Regulatory Risk and North American Insurance Organizations: A Company Perspective

Sponsored by the
Casualty Actuarial Society
Canadian Institute of Actuaries
Society of Actuaries

Prepared by
Sim Segal
February 2015

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

The opinions expressed and conclusions reached by the authors are their own and do not represent any official position or opinion of the sponsoring organizations or their members. The sponsoring organizations make no representation or warranty to the accuracy of the information.

TABLE OF CONTENTS

Executive Summary	3
Participating Companies	5
Project Oversight Group	6
Approach	7
Results	15
Appendix A: U.S. Research Study—Key Regulatory-Related Risks—Ranked by Life Score	23
Appendix B: U.S. Research Study—Key Regulatory-Related Risks—Ranked by P&C Score	31
Appendix C: Canadian Research Study—Key Regulatory-Related Risks—Ranked by Life Score	39
Appendix D: Canadian Research Study—Key Regulatory-Related Risks—Ranked by P&C Score	45
Appendix E: Top-Five Key Risks Sharing Top-10 Life Score and P&C Score Rankings	51
Appendix F: U.S. Research Study—Risk Scenarios and Mitigation Tactics for Top-Five Regulatory-Related Risks	52
Appendix G: Canadian Research Study—Risk Scenarios and Mitigation Tactics for Top-Five Regulatory-Related Risks	60
Appendix H: Risk Disclosure Practices	66

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

EXECUTIVE SUMMARY

This research report on regulatory risk in the North American insurance company environment was first contemplated through a discussion among members of the North American Actuarial Council's (NAAC's) Collaborative Research Group. NAAC is a voluntary group of actuarial organizations located in the United States, Canada and Mexico. NAAC established a Collaborative Research Group, in part, to brainstorm on possible areas for partnered research on certain topics of interest to participating organizations. NAAC itself does not endorse findings from such research efforts. The subsequent funding and oversight for this particular effort were provided by the Casualty Actuarial Society, Canadian Institute of Actuaries, and Society of Actuaries.

The objectives of this research project are to:

- Provide a perspective on the definition of regulatory risk
- Reveal current differences in regulatory risk concerns between the United States and Canada
- Identify mitigation tactics that can be used to address regulatory risks
- Identify the type and frequency of regulatory risk disclosures to stakeholders.

The research involved participants from 20 insurance companies—12 U.S. and eight Canadian. In terms of product portfolios, 16 companies had at least some Life (life insurance, specialty life, annuities, etc.) products and 15 had at least some P&C (auto, home, specialty P&C, etc.) products. In terms of corporate structure, seven companies were publicly traded entities; one was a mutual holding company; six were privately held; and six were mutual insurance companies.

The research had three parts: (1) identify key risks; (2) identify key risk scenarios and mitigation tactics; and (3) identify risk disclosure practices. The research was conducted via two sets of phone interviews with participating company representatives.

There are a handful of notable results that are highlighted below (in both this summary and in the results section). However, the reader will find the main value in the extensive appendices, which provide a detailed presentation of the information collected. This research was, by design, fact-based, and there was no attempt to infer any conclusions from the data. In addition to the detailed appendices of information and the highlighted results, the reader may find additional value from the description of the approach used to produce the information. The approach used is based on the value-based enterprise risk management (ERM) approach, as outlined in my book *Corporate Value of Enterprise Risk Management*.

The reader should use caution in placing undue reliance on some of the research results, in light of the relatively small number of participating companies. On the plus side, the intimate nature of this study allowed for multiple direct conversations with company participants, providing a higher level of accuracy, consistency and overall quality than is typically feasible in larger studies.

Here are some of the notable results:

Most Prevalent Risks

- **U.S. study:** The most prevalent category of regulatory-related risks was a set of 14 risks related to regulations that place restrictions on the business practices of insurers. Of the 14, four of them related to rate restrictions, another four related to claims restrictions, and two related to underwriting restrictions.

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

- **Canadian study:** The most prevalent category of regulatory-related risks was a set of seven risks related to regulations that expand requirements on insurers, requiring them to take new actions. Two risks related to a retroactive expansion of benefits. The remaining five risks represented a disparate group of concerns.

Highly Ranked Risks

- **U.S. study, Life results:** Four of the top-10-ranked risks related to the Accounting risk category and comprised all of the risks in that category. Another three of the top 10 related to the Disruptions of Market/Economy category—two were concerned with the impacts of Federal Reserve policy and one addressed the impacts of the Affordable Care Act.
- **U.S. study, P&C results:** Three of the top-10-ranked risks related to the Expansion of Benefits category and all three were risks of a mandated and retroactive expansion of benefits, despite contractual limitations to the contrary. Another three of the top 10 related to the Increased Oversight/Costs category—two of the risks concerned dual federal-state regulation and one addressed Dodd-Frank regulation of banks.
- **Canadian study, Life results:** Four of the top-10-ranked risks related to the Increase in Required Capital risk category and comprised all but one of the risks in that category. The top-ranked risk related to underwriting restrictions. Two of the top-five risks were concerned with accounting changes associated with International Financial Reporting Standards (IFRS) adoption and implementation.
- **Canadian study, P&C results:** Three of the top-10-ranked risks related to the Increase in Required Capital risk category. Two of the top-five risks addressed the Disruptions of Market risk category—one was about a government takeover of a particular portion of the insurance market in one province and another concerned government actions that lead to mandated coverage of auto insurance.
- **Comparing U.S. and Canadian results:** There was more commonality between regulatory concerns in the Canadian Life and P&C businesses than in the U.S. Life and P&C businesses. In Canada, there were more top-10 risks in the Required Capital risk theme category than any other; in the United States, there were different emphases between Life and P&C, although both shared concerns over Increased Oversight/Costs.

Mitigation Tactics

- There were approximately three mitigation tactics mentioned for each risk scenario.
- The mitigation tactics cited were highly disparate, with very little commonality and overlap.
- By a margin of more than 2-to-1, the most commonly cited type of mitigation tactic employed related to external communication, such as lobbying, educating regulators, and industry committee participation; this represented approximately one-third of all mitigation cited.
- The second and third most commonly cited types of mitigation employed related to (a) product strategy; and (b) risk and capital management, such as hedging, reinsurance, capital markets solutions and asset-liability management.

Risk Disclosures

- The following is a list of stakeholders, in descending order, for both the likelihood of receiving regulatory-related risk disclosures as well as the level of detail they receive: board of directors > regulators > rating agencies > shareholders.
- The most common types of information disclosed about regulatory-related risks to the board of directors are the two qualitative scores: “Qualitative Likelihood Score (e.g., H/M/L or Colors)” and “Qualitative Severity Score (e.g., H/M/L or Colors).”

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

- The most common metric for disclosing severity impact for regulatory-related risks is "Capital."
- The most common frequency for disclosing regulatory-related risk information to the board of directors is "Annually" (30 percent), followed by "Quarterly" (22.5 percent).
- The most common frequency for disclosing regulatory-related risk information to rating agencies is "Annually" (40 percent), followed by "At Least Annually" (22.5 percent).
- The most common frequency for disclosing regulatory-related risk information to regulators is "Annually" (40 percent), followed by "At Least Annually" (17.5 percent).
- The percentage of participants disclosing some form of highest priority-ranked regulatory-related risks (either "Key" or "Top-10, Top-15, or Top-20" risks) to board members is higher in Canada (88 percent) than in the United States (67 percent). The same is true for such disclosures to regulators. However, this is reversed for disclosures to rating agencies: Eighty-three percent of U.S. participants disclose some form of highest priority-ranked regulatory-related risks to rating agencies, versus 51 percent of Canadian participants.
- U.S. participants had a variety of practices in selecting the level of regulatory-related risks to disclose to the board of directors: the most prevalent is "Multiple Risk Scenarios for Each Risk" (25 percent) followed by "Risk" (17 percent) and "Largest-Impact Scenario for Each Risk" (also 17 percent). However, in Canada, 88 percent of participants disclose regulatory-related risks to the board of directors at the "Risk" level. A similar difference in the level of uniformity of practices is observed in reported disclosures to rating agencies and regulators.
- In the United States, more participants disclose quantitative information on regulatory-related risks to the board of directors and to regulators than qualitative information. In Canada, this is reversed.
- Only 17 percent of U.S. participants disclose regulatory-related risk information to the board of directors annually or less often, whereas 56 percent of Canadian participants do the same.

PARTICIPATING COMPANIES

Twenty insurance companies—12 U.S. and eight Canadian—participated in this research study. The author wishes to thank these companies for their assistance and valuable input. This study would not have been possible without their generous contributions of time, expertise and insights.

It was initially intended to conduct this research study for the U.S., Canadian and Mexican markets. However, participation by Mexican insurers was not possible, because the industry was occupied with its first Quantitative Impact Study for a Solvency-II-type regulation.

The participating companies were a diverse group:

- **Products:**
  - Sixteen companies had at least some Life (life insurance, specialty life, annuities, etc.) products and 15 had at least some P&C (auto, home, specialty P&C, etc.) products.
  - Fifteen companies had life insurance products; 14 had specialty P&C products; 12 had auto insurance; 12 had homeowners; six had annuities; and two had specialty life products.
- **Size:** Three companies had over $200 billion in assets; four companies had between $50 billion and $200 billion in assets; and 13 companies had assets of less than $50 billion.
- **Corporate Structure:** Seven companies were publicly traded entities; one was a mutual holding company; six were privately held; and six were mutual insurance companies.

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

PROJECT OVERSIGHT GROUP

The author would also like to thank Steve Siegel from the Society of Actuaries and the volunteers in the Project Oversight Group who provided valuable guidance and input. The members of the Project Oversight Group were Steve Easson, Arturo Erdely, Chris Fioritto, Dave Ingram, Andrea Keenan, Anne Kelly, Jim Reiskytl, Mario Robitaille, Zenaida Samaniego, Jeff Schlinsog and Angeles Yanez.

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

APPROACH

The research had three parts:

Part 1: Identify key risks.

Part 2: Identify key risk scenarios and mitigation tactics.

Part 3: Identify risk disclosure practices.

PART 1: IDENTIFY KEY RISKS

Separately for the U.S. and Canadian studies, I conducted qualitative risk assessment interviews to identify and rank each organization's key regulatory-related risks. I used the value-based ERM approach, as outlined in my book *Corporate Value of Enterprise Risk Management*, modified for use across multiple companies (as opposed to use within a single enterprise, as is more common in ERM). This involved four steps:

1. Identify qualitative risk assessment survey participants.
2. Provide advance communication.
3. Conduct qualitative risk assessment interviews.
4. Conduct consensus scoring.

1. Identify Qualitative Risk Assessment Survey Participants

I invited each company to identify a representative (some identified two) to participate in the qualitative risk assessment survey. Most companies identified their chief risk officer or equivalent head of corporate ERM and/or their chief actuary; some provided a dedicated expert on regulatory-related risk.

2. Provide Advance Communication

I provided an advance communication to each company. The advance communication included guidance on the type of information to provide. This included some background on, and definitions of terms used in, the value-based ERM approach; this helped to enhance the consistency of results, since ERM approaches and definitions typically vary across companies. The advance communication provided guidance on the following:

- Definition of risk in a value-based ERM context
- Defining risks by source
- Definition of regulatory-related risk
- Definition of a key risk
- Specifying a scenario
- Scoring criteria
- Summary of information to prepare.

