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RESEARCH REPORT

on

Financial Stability Board’s Task Force on Climate-related Financial Disclosures (TCFD)

and

National Association of Insurance Commissioners (NAIC) Climate Risk Disclosure Survey

Responses Compared Qualitatively and Quantitatively:

Eight Companies in 2019—Twenty-four Companies in 2020

American Academy of Actuaries

Climate Change Joint Task Force

Climate-Related Financial Disclosures Work Group

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Section 1: Introduction and Summary of Prior Research

In December 2020, the Academy presented to the National Association of Insurance Commissioners (NAIC) Climate and Resiliency (EX) Task Force an overview of results from its analysis of company responses to the NAIC Climate Risk Disclosure Survey (“NAIC survey”) for 2019.¹ The survey, consisting of nine questions requiring Yes or No responses and eight questions requiring narrative responses, has been required of all companies writing more than \$100 million in premiums in six states.² The overarching conclusions presented were: a) that a company’s response to the Yes/No questions should be interpreted with caution—even for a single company our analysis revealed differences over time, across questions, and across lines of business that raised concerns along with potential disconnects between the Y/N and the narrative responses; and b) that the robustness of the narrative responses varied significantly by size of the company and by line of business.

In January 2021, the Academy presented more detailed analysis of the same NAIC Climate Risk Disclosure Survey responses to the NAIC Climate and Resiliency (EX) Task Force.³ The conclusions from that presentation were: a) that there was some evidence of inattention or confusion in responses to Y/N questions; that certain questions received predominantly Yes responses, others predominantly No responses; b) that systematic, qualitative analysis made clear that most companies in all lines of business provided narrow, narrative responses to each of the eight NAIC questions; and c) that in each line of business, a small percentage of companies provided broad responses.

To generalize these conclusions, we found that there were relatively few robust responses to the NAIC survey; that there was a high degree of variability in response based on line of business, size of company, and commitment of the company to addressing climate change; that some issues were well covered and others were not; and finally, that the survey responses made it difficult to benchmark responses and, thus, difficult to assess the relative responsiveness of individual companies.

In November 2021, the NAIC Climate and Resiliency (EX) Task Force exposed for public comment a proposal which might be considered “TCFD Plus,” that is, it consists of a set of questions organized by the four themes central to the Financial Stability Board’s Task Force on Climate-related Financial Disclosures (TCFD) guidance, to be addressed in a set of narrative responses. In addition, the Task Force has proposed adding a set of Yes/No questions adapted from the current NAIC disclosure survey.

In order to assist the Task Force in its consideration of this exposed draft, we report here on an effort by the Academy’s Climate Related Financial Disclosures Work Group and overseen by its Climate Change Joint Task Force to assess the challenges and opportunities which might be created by the NAIC adoption of a TCFD-based disclosure requirement. To do so, we report

¹ [December 4, 2020, presentation to Climate and Resiliency \(EX\) Task Force](#); NAIC Climate Disclosure Survey responses were obtained from [this site](#) maintained by the California Department of Insurance.

² The six states requiring completion of the Climate Disclosure Survey were California, Connecticut, Minnesota, New Mexico, New York, and Washington.

³ [January 27, 2021, presentation to Climate and Resiliency \(EX\) Task Force, Climate Disclosures Workstream](#).

below on a qualitative analysis in which we compare the TCFD responses of eight companies⁴ which filed those responses with the NAIC for 2019 (Section 2). We follow that by presenting results of an initial quantitative analysis of the TCFD filings by twenty-four companies in 2020, comparing those responses both to the NAIC survey responses by those same companies in 2018 and comparing those responses to the responses by all groups which responded to the NAIC survey in 2018 (Section 3). Finally, we present lessons and implications derived from these analyses (Section 4). The two primary implications involve further analysis of options for multiple-choice questions and development of training and education options for those responsible for completing the disclosure responses.

Section 2: Qualitative Analysis

For each of the eight companies that filed TCFD reports for 2019, at least two members of our CRFD project group read the TCFD report and also read the NAIC Climate Disclosure Survey response for the same company from the prior year. This close reading of the two reports allowed a qualitative analysis of the eight companies. Once completed, the results from the eight comparisons were examined by the work group as a whole.

