,406	\$ 863,769,169	\$ 552,226,000	\$ 156,285,000	\$ 1,363,283,406	\$ 1,020,054,169	\$ 2,383,337,575
2017	\$ 994,259,551	\$ 896,424,050	\$ 765,129,000	\$ 431,423,000	\$ 1,759,388,551	\$ 1,327,847,050	\$ 3,087,235,601
2018	\$1,113,865,104	\$915,046,459	\$1,200,880,000	\$368,134,000	\$ 2,314,745,104	\$ 1,283,180,459	\$ 3,597,925,563

The 2018 data indicates cyber insurance continues to be an evolving market. According to a recent survey conducted by the Council of Insurance Agents and Brokers (CIAB), the take-up rate for cyber insurance remains relatively low at 33%, while capacity appears to be plentiful or is increasing. Their report also stated that \$2.8 million is the typical cyber insurance policy limit.⁶

Caveats

In the 2015 report, surplus lines premium information was not included; however, this data was collected for the 2016, 2017 and 2018 data years.

⁵ AM Best's Market Segment Report, June 17, 2019.

⁶ Ciab.com/resources/cyber-insurance-by-the-numbers

What Others are Saying About the Cybersecurity Insurance Markets

“Most companies writing cyber insurance are remaining prudent about their total exposure, and cyber exposure relative to policyholder surplus is limited.” *AM Best*.

“Pricing will remain stable, and capacity will keep up with demand” and “Carriers will begin to address whether cyber is a product or a peril.”—*Willis Towers Watson*

“Cloud insecurity grew in 2018, and unfortunately, it will carry on growing even more in 2019. Increasing amounts of data are being deployed from disparate parts of organizations, with more and more of that data ending up unsecured. Despite the continual publicity around repeated breaches, the majority of organizations do not have good housekeeping deployed and enforced across their whole data estate in the cloud.”—*Digital Insurance*

“Cyber risk is now widely accepted as being one of the top emerging risks.”—*JLT Specialty*

In 2018, the greatest challenge organizations will face is simply keeping up with and staying informed about the evolving cyber risk landscape. The threats that can impact organizations vary widely by industry, size, and regions. It is incumbent upon organizations to understand the risks they face and to address them on a proactive basis.”—*Aon*

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