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Definition of Risk in a Value-Based ERM Context

Risk was defined as a potential future event that, if it were to occur, would result in a deviation from the expectations embedded in the organization's baseline strategic plan. So, for example, if the organization expected a change from (the current) Regulation A to (less favorable) Regulation B, and had already accounted for this expectation in its baseline strategic plan and accompanying financial projection of results and key metrics, then the (expected) change to Regulation B would not be a "risk." However, the passing of (even more unfavorable) Regulation C would be a risk.

Defining Risks by Source

I defined risks consistently by their originating source. Unfortunately, risks are often inconsistently defined—sometimes by source and sometimes by outcome. For example, "reputation risk" or "ratings downgrade risk" are both examples of risks improperly defined by outcome. There are multiple independent sources of risk that can trigger each of these outcomes; each distinct source of risk must be identified separately to properly support various aspects of examining risk:

- Consistent scoring in a qualitative risk assessment
- Development of robust risk scenarios recognizing all downstream impacts
- Identification of mitigation opportunities.

In addition, defining risks by their originating source is critical for proper categorization, which facilitates the cross-organization comparisons performed in this research study.

Definition of Regulatory-Related Risk

For the purposes of this research study, regulatory-related risk was broadly defined as unexpected changes in (a) regulations or (b) the regulatory environment that would result in a significant deviation of results from those expected in the baseline strategic plan of each organization. However, regulatory-related risks may be triggered by multiple possible sources, and care was taken to identify the originating source(s). Some examples of possible originating sources of regulatory-related risks include:

- Poor economic conditions in a particular jurisdiction (or at a national level) result in a regulatory change to produce more tax revenues.
- Regulatory changes in other countries impact the local regulatory environment.
- Social movements drive regulatory reform.
- Poor public relations on behalf of the industry result in a social movement that drives regulatory changes.
- Poor relationships with regulators lead to unfavorable regulatory changes.
- Industry scandal results in heightened regulatory scrutiny and regulatory constraints.

A choice was made to have a broad scope that would capture all such risks—regardless of their originating source—as long as they trigger regulatory-related risks.

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Definition of a Key Risk

Key risks were defined as those with the largest potential impact to company value. Company value is the value investors would pay today if they believed that your organization will perfectly execute its strategic business plan. Company value is an internal valuation calculated as the present value of distributable cash flows that would result if the strategic plan were to be perfectly achieved.

Specifying a Scenario

To enable a consistent set of qualitative risk assessments, it is inadvisable to attempt to estimate likelihood and severity for a broad "risk." This is because each risk may have a wide variety of risk scenarios and each survey participant might be imagining a different one when providing their assessment. This distorts the results. Rather, to enhance the level of consistency in scoring, it is preferable to specify a "credible-worst-case scenario" for the risk, and then provide likelihood and severity scores on that scenario; and that is the approach that was used here. A credible-worst-case scenario is something that is rare and severe but still possible (as opposed to an Armageddon scenario). For example, for the risk of "loss of tax advantages for insurance products," a credible-worst-case scenario might be "loss of tax deferral on life insurance cash values."

Scoring Criteria

For each of the regulatory-related risks identified, participants were asked to provide a credible-worst-case scenario and corresponding qualitative likelihood and severity scores, using the following scoring criteria:

Likelihood Score	Chance of Occurring Over Next Three Years	Life Severity Score (Loss in Life Business Value)	P&C Severity Score (Loss in P&C Business Value)
Very High	>20%	>10%	>10%
High	>10% and ≤20%	≥2.5% but <10%	≥2.5% but <10%
Medium	>5% and ≤10%	≥1.0% but <2.5%	≥1.0% but <2.5%
Low	>2% and ≤5%	≥0.5% but <1.0%	≥0.5% but <1.0%
Very Low	≤2%	<0.5%	<0.5%

Initially, participants were asked to identify key risks based on the potential impact to company value; however, once a key risk was identified, they were asked to express the qualitative severity score differently—in two ways:

a) **Loss in Life Business Value:** The loss to the portion of Company Value attributable to the Life business, which includes life insurance, annuities, etc.

b) **Loss in P&C Business Value:** The loss to the portion of Company Value attributable to the P&C business, which includes auto, homeowners, etc.

For example, if their company value is $10 billion, of which $6 billion is due to Life, $3 billion is due to P&C, and $1 billion is due to Other, and the potential impact of the credible-worst-case scenario being

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

considered is estimated at $1 billion, with $0.2 billion in losses to Life, $0.7 billion in losses to P&C, and $0.1 billion in losses to Other, then:

- Loss in Life Business Value is 3.3% (0.2 / 6.0) → Life Severity Score = "High"
- Loss in P&C Business Value is 23.3% (0.7 / 3.0) → P&C Severity Score = "Very High"

Summary of Information to Prepare

Participants were asked to participate in a phone interview during which they should be prepared to provide three to five (or more) key regulatory-related risks, and for each one, also provide:

- Brief description of the event
- Credible-worst-case scenario
- Likelihood score
- Life severity score
- P&C severity score.

3. Conduct Qualitative Risk Assessment Interviews

Separately for the U.S. and Canadian studies, I conducted phone interviews with survey participants to collect the key risks, the credible-worst-case scenarios, the likelihood score, and the Life and P&C severity scores. Each interview was allotted 90 minutes, although not all interviews required the full allotted time. I provided interactive guidance to interviewees on providing risks that fit our ERM approach, such as ensuring that risks were consistently defined by source, at an appropriate level of granularity, and consistently scored.

These interviews were conducted from late December 2013 through late February 2014.

Participants provided an average of 4.75 risks, with 80 percent of them providing between three and six risks.

The interviews were conducted in a way that protected the anonymity of the survey participants. Only the consultant conducting the interviews had knowledge of which survey participants provided which risks. Following the individual interviews, the information was aggregated.

4. Conduct Consensus Scoring

Separately for the U.S. and Canadian studies, the consensus scoring was performed in four steps:

a. Consolidation
b. Review
c. Scoring
d. Finalizing results.

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

a. Consolidation

I consolidated the total list of key risks collected from all participants, eliminating similar or duplicate items. The initial list of key risks collected had 61 risks in the U.S. study and 34 risks in the Canadian study. This was consolidated down to 53 risks in the U.S. study and 30 risks in the Canadian study.

b. Review

The POG for this research reviewed the consolidated list of risks. All of the risks were confirmed without change, with one exception: The POG added one risk to the list in the Canadian study: "A review of capital requirement for segregated fund guarantees results in an increase in regulatory required capital." This appears as risk #20 in Appendix C (note: 20 is the risk number reference and not the Life rank reference). This resulted in a final count of 53 risks for the U.S. study and 31 risks for the Canadian study.

c. Scoring

Separately for the U.S. and Canadian studies, the final consolidated list of risks, including the one addition to the Canadian list by the POG, was circulated to the participants, with a request to provide likelihood, Life severity, and P&C severity scores (using the same guidance and scoring criteria as earlier) for each risk, or to answer "N/A or Pass" for either items that are not applicable (e.g., they either did not have Life business or P&C business) or if they preferred not to opine on a particular item.

d. Finalizing Results

Separately for the U.S. and Canadian studies, I finalized the results of the qualitative risk assessment by taking the average of the likelihood scores, Life severity scores, and P&C severity scores. I calculated two overall combined scores—the Life Score and the P&C Score—by multiplying the average likelihood by the average Life severity score and the average P&C severity score, respectively.

PART 2: IDENTIFY KEY RISK SCENARIOS AND MITIGATION TACTICS

In the second part of the research, separately for the U.S. and Canadian studies, I conducted a second set of interviews with participating companies to identify multiple risk scenarios and mitigation tactics for each of the top-five key risks.

This involved three steps:

1. Identify top-five key risks.
2. Provide advance communication.
3. Conduct interviews.

1. Identify Top-Five Key Risks

The top-five key risks selected were those that had a top-10 ranking for both the Life Score and the severity score. Again, this was performed separately for the U.S. and Canadian studies.

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

2. Provide Advance Communication

I provided an advance communication to each company. The advance communication included instructions on what participants would be asked to provide during the interview. For this portion of the research, participants were instructed to provide:

- Two to three risk scenarios (including any upside scenarios, if relevant) for each of the top-five risks
- Any relevant mitigation, either planned or in place, for each individual risk scenario.

It was also explained that each risk scenario was intended to capture one possible way the participant believes the risk might manifest, either in form or level of degree.

Each of the top-five key risks was provided to participants along with its corresponding credible-worst-case scenarios from Part 1. Participants were advised that they had the option to use the credible-worst-case scenarios as one of their two to three risk scenarios for each risk, or to reject them and supply all new risk scenarios.

In Part 1, the risks, as expressed by their credible-worst-case scenarios, gathered during the participant interviews were necessarily consolidated to have the scoring and ranking performed on a consistent, and reasonably sized, set of items. One of the purposes of the research in Part 2 was to give each participant the freedom to fully express the full set of key risk scenarios with which they are most concerned.

3. Conduct Interviews

To develop the risk scenarios, I used an adaptation of the Failure Modes and Effects Analysis (FMEA) technique, which is an interview that facilitates the development of robust scenarios, tracing them from their originating source of risk, through all the logical, realistic and holistic sequential steps, and concluding with all relevant material outcomes and impacts. This technique is used in the risk scenario development portion of the risk quantification phase of the value-based ERM approach to develop multiple individual deterministic risk scenarios.

An additional instruction was provided at the outset of the interview clarifying that although the advance communication asked them to prepare to provide two to three risk scenarios for each of the top-five identified key risks, this was only intended as guidance. Rather than requesting that they conduct a new exercise to imagine what risk scenarios might manifest in each of the top-five risks, I explained that the intent was to merely gather the risk scenarios about which they are concerned. As a result, if they did not believe a risk represented a key risk, then that is valid information that would be collected and recorded; similarly, this would be the case for any number of risk scenarios provided, whether fewer or more numerous than the two-to-three range initially mentioned.

As in Part 1, I conducted phone interviews with participants to collect this information. Each interview was allotted 90 minutes (although a portion of this time was set aside for Part 3 of the research), although not all interviews required the full allotted time.

These interviews were conducted from mid-May to mid-July 2014.

In addition, as in the first part of the research, the interviews were conducted in a way that protected the anonymity of the survey participants. Only the consultant conducting the interviews had knowledge of which survey participants provided which risk scenarios and mitigation tactics.

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

PART 3: IDENTIFY RISK DISCLOSURE PRACTICES

I conducted a survey of current practices regarding regulatory-related risk disclosures to stakeholders, including their board of directors, shareholders, rating agencies and regulators. This information was collected as part of the Part 2 interviews.