Several **themes** emerged from the work group’s analysis:

1. The information provided in the TCFD and NAIC responses overlapped substantially;
2. TCFD responses contained much more information on issues of governance;
3. TCFD responses contained much more information on quantitative metrics and model results;
4. TCFD responses contained much more information on opportunities created by climate change;
5. NAIC responses contained much more information on operational risk;
6. NAIC responses contained somewhat more information on underwriting risk; and
7. NAIC responses contained much more information on engagement with policyholders and key stakeholders.

Each of these themes is discussed and illustrated in the following sections.

1. The information provided in the TCFD and NAIC responses overlapped substantially
In every case, much of the material presented in the reports appeared in both reports. An anecdotal observation from a member reviewing one of the companies noted that it appeared that “in general, the NAIC survey responses appear to be mostly taken from the first paragraphs in each of the TCFD sections (high level summaries of the sections), with some additional language taken from the TCFD’s body. Or, the other way around, the TCFD was drawn by taking the NAIC survey responses verbatim and expanding upon them.” These observations suggest the similarity in the information required to respond to the two distinct disclosures. In several instances, companies may have been drawing upon one of the two reports to complete the other. In at least some of those instances, both reports may have been

⁴ The TCFD responses for 2019 were obtained from [this site](#). The eight companies were AIG, Allianz, Assurant, AXA, QBE, Swiss Re, Travelers, and Zurich.

drawing material from other reports which companies produced. For example, since 2015, AXA has produced an annual “Climate Report,” with material relevant to both TCFD and NAIC responses, and most of the companies included in our analysis produce ClimateWise reports for the University of Cambridge (UK) Institute for Sustainability Leadership.

2. TCFD responses contained much more information on issues of governance

Given that the TCFD includes corporate governance around climate risks as one of its four themes, and given that the NAIC Climate Risk Disclosure Survey did not include any question specifically aimed at governance, it is not surprising that TCFD responses included more information than did the NAIC Survey responses. We noted that many companies included some information on governance in their NAIC disclosures, even if not specifically requested, while the range of information provided in the TCFD responses varied considerably. Nonetheless, the reviews of every company noted the more detailed discussion of governance issues in the TCFD reports. For example, the review of Allianz’s responses notes: “more detail on operations of ESG [Environmental, Social and Governance] Board and Group Finance and Risk Committee” in the TCFD response compared to the NAIC Disclosure Survey.

3. TCFD responses contained much more information on quantitative metrics and model results

While TCFD does not require quantitative metrics nor model results, they are encouraged; they are rarely presented in responses to the NAIC survey. These metrics and model results take many different forms. For example, AXA includes scenario testing results, while Swiss Re provided a range of numerical results and assessments in the TCFD response that did not appear in their NAIC survey.

4. TCFD responses contained much more information on opportunities created by climate change

Unlike the NAIC survey, the TCFD urges attention to the opportunities created by climate change in addition to the risks. As a result, it is not surprising that TCFD responses often include reference to opportunities specific to particular companies. For example, AIG elaborates on its investment in sustainable cities with its investment in Enwave’s Chicago-based ice storage system, as well as its Wildfire Protection Unit, and commercial real estate investments. Similarly, AXA discusses insurance products that have environmental benefit, e.g., parametric solutions, while Zurich mentions opportunities created for its interactions with customers, for green investing, and for investing generally. Zurich is one of the few companies that mentions many of these same opportunities in its NAIC survey.

5. NAIC responses contained much more information on operational risk

The carbon footprint created by a company’s operations is a standard feature of most companies’ NAIC surveys but not usually found in TCFD responses. Specific details of company processes used to determine and assess risks are usually more fully discussed in the NAIC surveys than in the TCFD responses. For example, in its NAIC survey response, QBE explains its ESG Risk Standard (climate risk within 12 months) and Emerging Risk Standard (climate risk beyond 12 months), which fall under Strategic Risk, one of eight material risk classes. These risk standards are not discussed in its TCFD response. QBE also discusses its

risk management process involving five steps—horizon scanning and risk identification, risk analysis, risk evaluation, risk treatment, and risk monitoring and review after implementation. This process also does not appear in the company’s TCFD filing.