The instructions provided to participants during the interview included the following:

- If it was the company's practice to disclose information about key regulatory-related risks in the same manner as all other key risks, then they were to provide information on how they disclosed such risks, even if a regulatory-related risk was not currently ranked as a key risk.
- For each key stakeholder, they were to describe various aspects of their regulatory-related risk disclosures; the questions and the choices are detailed below:

I. For Which Risks? (Select at most one of a-e for each stakeholder, plus any others that apply)

(a) Key (no specific/set number of risks but rather those identified as key via the ERM program)
(b) Top-10
(c) Top-15
(d) Top-20
(e) Selected Risks (specific risks selected as notable at a given point in time)
(f) Risks Needing Attention
(g) Emerging Risks (likelihood and/or severity may be increasing to where they may soon be considered key risks in ERM program)

II. At What Level? (Select at most one for each stakeholder)

(a) Risk Summary (only a summary of risks, discussed at the category, sub-category, or other level)
(b) Risk
(c) Multiple Risk Scenarios for Each Risk (a range of potential scenarios are provided)
(d) Credible-Worst-Case Scenario for Each Risk
(e) Largest-Impact Scenario for Each Risk (the scenario with the largest severity impact is provided)
(f) Most-Likely Scenario for Each Risk (the scenario with the largest likelihood is provided)
(g) Not As Separate Risk (embedded in other risk discussions)

III. What Information? (Select all that apply)

(a) Qualitative Description Only
(b) Qualitative Likelihood Score (e.g., H/M/L or Colors)
(c) Qualitative Severity Score (e.g., H/M/L or Colors)
(d) Quantitative Estimate of Likelihood (a point estimate of likelihood)
(e) Quantitative Estimate of Severity (a point estimate of severity impact)
(f) Key Risk Indicators (KRIs)
(g) Mitigation
(h) Exposure Limit

IV. If Applicable, Which Severity Metric(s)? (Select all that apply)

(a) Surplus
(b) Capital
(c) Capital on Economic Basis
(d) Required Capital
(e) Three Years of Earnings
(f) IFRS Annual Income

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

(g) Principle-Based Reserves
(h) ROE
(i) Company Value
(j) Various Financial Metrics

V. With What Frequency? (Select at most one for each stakeholder)

(a) Upon Request Only
(b) Every Two Years
(c) Annually
(d) At Least Annually
(e) Annually w/ Quarterly Updates
(f) Twice Annually
(g) Quarterly
(h) At Least Quarterly

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

RESULTS

PART 1: IDENTIFY KEY RISKS

The final consolidated list of key risks for the U.S. and Canadian research studies is shown in the first four appendices:

1. Appendix A: U.S. Research Study—Key Regulatory-Related Risks—Ranked by Life Score
2. Appendix B: U.S. Research Study—Key Regulatory-Related Risks—Ranked by P&C Score
3. Appendix C: Canadian Research Study—Key Regulatory-Related Risks—Ranked by Life Score
4. Appendix D: Canadian Research Study—Key Regulatory-Related Risks—Ranked by P&C Score

U.S. Research Study

In analyzing the themes of the key regulatory-related risks, commonalities appear that allow them to be grouped into risk categories. The risk categories are listed below in descending order of prevalence (represented by number of risks cited as opposed to by rank of Life or P&C scores); the code in parentheses is also shown in the corresponding appendices, immediately following the theme:

1. **Restrictions on Business (RES)**

   There were 14 risks related to regulations that place restrictions on the business practices of insurers. Of the 14, four related to rate restrictions, another four related to claims restrictions, and two related to underwriting restrictions.

2. **Expanded Requirements (REQ)**

   There were eight risks related to regulations that expand requirements on insurers, requiring them to take new actions. The most prevalent risk (four instances) related to a mandated and retroactive expansion of benefits, despite contractual limitations to the contrary.

3. **Increased Oversight/Costs (OVR)**

   This category was tied with the one above in prevalence. Most of the eight risks in this category related to an increase in either federal or dual federal-state regulatory scrutiny and related costs.

4. **Disruption of Market/Economy (DIS)**

   The next most prevalent category included six risks related to disruptions in the market or the economy, many precipitated by the slow-growth economy itself, such as Federal Reserve policy that causes a worsening of the economy; a rash of competitor failures; and cost shifting to the private sector.

5. **Loss of Tax Advantages (TAX)**

   There were four risks related to a loss of tax advantages. Three of these related to the loss of (a) tax deferral of the inside buildup for life insurance and annuities; or (b) tax deductibility of life insurance death benefits.

6. **Accounting Changes (ACT)**

   There were four risks associated with accounting changes. Three of these related to principle-based reserves.

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

7. **Increase in Reserve/Capital Requirements (RAC)**

   Only three risks related to an increase in reserve and/or capital requirements.

8. **Violations/Fines (VIO)**

   Only two risks related to a compliance violation or increase in fines.

9. **Miscellaneous (MIS)**

   There were four remaining risks that did not lend themselves to any major theme category grouping.

Life Business

Four of the top-10 Life risks (by Life Score) related to the Accounting risk category and comprised all of the risks in that category. Another three of the top-10 related to the Disruptions of Market/Economy category—two were concerned with the impacts of Federal Reserve policy and one addressed the impacts of the Affordable Care Act. Two of the top-10 risks were in the Increased Oversight/Costs category—one concerned with dual federal-state regulation and the other with Dodd-Frank regulation of banks.

P&C Business

Three of the top-10 P&C risks (by P&C Score) related to the Expansion of Benefits category and all three were risks of a mandated and retroactive expansion of benefits, despite contractual limitations to the contrary. Another three of the top 10 related to the Increased Oversight/Costs category—two of the risks concerned with dual federal-state regulation and one addressed Dodd-Frank regulation of banks. Two more of the top-10 related to the Disruptions of Market/Economy category—one addressed the impacts of the Affordable Care Act and the other was about the impact of bankruptcies of municipalities.

Canadian Research Study

In analyzing the themes of the key regulatory-related risks, commonalities appear that allow them to be grouped into risk categories. The risk categories are listed below in descending order of prevalence (represented by number of risks cited as opposed to by rank of Life or P&C scores); the code in parentheses is also shown in the corresponding appendices, immediately following the theme:

1. **Expanded Requirements (REQ)**

   There were seven risks related to regulations that expand requirements on insurers, requiring them to take new actions. Two risks related to a retroactive expansion of benefits. The remaining five risks represented a disparate group of concerns.

2. **Restrictions on Business (RES)**

   There were six risks related to regulations that place restrictions on the business practices of insurers. Three of these related to underwriting restrictions.

3. **Increase in Capital Requirements (CAP)**

   There were five risks related to a variety of factors driving an increase in capital requirements.

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

4. **Disruption of Market (DIS)**

   There were three risks related to disruptions in the market, two of which relate to a government takeover of a particular portion of the insurance market in one province.

5. **Increased Oversight/Costs (OVR)**

   This category was tied with the one above in prevalence. All three of these risks related to an increase in volume and/or intensity of regulatory oversight and the pursuant related costs.

6. **Accounting Changes (ACT)**

   There were two risks associated with IFRS adoption and implementation.

7. **Miscellaneous (MIS)**

   There were five remaining risks that did not lend themselves to any theme category grouping.

Life Business

Four of the top-10 Life risks (by Life Score) related to the Increase in Required Capital risk category and comprised all but one of the risks in that category. The top-ranked risk related to underwriting restrictions. Two of the top-five risks were concerned with accounting changes associated with IFRS adoption and implementation. Another two of the top 10 related to expanded regulatory requirements—one regarding data privacy and another about the adoption of bank-like regulations for insurers.

P&C Business

Three of the top-10 P&C risks (by P&C Score) related to the Increase in Required Capital risk category. Two of the top-five risks addressed the Disruptions of Market risk category—one was about a government takeover of a particular portion of the insurance market in one province and another concerned with government actions that lead to mandated coverage of auto insurance. Two more of the top-10 risks were in the Expanded Requirements risk category—one involving a retroactive expansion of benefits and another involving an increase in data privacy requirements.

Comparing U.S. and Canadian Results

There are some notable comparisons and contrasts between recent U.S. and Canadian insurers' concerns about regulatory-related risks suggested by the results:

- The two top theme categories—as expressed by the sheer number of key risks (not by ranking scores) in both the United States and Canada were Restrictions on Business and Expanded Requirements.
- There was more commonality between regulatory concerns in the Canadian Life and P&C businesses than in the U.S. Life and P&C businesses. In Canada, there were more top-10 risks in the Required Capital risk theme category than any other; in the United States, there were different emphases between Life and P&C, although both shared concerns over Increased Oversight/Costs.

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

PART 2: IDENTIFY KEY RISK SCENARIOS AND MITIGATION TACTICS

The top-five key risks selected for this portion of the research were those that had a top-10 ranking for both the Life Score and the P&C Score. This was performed separately for the U.S. and Canadian studies. The top-five key risks identified for each study are shown in Appendix E: Top-Five Key Risks Sharing Top-10 Life Score and P&C Score Rankings.

The results of the survey of risk scenarios and mitigation tactics for each of the top-five key risks are shown in:

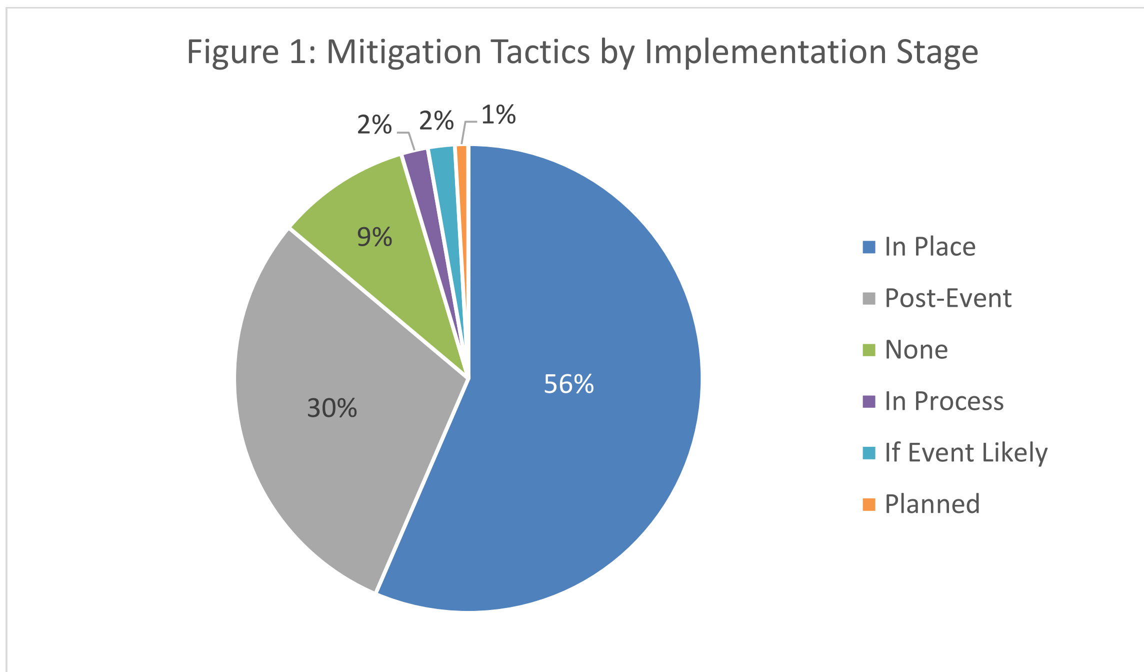
- Appendix F: U.S. Research Study—Risk Scenarios and Mitigation Tactics for Top-Five Regulatory-Related Risks
- Appendix G: Canadian Research Study—Risk Scenarios and Mitigation Tactics for Top-Five Regulatory-Related Risks.

General observations:

- There were approximately three mitigation tactics mentioned for each risk scenario.
- The mitigation tactics cited were highly disparate, with very little commonality and overlap.

Observations related to mitigation tactic implementation stage:

- The mitigation tactics that were already "in place" were the most common (56 percent) and outnumbered those that would be implemented "post-event" by approximately 2-to-1.
- Almost 10 percent of the time, participants indicated mitigation tactics as "none."
- Figure 1 shows mitigation tactics by stage of implementation.
- There were no material differences between the U.S. and Canadian results.