6. NAIC responses contained somewhat more information on underwriting risk

While neither NAIC nor TCFD responses addressed the likely impact of climate change on liabilities as thoroughly as they discussed impacts on assets, the NAIC responses often included some more detail relevant to the assessment of liabilities and underwriting risk. In AXA’s NAIC disclosure, there is discussion of climate risk impact on major lines of business, which is not mentioned in the TCFD report. In addition, AXA’s NAIC responses give several examples of weather-driven phenomena that the company is monitoring—e.g., change in mean precipitation, sea level rise, snow and ice, change in droughts, etc. There is little mention of this in the TCFD report.

7. NAIC responses contained much more information on engagement with policyholders and key stakeholders

With specific questions in the NAIC survey aimed at company engagement, and little specific TCFD guidance aimed at engagement, it is not surprising that the NAIC responses contain more information on engagement with both policyholders and key stakeholders. For example, Allianz discusses its engagement with investee companies in its NAIC response, but not in its TCFD. Assurant has extensive discussion of risk mitigation for policyholders and its engagement with key constituencies in its NAIC but not in its TCFD responses. And QBE in its NAIC but not TCFD response offers numerous specific examples of efforts to assist policyholders in mitigating climate change impacts. For example, QBE discusses premium credits for winemakers that complete a sustainable winegrowing program; underwriting a company providing affordable solar power to world’s poorest countries; expanding its renewable energy portfolio to include floating solar farms; and a partnership with GCube for wind, solar, biomass, wave, tidal and energy storage asset owners to identify, quantify, mitigate and insure risk efficiently and effectively. We note that QBE does provide similar information about its engagement with key constituencies in both NAIC and TCFD responses.

Section 3: Quantitative Analysis

For the 2018 filings, the NAIC offered for the first time the option for companies to submit a TCFD report in lieu of responding directly to the NAIC survey questions. Only one company—AIG—took advantage of that option. For 2019, the eight companies discussed in our qualitative analysis took advantage of that option. For 2020, twenty-four companies did so. (The list of those companies can be found in Table 2, below). For an initial quantitative analysis, focusing on the length of the responses, we have turned to the larger set of companies filing for 2020.

We began by analyzing the set of twenty-four companies with TCFD responses in 2020 and compared their responses to the responses provided by those same companies to the NAIC survey in 2018. (Note: We looked back two years in order to be able to examine all twenty-four companies against the same year’s filing, which served as the contextual basis for the analysis of the eight companies filing TCFDs for 2019.) In addition, we compared the filings of those

companies to the filings by all groups which filed NAIC responses in 2018. For this analysis, we have solely examined the length of the responses measured by the number of words used in the response. While the lengths of the responses are the result of many factors (including the extent to which graphics are relied on, the extensiveness of legal boilerplate language, the “wordiness” of writing styles), one observation from our prior qualitative analysis was that longer responses tended to be more robust, and more likely to address issues more fully. Hence, for this analysis we continue to interpret length as a measure of robustness and refer to results below interchangeably either in terms of robustness or length.

We found three results most interesting (see a fuller set of results reported in Table 1).

First, if we compare the median length in words of the NAIC responses by all companies and the NAIC responses by the twenty-four TCFD filers, we see that the TCFD filers were, by and large, filing much more robust responses to the NAIC survey than the average company. The median number of words in the 2018 NAIC responses by the twenty-four companies that filed TCFD responses in 2020 was 3,001, more than four times as many as the median number of words used by all groups which filed NAIC responses in 2018: 701. Put another way, before they ever filed TCFD responses, the twenty-four companies were already providing relatively more robust responses than most companies responding to the NAIC survey.

Second, the TCFD responses filed by the twenty-four companies in 2020 were significantly longer than the NAIC responses filed by those same companies in 2018. The mean number of words in the TCFD responses was 13,048 compared to 4,251 in the NAIC responses; however, this difference is partly the result of one company, Sun Life, submitting its entire annual report as its TCFD response. If we exclude the Sun Life response, the mean TCFD words are 8,015, still almost double the NAIC responses. Or, we could compare the median TCFD words for all twenty-four companies (5,212) to the median for the same companies in their NAIC responses (3,001). By any measure, even for a set of companies providing relatively robust responses to the NAIC survey, the TCFD responses did cover more ground.