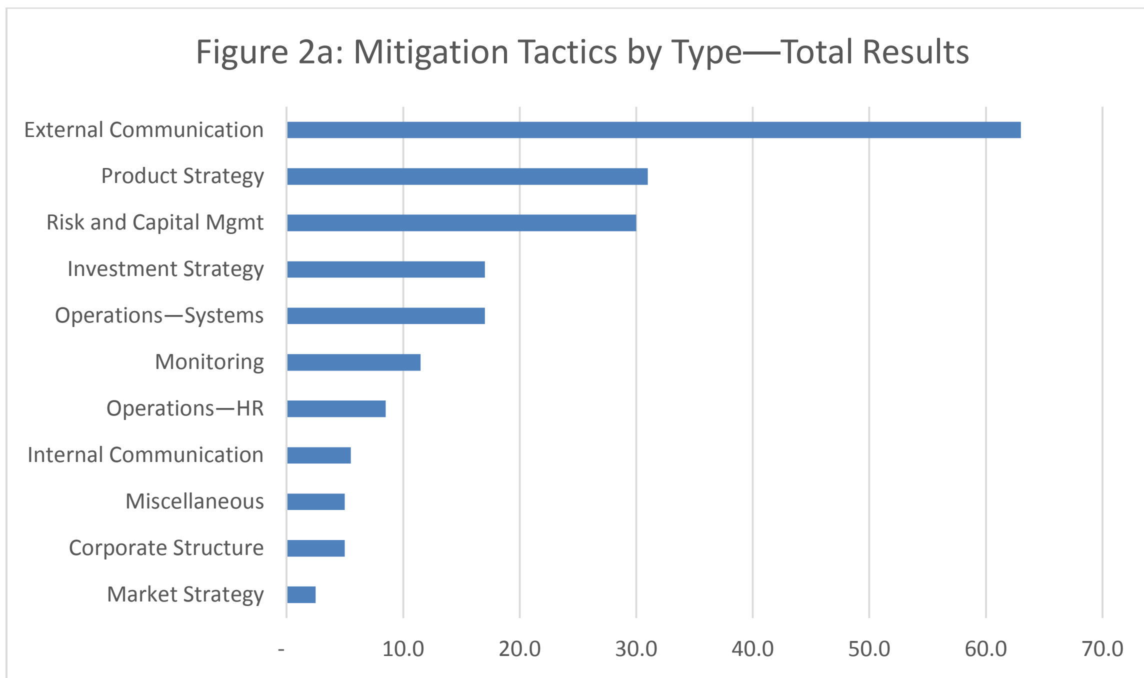


Note: Figure 1 includes "none" as a mitigation tactic.

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Observations related to mitigation tactics by type:

- By a margin of more than 2-to-1, the most commonly cited type of mitigation tactic employed related to external communication, such as lobbying, educating regulators, and industry committee participation; this represented approximately one-third of all mitigation cited.
- The second and third most commonly cited types of mitigation employed related to (a) product strategy; and (b) risk and capital management, such as hedging, reinsurance, capital markets solutions, asset-liability management; these two types represented nearly the same proportion of total mitigation, 16 percent and 15 percent, respectively
- Figure 2a shows mitigation tactics by type for the total results.



Note: Figure 2a excludes “none” as a mitigation tactic.

U.S. Research Study

When asked to provide risk scenarios for the No. 1 ranked risk, which related to significant changes to U.S. GAAP financial reporting, seven of the 12 participants responded that this was not a key risk. One reason for this is that in the intervening period between Parts 1 and 2 of this research study, the Financial Accounting Standards Board (FASB) announced that it will seek only targeted changes in U.S. GAAP instead of the major overhaul sought by the International Accounting Standards Board (IASB). Another reason was that several participants, particularly the larger companies, stated that they are already well-prepared for this eventuality, should it occur.

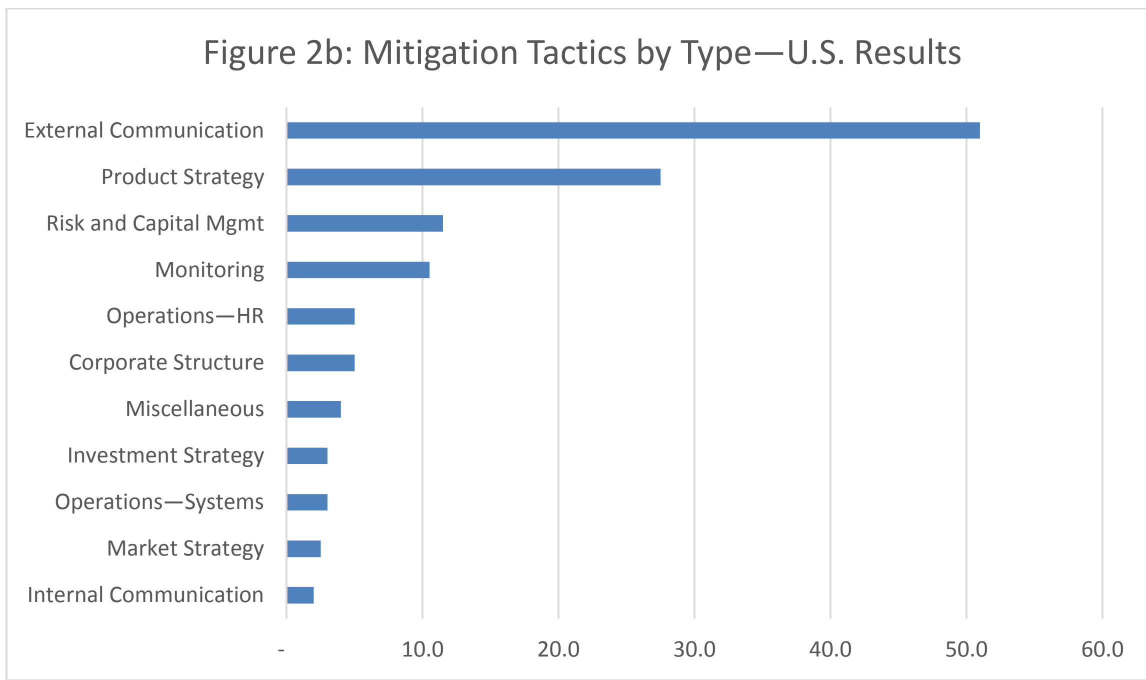
When asked to provide risk scenarios for the No. 2 ranked risk, which related to the Dodd-Frank regulation, eight of the 12 participants responded that this was not a key risk. One reason for this is that in the intervening period between Parts 1 and 2 of this research study, the U.S. Senate responded favorably to requests that had been made by the insurance sector. Another reason is that some of the participating companies had already divested themselves of their banking operations.

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Risk #3—Dual regulation (at state and federal level)—garnered the most concern as represented by the largest number of risk scenarios provided, which equaled 15, nearly double the amount of that of risks 4 and 5.

Observations related to mitigation tactics by type:

- By a margin of almost 2-to-1, the most commonly cited type of mitigation tactic employed related to external communication, such as lobbying, educating regulators, and industry committee participation; this represented 41 percent of all mitigation cited.
- The second most commonly cited type of mitigation employed related to product strategy, which represented 22 percent of all mitigation cited.
- The third and fourth most commonly cited types of mitigation employed related to (a) risk and capital management, such as hedging, reinsurance, capital markets solutions, asset-liability management; and (b) monitoring; these two types represented nearly the same proportion of total mitigation, 9 percent and 8 percent, respectively
- Figure 2b shows mitigation tactics by type for the U.S. results.



Note: Figure 2b excludes “none” as a mitigation tactic.

Canadian Research Study

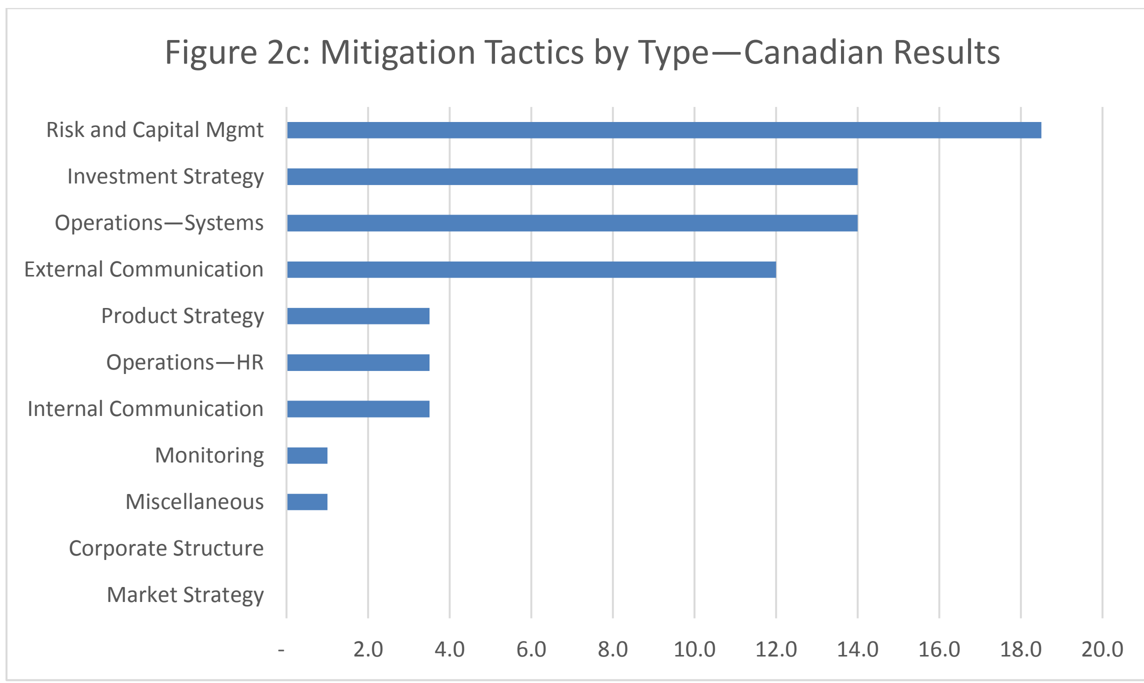
Three of the top-five risks related to changes in capital requirements.

Observations related to mitigation tactics by type:

- The most commonly cited type of mitigation tactic employed related to risk and capital management, such as hedging, asset-liability matching, reinsurance, and capital management; this represented 26 percent of all mitigation cited.

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

- The next three most commonly cited types of mitigation employed related to investment strategy, operations related to technology systems, and external communications, representing 20 percent, 20 percent and 17 percent of all mitigation cited, respectively.
- Figure 2c shows mitigation tactics by type for the Canadian results.



Note: Figure 2c excludes "none" as a mitigation tactic.

PART 3: IDENTIFY RISK DISCLOSURE PRACTICES

The results of the risk disclosure portion of the research study are shown in Appendix H: Risk Disclosure Practices.

In general, the following is a list of stakeholders in descending order for both the likelihood of receiving regulatory-related risk disclosures as well as the level of detail they receive: board of directors > regulators > rating agencies > shareholders.

Section I: The most common set of regulatory-related risks disclosed to all types of stakeholders, when such disclosures are made, is some form of the highest priority-ranked risks. Between 70 and 80 percent of participants report either "Key" or "Top-10, Top-15, or Top-20" regulatory risks to the board of directors (80 percent), rating agencies (70 percent), and regulators (75 percent).

Section II: The most common level at which regulatory-related risks are disclosed to all types of stakeholders is at the "Risk" level.