Finally, if we examine the variability of responses using the coefficient of variation (“CV”) computed as standard deviation/mean, we note that the twenty-four TCFD filers were much less variable in their NAIC filings than were companies as a whole, with a CV of 0.88 for the twenty-four companies compared to a CV of 1.46 for all four hundred and fifty-five groups that responded to the 2018 NAIC survey. When we turn to the variability of the TCFD filings, we see a CV of 1.92, more than double the variability of the NAIC filings by the same companies. However, when we calculate the CV excluding Sun Life, we obtain a value of 1.19; this is more variable than the NAIC filings by the twenty-four companies, but less than the variability of the NAIC filings by all groups in 2018.

Table 1

	NAIC for All Reports, in 2018	NAIC 2018 for Reports of Companies which Filed TCFD in 2020	TCFD Reports Filed in 2020
Mean Words	1,188	4,251	13,048
Median Words	701	3,001	5,212
StdDev	1,733	3,755	25,016
Min	8	64	1,837
Max	16,145	16,086	128,822
StdDev/Mean	1.46	0.88	1.92
COUNT	455	24	24

Source: American Academy of Actuaries calculations based on NAIC Disclosure Survey and TCFD responses as made available on the NAIC Climate Disclosure Survey [website](#) maintained by the California Department of Insurance.

Having examined the TCFD filings from all twenty-four companies as a group, we investigated any links between the sizes of the companies and their lines of business, on one hand, and the length of their TCFD responses on the other. For this purpose, we combined the TCFD response data with information on the companies drawn from the Statutory Insurance Filings data available in S&P's Global Market Intelligence database. We examined all groups which reported at least \$1 million in written premiums in 2020 in any line of business (Health, Life, Property and Casualty). For each line of business or combination of lines of business (e.g., groups that wrote more than \$1 million in premiums in both Life and Property and Casualty), we calculated the 25th, 50th, and 75th percentile in the distribution of premiums written. We then located each of the twenty-four companies in the appropriate distribution (see details in Table 2).

Three observations seem most revealing: first, most of the TCFD filers (eighteen of twenty-four) are in the top 25th percentile of companies writing policies in comparable lines of business. Second, the majority of TCFD filers (fourteen of twenty-four) are groups with business in more than one line, with most of the combination groups (ten of fourteen) combining Life and Property and Casualty. Controlling for line(s) of business, the relationship between size of company and length of response is weak. Of the six TCFD filers that are not in the top 25th percentile of their reference distribution, four filed reports that were less than the overall median length (i.e., for all twenty-four companies), one filed a report 2.5 times as large as the median, and one submitted its entire annual report (by far the longest submission). At the same time, for the eighteen TCFD filers that are in the top 25th percentile of their respective distributions, their reports range from one-third of the median length to more than five times the median. In other words, TCFD filers tend to be larger companies doing business in more than one line of business. But, the size of the company does not seem to determine the length of the TCFD response.

Table 2

Group Name	# of Words, TCFD 2020	Type	Gross Written Premiums (\$M)	Rank (Percentile of all Insurance Groups)
Centene Corporation	9,207	H+L	\$74,315	Top 25th
Aetna, Inc	9,131	H+L	\$56,524	Top 25th
Cigna Health Group	2,293	H+L	\$30,795	Top 25th
Sun Life Financial Group	128,822	H+L	\$2,321	Bottom 25
PRUDENTIAL OF AMER GRP	2,216	L	\$37,231	Top 25th
Symetra	1,887	L	\$4,768	Top 25th
CNO Financial Group	23,180	L	\$3,718	Top 25th
Unum Group	3,590	L	\$1,248	50th - 75th
Allstate Insurance Company	2,845	L+P&C	\$41,266	Top 25th
American International Group	26,506	L+P&C	\$30,577	Top 25th
AEGON US Holding Group	3,119	L+P&C	\$21,991	Top 25th
Hartford Fire and Casualty	9,624	L+P&C	\$16,372	Top 25th
Allianz Insurance Group	13,722	L+P&C	\$16,028	Top 25th
Zurich American	4,960	L+P&C	\$14,805	Top 25th
Assurant Inc Group	5,491	L+P&C	\$8,438	Top 25th
Munich Re	4,892	L+P&C	\$4,456	50th - 75th
Swiss Re Group	14,545	L+P&C	\$4,107	50th - 75th
MAPFRE Insurance Group	3,308	L+P&C	\$2,361	50th - 75th
Liberty Mutual Insurance Company	5,304	P&C	\$36,173	Top 25th
The Travelers Companies, Inc.	10,517	P&C	\$28,787	Top 25th
Arch Insurance Group	3,969	P&C	\$4,854	Top 25th
QBE North America	5,119	P&C	\$4,802	Top 25th
ARGO Group	17,072	P&C	\$1,991	Top 25th
Palomar Holdings Grp	1,837	P&C	\$324	50th - 75th