Section III: The most common types of information disclosed about regulatory-related risks to the board of directors are the two qualitative scores: "Qualitative Likelihood Score (e.g., H/M/L or Colors)" and "Qualitative Severity Score (e.g., H/M/L or Colors)"; approximately one-third of participants report this information to their boards of directors. The most common type of information disclosed about

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

regulatory-related risks to regulators is all types of qualitative information: “Qualitative Description Only,” “Qualitative Likelihood Score (e.g., H/M/L or Colors),” and “Qualitative Severity Score (e.g., H/M/L or Colors)”; approximately one-third of participants report this information to their regulators. The most common type of information disclosed about regulatory-related risks to shareholders/owners is the “Qualitative Description Only”; approximately one-third of participants report this information to their shareholders.

Section IV: The most common metric used to disclose expressions of severity impact for regulatory-related risks is “Capital”; approximately one-third of participants report this information to their boards of directors, ratings agencies and regulators.

Section V: The most common frequency for disclosing regulatory-related risk information to the board of directors is “Annually” (30 percent), followed by “Quarterly” (22.5 percent). The most common frequency for disclosing regulatory-related risk information to rating agencies is “Annually” (40 percent), followed by “At Least Annually” (22.5 percent). The most common frequency for disclosing regulatory-related risk information to regulators is “Annually” (40 percent), followed by “At Least Annually” (17.5 percent).

Comparing U.S. and Canadian Results

Appendix H shows the results in total and also separately for the U.S. and Canadian results. The reader is cautioned against putting much weight on this, due to the small size of the sample. However, the following are some noted differences between the U.S. and Canadian results:

Section I: The percentage of participants disclosing some form of highest priority-ranked regulatory-related risks (either “Key” or “Top-10, Top-15, or Top-20” risks) to board members is higher in Canada (88 percent) than in the United States (67 percent). The same is true for such disclosures to regulators. However, this is reversed for disclosures to rating agencies: Eight-three percent of U.S. participants disclose some form of highest priority-ranked regulatory-related risks to rating agencies, versus 51 percent of Canadian participants.

Section II: U.S. participants had a variety of practices in selecting the level of regulatory-related risks to disclose to the board of directors: The most prevalent is “Multiple Risk Scenarios for Each Risk” (25 percent) followed by “Risk” (17 percent) and “Largest-Impact Scenario for Each Risk” (also 17 percent). However, in Canada, 88 percent of participants disclose regulatory-related risks to the board of directors at the “Risk” level. A similar difference in the level of uniformity of practices is observed in reported disclosures to rating agencies and regulators.

Section III: In the United States, more participants disclose quantitative information on regulatory-related risks to the board of directors and to regulators than qualitative information. In Canada, this is reversed.

Section IV: In Canada, those reporting severity metrics are more likely to disclose a variety of non-traditional metrics (i.e., not related to capital or earnings), than in the United States.

Section V: In the United States, only 17 percent of participants disclose regulatory-related risk information to the board of directors annually or less often, whereas 56 percent of Canadian participants do so with this frequency.

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Appendix A: U.S. Research Study—Key Regulatory-Related Risks—Ranked by Life Score

Life Rank	P&C Rank	#	Theme (and Risk Category)	Risk Scenario	Average Likelihood (Over Next Three Years)	Average Life Severity (Loss in Life Business Value)	Average P&C Severity (Loss in P&C Business Value)	Life Score	P&C Score
1	2	20	New Accounting Standards (ACT)	New GAAP reporting standards (either by FASB and/or IASB) are adopted in 2016 (effective 2019) and result in significant expense to implement and maintain, and possibly an increase in the cost of equity capital (due to decreased transparency and higher earnings volatility).	9.6%	3.0%	3.5%	0.285%	0.331%
2	41	17	Principle-Based Reserves (ACT)	National Association of Insurance Commissioners (NAIC) Principle-Based Reserves (PBR) task force produces a version of PBR that does not provide satisfactory relief from redundant reserves yet eliminates the use of alternative financing solutions.	9.2%	2.7%	0.4%	0.248%	0.034%
3	11	29	Fed Policy Impacts Economy (DIS)	Fed actions result in inflation and/or stagflation, such that, by 2016, 10-year Treasury rates are 8.00 percent, and remain there for three to five years.	3.6%	6.8%	4.3%	0.243%	0.155%
4	9	9	Dodd-Frank Regulation of Banks (OVR)	Dodd-Frank further expands regulations on banks, resulting in significant increase to compliance costs for insurers that have banks within their organizational structure.	9.9%	2.2%	1.8%	0.216%	0.173%
5	6	1	Dual Regulation (OVR)	Dual regulation (at state and federal level) results in new accounting and solvency standards emerging that create an inconsistent and non-level playing field in the insurance market.	6.5%	3.1%	3.1%	0.202%	0.202%
6	16	28	Fed Policy Impacts Economy (DIS)	Fed actions result in a double-dip recession.	4.9%	4.1%	2.1%	0.200%	0.104%
7	3	11	Retroactive Expansion of Benefits (REQ)	Judiciary or regulatory ruling retroactively expands liability of insurance contract beyond contractual intention (e.g., requirement to seek out unreported life insurance claimants).	8.7%	2.2%	3.5%	0.187%	0.302%

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Life Rank	P&C Rank	#	Theme (and Risk Category)	Risk Scenario	Average Likelihood (Over Next Three Years)	Average Life Severity (Loss in Life Business Value)	Average P&C Severity (Loss in P&C Business Value)	Life Score	P&C Score
8	4	27	Affordable Care Act (DIS)	The Affordable Care Act (ACA) increases medical costs significantly, triggering a three-year recession with -1 percent GDP growth and 8.5 percent unemployment.	5.6%	2.9%	5.2%	0.159%	0.292%
9	46	18	Principle-Based Reserves (ACT)	NAIC decisions on open issues for PBR result in a 25 percent increase on term and universal life reserves.	4.6%	3.0%	0.3%	0.140%	0.012%
10	45	19	Principle-Based Reserves (ACT)	Uncertainty regarding changes in required life insurance reserves from AG38 to PBR impedes growth as company strategy remains in a holding pattern longer than expected.	7.1%	2.0%	0.3%	0.139%	0.018%
11	40	24	Loss of Tax Advantages (TAX)	Loss of tax-exempt status of our insurance company legal entity	2.0%	6.9%	1.8%	0.138%	0.035%
12	52	22	Loss of Tax Advantages (TAX)	Desire for additional revenues and/or tax reform results in federal legislation, passed in 2016 (effective 2018), that eliminates tax deferral of inside buildup for life insurance and annuity products.	1.7%	7.9%	0.3%	0.136%	0.004%
13	13	32	Increase in Capital Requirements (RAC)	Capital requirements (either issued by the International Association of Insurance Supervisors (IAIS), Federal Insurance Office, or other entity) increase by 20 percent.	3.1%	4.2%	4.9%	0.130%	0.150%
14	37	8	Bank-Like Regulations Applied to Insurance (REQ)	Bank-centric capital charges (e.g., based on Basel III) are applied inappropriately (without risk adjustment) to insurance companies, decreasing viability of certain products (such as variable annuities).	4.0%	3.2%	1.1%	0.130%	0.045%
15	10	31	Bankruptcies of Municipalities Impact Economy (DIS)	Unfunded obligations result in three to five major municipalities declaring bankruptcy (like Detroit), resulting in municipal bond defaults and prolonging the national recovery from the financial crisis.	4.7%	2.7%	3.7%	0.125%	0.172%

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Life Rank	P&C Rank	#	Theme (and Risk Category)	Risk Scenario	Average Likelihood (Over Next Three Years)	Average Life Severity (Loss in Life Business Value)	Average P&C Severity (Loss in P&C Business Value)	Life Score	P&C Score
16	44	26	Underwriting Restrictions (RES)	New federal restrictions on underwriting (for example, prohibiting use of new health-evaluation technology available to consumer) result in permanent 10 percent increase in anti-selection.	3.8%	3.2%	0.5%	0.123%	0.019%
17	50	23	Loss of Tax Advantages (TAX)	Desire for additional revenues and/or tax reform results in federal legislation, passed in 2016 (effective 2018), that puts a fixed-dollar limit on all tax deductions and preferences, including inside buildup, for life insurance and annuity products.	2.8%	4.3%	0.3%	0.121%	0.007%
18	53	21	Loss of Tax Advantages (TAX)	Federal legislation, passed in 2016, eliminates the tax-deductibility of life insurance death benefits.	1.6%	7.6%	0.3%	0.121%	0.004%
19	7	3	Dual Regulation (OVR)	Insurance industry becomes subject to a federal regulatory body (e.g., Securities and Exchange Commission (SEC)) in addition to state regulation, resulting in regulations that are overly restrictive and more expensive to comply with.	4.8%	2.5%	4.2%	0.120%	0.201%
20	22	15	ORSA Disclosures (REQ)	New information gathered by regulators through ORSA requirements leads regulators astray in making unfair cross-industry comparisons, resulting in a significant increase in regulatory scrutiny, reporting, and possibly capital requirements.	5.0%	2.4%	1.8%	0.119%	0.087%
21	49	25	Underwriting Restrictions (RES)	Societal pressures result in several states banning the underwriting use of DNA testing just as it becomes more prevalent and affordable, significantly increasing anti-selection.	4.0%	2.8%	0.3%	0.113%	0.010%
22	26	16	Foreign Trend Expands Scrutiny (OVR)	In attempts to keep up with non-U.S. trends, regulators increase level of activity/scrutiny without supporting level of knowledge and understanding, resulting in the need for significant increases in company resources to comply with, respond to, and educate, regulators.	7.0%	1.3%	1.1%	0.093%	0.076%

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Life Rank	P&C Rank	#	Theme (and Risk Category)	Risk Scenario	Average Likelihood (Over Next Three Years)	Average Life Severity (Loss in Life Business Value)	Average P&C Severity (Loss in P&C Business Value)	Life Score	P&C Score
23	31	7	Broker-Dealer Restrictions (RES)	Financial Stability Oversight Council (FSOC) regulations impose stricter fiduciary standards on broker-dealers.	6.5%	1.4%	0.8%	0.092%	0.054%
24	47	38	Cost Shifting to Private Sector (DIS)	Changes in administrative practices of Social Security Disability Insurance result in shifting costs to private insurance DI carriers.	4.3%	2.0%	0.3%	0.085%	0.011%
25	21	5	Federal Reserve Requirements (OVR)	Increased scrutiny and requirements (e.g., stress testing, increased rigor in internal audit, etc.) by Federal Reserve result in higher costs.	7.2%	1.1%	1.2%	0.079%	0.087%
26	19	46	Rate Restrictions (RES)	Regulatory constraints on rates (e.g., rate freeze) in one or more states (note: each carrier should select the state(s) representing their largest markets) result in lower profitability and possible negative impacts to (or even downgrade of) the company's credit rating.	3.9%	1.8%	2.4%	0.071%	0.094%
27	25	30	Fines (VIO)	Desire for additional revenues by several states results in a more aggressive regulatory environment and that results in a significant increase in insurance company fines.	6.4%	1.0%	1.2%	0.064%	0.077%
28	39	36	New Requirements in Claims Practices (RES)	Regulators concerned about unclaimed property require changes in claims administration practices, resulting in increased costs.	6.7%	0.9%	0.6%	0.063%	0.037%
29	28	44	Delays in Rate Filings (MIS)	Shortage of state insurance department resources creates longer delays in resolving rate filings, resulting in loss of expected revenues.	8.3%	0.6%	0.8%	0.053%	0.062%
30	15	33	Increase in Capital Requirements (RAC)	A retrospective change in the rule, applying to all existing captives, requires a 20 to 25 percent increase in capital.	3.0%	1.8%	4.2%	0.052%	0.125%

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Life Rank	P&C Rank	#	Theme (and Risk Category)	Risk Scenario	Average Likelihood (Over Next Three Years)	Average Life Severity (Loss in Life Business Value)	Average P&C Severity (Loss in P&C Business Value)	Life Score	P&C Score
31	18	2	Federal Regulation of Insurance (OVR)	A federal agency gains primacy over the states in insurance regulation, resulting in increased competition from regional, single-state, and non-U.S. insurance companies	2.1%	2.2%	4.5%	0.046%	0.096%
32	23	43	Social Pressure on Financial Sector (MIS)	Post-financial-crisis social attitudes toward the financial sector increase pressure on regulators, resulting in a more hostile regulatory environment with significant increases in frequency/severity of fines and use of media to drive policy.	5.3%	0.8%	1.5%	0.044%	0.080%
33	48	34	Increase in Reserve & Capital Requirements (RAC)	NAIC makes material changes to AG43 increasing reserve and capital requirements for variable annuity guarantees.	4.0%	1.1%	0.3%	0.044%	0.010%
34	42	47	Re-classification of Career Agents (MIS)	IRS audit results in retrospective reclassification of captive/career agents as company employees (despite Section 530 safe harbor provisions for prospective reclassifications), increasing expenses.	2.0%	2.2%	1.3%	0.043%	0.025%
35	32	10	Conflicting Jurisdictions (OVR)	In one state, an agency other than the insurance department exerts regulatory control, some of which conflicts with existing insurance regulations, increasing compliance costs and resulting in confusion that impedes strategy development and execution.	3.0%	1.3%	1.8%	0.040%	0.053%
36	5	53	Consumerist Pressure on Rates (RES)	A national consumerist movement puts pressure on regulators, which results in suppression of rate adequacy.	3.4%	1.2%	6.2%	0.039%	0.210%
37	33	6	Federal Reserve Auditing Fees (OVR)	Federal Reserve increases its auditing fees and expands their applicability to a broader range of entities.	5.9%	0.6%	0.9%	0.033%	0.052%
38	20	41	Competitor Failures (DIS)	Epidemic of insurance company failures, due to poor management, results in state insurance commissioner forcing us to take over failed companies and/or blocks of business.	1.9%	1.6%	4.7%	0.031%	0.089%

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Life Rank	P&C Rank	#	Theme (and Risk Category)	Risk Scenario	Average Likelihood (Over Next Three Years)	Average Life Severity (Loss in Life Business Value)	Average P&C Severity (Loss in P&C Business Value)	Life Score	P&C Score
39	1	14	Retroactive Expansion of Benefits (REQ)	A major hurricane occurs, impacting one or more states, and social pressure from consumers mistakenly believing they had more coverage results in regulators requiring retroactive expansion of coverage beyond the contract wording.	6.4%	0.4%	5.7%	0.027%	0.364%
40	17	35	Suitability Restrictions on Product Offerings (RES)	Increased regulatory scrutiny on issues related to policyholder value and product suitability results in restrictions on product offerings.	3.8%	0.7%	2.8%	0.026%	0.104%
41	38	42	Increase in Guaranty Fund Assessments (MIS)	Changes in guaranty fund structure result in increased assessments.	3.2%	0.6%	1.2%	0.018%	0.039%
42	14	4	Standardization Requirements Drive Commoditization (RES)	Federal Insurance Office unexpectedly succeeds in pressuring states to adopt standardized property-casualty forms, rate classifications or rates, commoditizing products and reducing competitive advantages and profit margins.	1.8%	0.9%	7.8%	0.017%	0.142%
43	12	12	Retroactive Expansion of Benefits (REQ)	Major CAT event (such as Category 4 or 5 hurricane striking a coastal city) leads to that state's insurance commissioner levying an assessment on insurers to pay for all damages caused by the storm, resulting in permanently higher insurance and reinsurance prices going forward, in expectation of such regulatory fiat becoming a precedent that is following in the future, in that state and possibly other states.	2.5%	0.5%	6.1%	0.013%	0.153%
44	24	45	Restrictions on Involuntary Homeowners Insurance (RES)	Regulatory constraints on involuntary homeowners insurance (e.g., restrictions on policy forms and coverages, pricing, and/or underwriting flexibility) result in lower profitability.	4.6%	0.3%	1.8%	0.011%	0.080%

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Life Rank	P&C Rank	#	Theme (and Risk Category)	Risk Scenario	Average Likelihood (Over Next Three Years)	Average Life Severity (Loss in Life Business Value)	Average P&C Severity (Loss in P&C Business Value)	Life Score	P&C Score
45	27	49	Restrictions on Auto Insurance Claims Practices (RES)	Several states, collectively representing 25 percent of national market share, prohibit auto insurers from using after-market parts, significantly increasing auto repair costs.	3.0%	0.3%	2.4%	0.008%	0.071%
46	43	37	Retroactive Expansion of Foreign Corrupt Practices Act (REQ)	Regulators clarify wording in the Foreign Corrupt Practices Act retroactively expanding restrictions, resulting in the company being found to have violations, resulting in fines, potential reputational damage, and costs to remediate practices/processes.	1.5%	0.5%	1.4%	0.007%	0.021%
47	8	13	Retroactive Expansion of Benefits (REQ)	Judiciary or regulatory ruling retroactively expands liability of insurance contract beyond contractual intention (e.g., Texas mold crisis).	2.7%	0.3%	6.4%	0.007%	0.175%
48	29	50	Restrictions on Auto Insurance Claims Practices (RES)	Several states, collectively representing 25 percent of national market share, prohibit auto insurers from using repair-shop referrals.	2.5%	0.3%	2.4%	0.006%	0.059%
49	36	52	Restrictions on Excess Profits (RES)	Several states, collectively representing 25 percent of national market share, pass restrictive excess-profit laws on auto insurers.	2.4%	0.3%	2.0%	0.006%	0.048%
50	35	39	Uniform Rating in Homeowners Insurance (RES)	HUD finds convincing evidence that homeowners rates have a disparate impact on a protected group, requiring carriers to charge a uniform homeowners rate, leading to adverse selection.	2.4%	0.3%	2.1%	0.006%	0.049%
51	30	51	Restrictions on Auto Insurance Claims Practices (RES)	Several states, collectively representing 25 percent of national market share, require auto insurers to make financial settlement offers within unreasonably short time periods.	2.0%	0.3%	2.9%	0.005%	0.058%

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Life Rank	P&C Rank	#	Theme (and Risk Category)	Risk Scenario	Average Likelihood (Over Next Three Years)	Average Life Severity (Loss in Life Business Value)	Average P&C Severity (Loss in P&C Business Value)	Life Score	P&C Score
52	51	40	Compliance Violation (VIO)	Company is found to have inadvertently violated Office of Foreign Assets Control (OFAC) rules through its foreign dealings with a business partner or foreign investment, resulting in significant fines.	0.9%	0.4%	0.5%	0.004%	0.005%
53	34	48	Mandated Coverage (REQ)	Legislation mandates that homeowners insurance covers floods.	1.4%	0.3%	3.8%	0.003%	0.051%

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Appendix B: U.S. Research Study—Key Regulatory-Related Risks—Ranked by P&C Score

Life Rank	P&C Rank	#	Theme	Risk Scenario	Average Likelihood (Over Next Three Years)	Average Life Severity (Loss in Life Business Value)	Average P&C Severity (Loss in P&C Business Value)	Life Score	P&C Score
39	1	14	Retroactive Expansion of Benefits (REQ)	A major hurricane occurs, impacting one or more states, and social pressure from consumers mistakenly believing they had more coverage results in regulators requiring retroactive expansion of coverage beyond the contract wording.	6.4%	0.4%	5.7%	0.027%	0.364%
1	2	20	New Accounting Standards (ACT)	New GAAP reporting standards (either by FASB and/or IASB) are adopted in 2016 (effective 2019) and result in significant expense to implement and maintain, and possibly an increase in the cost of equity capital (due to decreased transparency and higher earnings volatility).	9.6%	3.0%	3.5%	0.285%	0.331%
7	3	11	Retroactive Expansion of Benefits (REQ)	Judiciary or regulatory ruling retroactively expands liability of insurance contract beyond contractual intention (e.g., requirement to seek out unreported life insurance claimants).	8.7%	2.2%	3.5%	0.187%	0.302%
8	4	27	Affordable Care Act (DIS)	The Affordable Care Act (ACA) increases medical costs significantly, triggering a three-year recession with -1 percent GDP growth and 8.5 percent unemployment.	5.6%	2.9%	5.2%	0.159%	0.292%
36	5	53	Consumerist Pressure on Rates (RES)	A national consumerist movement puts pressure on regulators, which results in suppression of rate adequacy.	3.4%	1.2%	6.2%	0.039%	0.210%
5	6	1	Dual Regulation (OVR)	Dual regulation (at state and federal level) results in new accounting and solvency standards emerging that create an inconsistent and non-level playing field in the insurance market.	6.5%	3.1%	3.1%	0.202%	0.202%
19	7	3	Dual Regulation (OVR)	Insurance industry becomes subject to a federal regulatory body (e.g., Securities and Exchange Commission (SEC)) in addition to state regulation, resulting in regulations that are overly restrictive and more expensive to comply with.	4.8%	2.5%	4.2%	0.120%	0.201%

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Life Rank	P&C Rank	#	Theme	Risk Scenario	Average Likelihood (Over Next Three Years)	Average Life Severity (Loss in Life Business Value)	Average P&C Severity (Loss in P&C Business Value)	Life Score	P&C Score
47	8	13	Retroactive Expansion of Benefits (REQ)	Judiciary or regulatory ruling retroactively expands liability of insurance contract beyond contractual intention (e.g., Texas mold crisis).	2.7%	0.3%	6.4%	0.007%	0.175%
4	9	9	Dodd-Frank Regulation of Banks (OVR)	Dodd-Frank further expands regulations on banks, resulting in significant increase to compliance costs for insurers that have banks within their organizational structure.	9.9%	2.2%	1.8%	0.216%	0.173%
15	10	31	Bankruptcies of Municipalities Impact Economy (DIS)	Unfunded obligations result in three to five major municipalities declaring bankruptcy (like Detroit), resulting in municipal bond defaults and prolonging the national recovery from the financial crisis.	4.7%	2.7%	3.7%	0.125%	0.172%
3	11	29	Fed Policy Impacts Economy (DIS)	Fed actions result in inflation and/or stagflation, such that, by 2016, 10-year Treasury rates are 8.00 percent, and remain there for three to five years.	3.6%	6.8%	4.3%	0.243%	0.155%
43	12	12	Retroactive Expansion of Benefits (REQ)	Major CAT event (such as Category 4 or 5 hurricane striking a coastal city) leads to that state’s insurance commissioner levying an assessment on insurers to pay for all damages caused by the storm, resulting in permanently higher insurance and reinsurance prices going forward, in expectation of such regulatory fiat becoming a precedent that is following in the future, in that state and possibly other states.	2.5%	0.5%	6.1%	0.013%	0.153%
13	13	32	Increase in Capital Requirements (RAC)	Capital requirements (either issued by the International Association of Insurance Commissioners (IAIS), Federal Insurance Office, or other entity) increase by 20 percent.	3.1%	4.2%	4.9%	0.130%	0.150%
42	14	4	Standardization Requirements Drive Commoditization (RES)	Federal Insurance Office unexpectedly succeeds in pressuring states to adopt standardized property-casualty forms, rate classifications or rates, commoditizing products and reducing competitive advantages and profit margins.	1.8%	0.9%	7.8%	0.017%	0.142%