Note: Under Type, “L+P&C” refers to groups whose entities reported more than \$1M in written premiums in both Life and P&C in 2020; “H+L” refers to groups whose entities reported more than \$1M in written premiums in both Health and Life in 2020; “P&C” refers to groups which reported more than \$1M in written premiums only in Property and Casualty in 2020; and “L” refers to groups which reported more than \$1M in written premiums only in Life in 2020.

Note: Rank is based on written premiums compared to other groups that reported more than \$1M in premiums in the same lines of business in 2020.

Source: American Academy of Actuaries calculations based on data obtained from the Statutory Insurance Filings data available in S&P’s Global Market Intelligence database.

Section 4: Implications and Lessons

The current TCFD reports filed in lieu of NAIC Climate Disclosure Surveys are very revealing. Six insights from our analysis of these filings might be most useful to the Climate and Resiliency (EX) Task Force:

1. TCFD reports generally provide more information than did the NAIC survey responses;
2. The increase in information provided by the TCFD reports is accompanied by an increase in the variability of responses;
3. Certain topics—governance, metrics and model results, and opportunities provided by climate change—are significantly better covered than in the NAIC survey responses;
4. Certain topics—operational risk, underwriting risk, and engagement with policyholders and key stakeholders—are less completely covered than in the NAIC survey responses;
5. Only companies that are relatively large have been voluntarily submitting a TCFD report; and
6. The TCFD responses, as is true of the NAIC survey responses, are difficult to benchmark. The absence of systematic questions—whether Yes/No, multiple-choice, or quantitative—makes the creation of benchmarks difficult and, thus, makes it difficult to assess individual companies against those benchmarks.

These lessons suggest at least two issues to which the NAIC (EX) Task Force might give particular attention:

- a. While the addition of Yes/No questions from the NAIC survey is an excellent start to making benchmarks feasible, there exist at least two surveys that might offer more and better questions to include. Both the [Carbon Disclosure Project](#) (CDP) survey and the [ClimateWise](#) survey are used by many companies voluntarily, and both are designed to satisfy the requirements of the TCFD reporting guidance. As a result, while the current proposal may be the best possible option for adding systematic questions quickly, it might be worth considering studying these two surveys (and others which meet the same criteria of widely used, systematic, and meeting TCFD requirements) more closely to determine how best to draw from them to improve the NAIC’s disclosure requirements;
- b. While there is some appeal in extrapolating from the experience of the twenty-four companies that filed TCFD reports in 2020 to the reports which would be filed by all companies if the NAIC required TCFD (with or without “Plus”) disclosures, when we observe that the companies that filed TCFD are atypical of the large group of companies which filed NAIC survey responses, it would argue for caution in any extrapolation. According to our prior research, 70% - 80% of companies were filing narrow, shorter, less robust, narrative responses to the NAIC survey.⁵ The TCFD responses to date have come largely from the 20% - 30% that were already submitting relatively robust responses to the NAIC survey. These companies tend to be larger, and they tend to be operating in multiple lines of business.

⁵ [December 4, 2020, presentation to Climate and Resiliency \(EX\) Task Force](#); [January 27, 2021, presentation to Climate and Resiliency \(EX\) Task Force, Climate Disclosures Workstream](#); pages 28-51.

Those companies that were responding narrowly to the NAIC survey could be responding narrowly to the TCFD requirement as well. The Climate and Resiliency (EX) Task Force might consider examining the need for and possibilities of improving the response from all companies, and especially those least prepared to respond robustly at the moment, by providing and/or encouraging more education and training aimed at those tasked with completing the disclosures.