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Life Rank	P&C Rank	#	Theme	Risk Scenario	Average Likelihood (Over Next Three Years)	Average Life Severity (Loss in Life Business Value)	Average P&C Severity (Loss in P&C Business Value)	Life Score	P&C Score
30	15	33	Increase in Capital Requirements (RAC)	A retrospective change in the rule, applying to all existing captives, requires a 20 to 25 percent increase in capital.	3.0%	1.8%	4.2%	0.052%	0.125%
6	16	28	Fed Policy Impacts Economy (DIS)	Fed actions result in a double-dip recession.	4.9%	4.1%	2.1%	0.200%	0.104%
40	17	35	Suitability Restrictions on Product Offerings (RES)	Increased regulatory scrutiny on issues related to policyholder value and product suitability results in restrictions on product offerings.	3.8%	0.7%	2.8%	0.026%	0.104%
31	18	2	Federal Regulation of Insurance (OVR)	A federal agency gains primacy over the states in insurance regulation, resulting in increased competition from regional, single-state, and non-U.S. insurance companies.	2.1%	2.2%	4.5%	0.046%	0.096%
26	19	46	Rate Restrictions (RES)	Regulatory constraints on rates (e.g., rate freeze) in one or more states (note: each carrier should select the state(s) representing their largest markets) result in lower profitability and possible negative impacts to (or even downgrade of) the company's credit rating.	3.9%	1.8%	2.4%	0.071%	0.094%
38	20	41	Competitor Failures (DIS)	Epidemic of insurance company failures, due to poor management, results in state insurance commissioner forcing us to take over failed companies and/or blocks of business.	1.9%	1.6%	4.7%	0.031%	0.089%
25	21	5	Federal Reserve Requirements (OVR)	Increased scrutiny and requirements (e.g., stress testing, increased rigor in internal audit, etc.) by Federal Reserve result in higher costs.	7.2%	1.1%	1.2%	0.079%	0.087%

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Life Rank	P&C Rank	#	Theme	Risk Scenario	Average Likelihood (Over Next Three Years)	Average Life Severity (Loss in Life Business Value)	Average P&C Severity (Loss in P&C Business Value)	Life Score	P&C Score
20	22	15	ORSA Disclosures (REQ)	New information gathered by regulators through ORSA requirements leads regulators astray in making unfair cross-industry comparisons, resulting in a significant increase in regulatory scrutiny, reporting, and possibly capital requirements.	5.0%	2.4%	1.8%	0.119%	0.087%
32	23	43	Social Pressure on Financial Sector (MIS)	Post-financial-crisis social attitudes toward the financial sector increase pressure on regulators, resulting in a more hostile regulatory environment with significant increases in frequency/severity of fines and use of media to drive policy.	5.3%	0.8%	1.5%	0.044%	0.080%
44	24	45	Restrictions on Involuntary Homeowners Insurance (RES)	Regulatory constraints on involuntary homeowners insurance (e.g., restrictions on policy forms and coverages, pricing, and/or underwriting flexibility) result in lower profitability.	4.6%	0.3%	1.8%	0.011%	0.080%
27	25	30	Fines (VIO)	Desire for additional revenues by several states results in a more aggressive regulatory environment and that results in a significant increase in insurance company fines.	6.4%	1.0%	1.2%	0.064%	0.077%
22	26	16	Foreign Trend Expands Scrutiny (OVR)	In attempts to keep up with non-U.S. trends, regulators increase level of activity/scrutiny without supporting level of knowledge and understanding, resulting in the need for significant increases in company resources to comply with, respond to, and educate, regulators.	7.0%	1.3%	1.1%	0.093%	0.076%
45	27	49	Restrictions on Auto Insurance Claims Practices (RES)	Several states, collectively representing 25 percent of national market share, prohibit auto insurers from using after-market parts, significantly increasing auto repair costs.	3.0%	0.3%	2.4%	0.008%	0.071%
29	28	44	Delays in Rate Filings (MIS)	Shortage of state insurance department resources creates longer delays in resolving rate filings, resulting in loss of expected revenues.	8.3%	0.6%	0.8%	0.053%	0.062%

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Life Rank	P&C Rank	#	Theme	Risk Scenario	Average Likelihood (Over Next Three Years)	Average Life Severity (Loss in Life Business Value)	Average P&C Severity (Loss in P&C Business Value)	Life Score	P&C Score
48	29	50	Restrictions on Auto Insurance Claims Practices (RES)	Several states, collectively representing 25 percent of national market share, prohibit auto insurers from using repair-shop referrals.	2.5%	0.3%	2.4%	0.006%	0.059%
51	30	51	Restrictions on Auto Insurance Claims Practices (RES)	Several states, collectively representing 25 percent of national market share, require auto insurers to make financial settlement offers within unreasonably short time periods.	2.0%	0.3%	2.9%	0.005%	0.058%
23	31	7	Broker-Dealer Restrictions (RES)	Financial Stability Oversight Council (FSOC) regulations impose stricter fiduciary standards on broker-dealers.	6.5%	1.4%	0.8%	0.092%	0.054%
35	32	10	Conflicting Jurisdictions (OVR)	In one state, an agency other than the insurance department exerts regulatory control, some of which conflicts with existing insurance regulations, increasing compliance costs and resulting in confusion that impedes strategy development and execution.	3.0%	1.3%	1.8%	0.040%	0.053%
37	33	6	Federal Reserve Auditing Fees (OVR)	Federal Reserve increases its auditing fees and expands their applicability to a broader range of entities.	5.9%	0.6%	0.9%	0.033%	0.052%
53	34	48	Mandated Coverage (REQ)	Legislation mandates that homeowners insurance covers floods.	1.4%	0.3%	3.8%	0.003%	0.051%
50	35	39	Uniform Rating in Homeowners Insurance (RES)	HUD finds convincing evidence that homeowners rates have a disparate impact on a protected group, requiring carriers to charge a uniform homeowners rate, leading to adverse selection.	2.4%	0.3%	2.1%	0.006%	0.049%
49	36	52	Restrictions on Excess Profits (RES)	Several states, collectively representing 25 percent of national market share, pass restrictive excess-profit laws on auto insurers.	2.4%	0.3%	2.0%	0.006%	0.048%

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Life Rank	P&C Rank	#	Theme	Risk Scenario	Average Likelihood (Over Next Three Years)	Average Life Severity (Loss in Life Business Value)	Average P&C Severity (Loss in P&C Business Value)	Life Score	P&C Score
14	37	8	Bank-Like Regulations Applied to Insurance (REQ)	Bank-centric capital charges (e.g., based on Basel III) are applied inappropriately (without risk adjustment) to insurance companies, decreasing viability of certain products (such as variable annuities).	4.0%	3.2%	1.1%	0.130%	0.045%
41	38	42	Increase in Guaranty Fund Assessments (MIS)	Changes in guaranty fund structure result in increased assessments.	3.2%	0.6%	1.2%	0.018%	0.039%
28	39	36	New Requirements in Claims Practices (RES)	Regulators concerned about unclaimed property require changes in claims administration practices, resulting in increased costs.	6.7%	0.9%	0.6%	0.063%	0.037%
11	40	24	Loss of Tax Advantages (TAX)	Loss of tax-exempt status of our insurance company legal entity	2.0%	6.9%	1.8%	0.138%	0.035%
2	41	17	Principle-Based Reserves (ACT)	National Association of Insurance Commissioners (NAIC) Principle-Based Reserves (PBR) task force produces a version of PBR that does not provide satisfactory relief from redundant reserves yet eliminates the use of alternative financing solutions.	9.2%	2.7%	0.4%	0.248%	0.034%
34	42	47	Re-classification of Career Agents (MIS)	IRS audit results in retrospective reclassification of captive/career agents as company employees (despite Section 530 safe harbor provisions for prospective reclassifications), increasing expenses.	2.0%	2.2%	1.3%	0.043%	0.025%
46	43	37	Retroactive Expansion of Foreign Corrupt Practices Act (REQ)	Regulators clarify wording in the Foreign Corrupt Practices Act retroactively expanding restrictions, resulting in the company being found to have violations, resulting in fines, potential reputational damage, and costs to remediate practices/processes.	1.5%	0.5%	1.4%	0.007%	0.021%

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Life Rank	P&C Rank	#	Theme	Risk Scenario	Average Likelihood (Over Next Three Years)	Average Life Severity (Loss in Life Business Value)	Average P&C Severity (Loss in P&C Business Value)	Life Score	P&C Score
16	44	26	Underwriting Restrictions (RES)	New federal restrictions on underwriting (for example, prohibiting use of new health-evaluation technology available to consumer) result in permanent 10 percent increase in anti-selection.	3.8%	3.2%	0.5%	0.123%	0.019%
10	45	19	Principle-Based Reserves (ACT)	Uncertainty regarding changes in required life insurance reserves from AG38 to PBR impedes growth as company strategy remains in a holding pattern longer than expected.	7.1%	2.0%	0.3%	0.139%	0.018%
9	46	18	Principle-Based Reserves (ACT)	NAIC decisions on open issues for PBR result in a 25 percent increase on term and universal life reserves.	4.6%	3.0%	0.3%	0.140%	0.012%
24	47	38	Cost Shifting to Private Sector (DIS)	Changes in administrative practices of Social Security Disability Insurance result in shifting costs to private insurance DI carriers.	4.3%	2.0%	0.3%	0.085%	0.011%
33	48	34	Increase in Reserve & Capital Requirements (RAC)	NAIC makes material changes to AG43 increasing reserve and capital requirements for variable annuity guarantees.	4.0%	1.1%	0.3%	0.044%	0.010%
21	49	25	Underwriting Restrictions (RES)	Societal pressures result in several states banning the underwriting use of DNA testing just as it becomes more prevalent and affordable, significantly increasing anti-selection.	4.0%	2.8%	0.3%	0.113%	0.010%
17	50	23	Loss of Tax Advantages (TAX)	Desire for additional revenues and/or tax reform results in federal legislation, passed in 2016 (effective 2018), that puts a fixed-dollar limit on all tax deductions and preferences, including inside buildup, for life insurance and annuity products.	2.8%	4.3%	0.3%	0.121%	0.007%
52	51	40	Compliance Violation (VIO)	Company is found to have inadvertently violated Office of Foreign Assets Control (OFAC) rules through its foreign dealings with a business partner or foreign investment, resulting in significant fines.	0.9%	0.4%	0.5%	0.004%	0.005%

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Life Rank	P&C Rank	#	Theme	Risk Scenario	Average Likelihood (Over Next Three Years)	Average Life Severity (Loss in Life Business Value)	Average P&C Severity (Loss in P&C Business Value)	Life Score	P&C Score
12	52	22	Loss of Tax Advantages (TAX)	Desire for additional revenues and/or tax reform results in federal legislation, passed in 2016 (effective 2018), that eliminates tax deferral of inside buildup for life insurance and annuity products.	1.7%	7.9%	0.3%	0.136%	0.004%
18	53	21	Loss of Tax Advantages (TAX)	Federal legislation, passed in 2016, eliminates the tax-deductibility of life insurance death benefits.	1.6%	7.6%	0.3%	0.121%	0.004%

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Appendix C: Canadian Research Study—Key Regulatory-Related Risks—Ranked by Life Score

Life Rank	P&C Rank	#	Theme	Risk Scenario	Average Likelihood (Over Next Three Years)	Average Life Severity (Loss in Life Business Value)	Average P&C Severity (Loss in P&C Business Value)	Life Score	P&C Score
1	13	11	Underwriting Restrictions (RES)	Regulatory ban on use of genetic testing for underwriting insurance products results in significant anti-selection and requires a shift in product strategy.	7.2%	5.3%	0.8%	0.378%	0.054%
2	14	7	New Accounting Standards (ACT)	IFRS final accounting rules are not reflective of underlying economics of the business, introducing unnecessary additional earnings and capital volatility.	8.4%	4.1%	0.6%	0.346%	0.046%
3	4	17	Increase in Capital Requirements (CAP)	The Office of the Superintendent of Financial Institutions (OSFI) increases the duration mismatch capital charge from 75bps to 150bps.	11.9%	1.8%	0.8%	0.208%	0.097%
4	9	6	New Accounting Standards (ACT)	IFRS 4 Phase 2 implementation date remains as 2018 despite industry pushback.	11.1%	1.7%	0.6%	0.188%	0.066%
5	7	18	Increase in Capital Requirements (CAP)	OSFI requires a 20 percent increase in capital charges for holding equities.	6.3%	2.9%	1.1%	0.185%	0.071%

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Life Rank	P&C Rank	#	Theme	Risk Scenario	Average Likelihood (Over Next Three Years)	Average Life Severity (Loss in Life Business Value)	Average P&C Severity (Loss in P&C Business Value)	Life Score	P&C Score
6	2	16	Increase in Capital Requirements (CAP)	Regulators modify capital requirements, resulting in a significant increase in required capital.	3.9%	3.1%	2.8%	0.120%	0.110%
7	10	31	Data Privacy (REQ)	Inability to keep up with the pace and complexity of advancing regulatory rules related to data privacy leads to an inadvertent violation, resulting in significant media attention, some fines, and significant costs to remediate.	3.3%	3.0%	1.9%	0.098%	0.061%
8	31	1	Government Takeover of Market (DIS)	One province mandates that all residents purchase a minimum amount of government-provided life insurance, where one carrier is used to administer the program.	1.5%	6.1%	0.0%	0.092%	0.000%
9	20	23	Bank-Like Regulations (REQ)	Indiscriminate application of banking regulations to insurance companies by regulators such as OSFI, IAIS, and the Fed, results in business impediments, such as challenges to liquidity risk management or inappropriate capital requirements.	3.3%	2.6%	0.8%	0.085%	0.027%
10	11	19	Increase in Capital Requirements (CAP)	OSFI increases the exposure management guidelines for earthquakes, resulting in a minor increase in required capital.	7.8%	1.0%	0.8%	0.078%	0.059%
11	21	10	Underwriting Restrictions (RES)	Legislation is passed prohibiting the use of gender rating for underwriting insurance products (seen as discriminatory).	3.5%	2.1%	0.6%	0.072%	0.022%
12	15	24	Increased Scrutiny (OVR)	Further increase in the intensity of regulatory supervision, resulting in increased costs of compliance	8.4%	0.9%	0.6%	0.071%	0.046%

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Life Rank	P&C Rank	#	Theme	Risk Scenario	Average Likelihood (Over Next Three Years)	Average Life Severity (Loss in Life Business Value)	Average P&C Severity (Loss in P&C Business Value)	Life Score	P&C Score
13	16	21	Increased Volume of Regulations (OVR)	The volume of compliance regulations and/or guidelines issued increases significantly, requiring an increase in compliance-related company resources by 5 to 10 percent.	5.9%	1.1%	0.8%	0.062%	0.044%
14	12	30	Fraud (MIS)	A province's product reform efforts lead to an unintended gap in policy wording, resulting in a significant increase in fraud.	3.1%	1.8%	1.9%	0.058%	0.058%
15	18	3	New Licensing Requirements (REQ)	The Financial Services Commission of Ontario (FSCO) proposes, in a consultation paper, to require as a condition of licensing that insurers be incorporated federally or in a jurisdiction with supervision that meets the new IAIS solvency standards, resulting in (for smaller insurers or those not federally incorporated) higher costs.	6.6%	0.9%	0.5%	0.056%	0.033%
16	19	15	Foreign Trend Expands Scrutiny (OVR)	Following a global trend, regulators increase their overall level of scrutiny and aggressiveness in examining carriers, increasing compliance costs and possibly resulting in an increase in fines and reputation exposure.	4.6%	1.2%	0.7%	0.056%	0.032%
17	29	13	Violation (MIS)	Regulator determines that the company has (unknowingly) violated existing market conduct regulations.	1.8%	3.0%	0.4%	0.056%	0.006%
18	30	20	Increase in Capital Requirements (CAP)	A review of capital requirements for segregated fund guarantees results in an increase in regulatory required capital.	2.3%	2.3%	0.3%	0.052%	0.006%

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Life Rank	P&C Rank	#	Theme	Risk Scenario	Average Likelihood (Over Next Three Years)	Average Life Severity (Loss in Life Business Value)	Average P&C Severity (Loss in P&C Business Value)	Life Score	P&C Score
19	26	12	Expansion of Market Conduct Regulations (REQ)	All jurisdictions adopt something similar to Quebec's Sound Commercial Practices Guideline, but, on implementation, each focuses on different potential market conduct issues, resulting in a significant increase in compliance costs and possible fines for non-compliance.	3.8%	0.8%	0.4%	0.032%	0.014%
20	25	4	Increase in Sales Tax (MIS)	Canada Revenue Agency's increased scrutiny over transactions with managing general agencies (MGAs) results in higher sales taxes, only a portion of which is able to be passed through to consumers, resulting in lower margins.	3.3%	0.9%	0.5%	0.030%	0.016%
21	22	22	Restrictions on Compensation Practices (RES)	The Canadian Securities Administration successfully lobbies to have a law passed requiring that registered investments and mutual funds dealers' compensation be fee-based, rather than commission-based, reducing the viability of the middle-income market.	2.8%	1.1%	0.8%	0.030%	0.021%
22	24	5	Increase in Sales Tax (MIS)	A lack of provincial funds (either due to deficits or unfunded transit initiatives) results in a 2 percent increase in provincial (mostly Ontario) sales tax rates in 2015.	4.4%	0.7%	0.4%	0.028%	0.016%
23	28	25	Restrictions Due to Consumer Protection Concerns (RES)	Social movement results in regulatory reform of consumer protection law regulations and application, results in requiring the company to modify existing products and sales/marketing procedures and possible fines.	2.4%	0.9%	0.5%	0.022%	0.012%

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Life Rank	P&C Rank	#	Theme	Risk Scenario	Average Likelihood (Over Next Three Years)	Average Life Severity (Loss in Life Business Value)	Average P&C Severity (Loss in P&C Business Value)	Life Score	P&C Score
24	23	14	Expansion of Foreign-Account-Tax-Compliance-Act-Like Regulations (REQ)	Other foreign jurisdictions pass regulations similar to the U.S. Foreign Account Tax Compliance Act imposing requirements on Canadian insurers to identify and report information on clients with foreign accounts, increasing compliance costs.	2.1%	0.9%	0.8%	0.019%	0.018%
25	17	26	Retroactive Expansion of Benefits (REQ)	A major flood occurs, and social pressure from consumers mistakenly believing they have coverage causes one province to interpret that the exclusionary wording of some carriers' policies was insufficient, requiring them to retroactively cover losses.	1.5%	0.6%	2.3%	0.009%	0.034%
26	6	27	Retroactive Expansion of Benefits (REQ)	A major earthquake occurs, and social pressure from consumers mistakenly believing they have coverage causes one province to interpret that the exclusionary wording of some carriers' policies was insufficient, requiring them to retroactively cover losses.	1.1%	0.8%	6.7%	0.008%	0.073%
27	27	9	Underwriting Restrictions (RES)	A social movement (originating either internally or from Europe) results in regulators prohibiting the use of credit scoring for underwriting property insurance.	2.8%	0.3%	0.5%	0.007%	0.014%
28	3	2	Government Takeover of Market (DIS)	A province (instruction note: assume the province is the one with your largest block of auto business) takes over all auto insurance, eliminating its auto insurance market.	1.3%	0.0%	8.3%	0.000%	0.103%

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Life Rank	P&C Rank	#	Theme	Risk Scenario	Average Likelihood (Over Next Three Years)	Average Life Severity (Loss in Life Business Value)	Average P&C Severity (Loss in P&C Business Value)	Life Score	P&C Score
28	5	8	Mandated Coverage (DIS)	Ontario P&C auto insurance carriers are unable to achieve cost savings necessary to sustain regulators' expectations of a 15 percent decrease in rates in 2014/2015, resulting in NDP (social-leaning political party) introducing further market restrictions that drive carriers to exit the market, leading to (less-profitable) mandated coverage for the remaining carriers.	3.5%	0.0%	2.1%	0.000%	0.074%
28	8	28	Delays in Rate Filings (MIS)	A provincial auto regulator decides to increase the robustness of the rate filing mechanism, resulting in an onerous process causing significant delays in rate filings and decreasing revenues and profits for six to 12 months due to an inability to quickly correct suboptimal pricing (both too low and too high).	3.0%	0.0%	2.3%	0.000%	0.068%
28	1	29	Restrictions on Rates (RES)	Sentiment at one province that auto insurance profits are too high results in a mandate to decrease premium rates by 20 percent without a commensurate ability to decrease benefits.	7.2%	0.0%	2.4%	0.000%	0.169%

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Appendix D: Canadian Research Study—Key Regulatory-Related Risks—Ranked by P&C Score

Life Rank	P&C Rank	#	Theme	Risk Scenario	Average Likelihood (Over Next Three Years)	Average Life Severity (Loss in Life Business Value)	Average P&C Severity (Loss in P&C Business Value)	Life Score	P&C Score
6	2	16	Increase in Capital Requirements (CAP)	Regulators modify capital requirements, resulting in a significant increase in required capital.	3.9%	3.1%	2.8%	0.120%	0.110%
28	3	2	Government Takeover of Market (DIS)	A province (instruction note: assume the province is the one with your largest block of auto business) takes over all auto insurance, eliminating its auto insurance market.	1.3%	0.0%	8.3%	0.000%	0.103%
3	4	17	Increase in Capital Requirements (CAP)	The Office of the Superintendent of Financial Institutions (OSFI) increases the duration mismatch capital charge from 75bps to 150bps.	11.9%	1.8%	0.8%	0.208%	0.097%
28	5	8	Mandated Coverage (DIS)	Ontario P&C auto insurance carriers are unable to achieve cost savings necessary to sustain regulators' expectations of a 15 percent decrease in rates in 2014/2015, resulting in NDP (social-leaning political party) introducing further market restrictions that drive carriers to exit the market, leading to (less-profitable) mandated coverage for the remaining carriers.	3.5%	0.0%	2.1%	0.000%	0.074%
26	6	27	Retroactive Expansion of Benefits (REQ)	A major earthquake occurs, and social pressure from consumers mistakenly believing they have coverage causes one province to interpret that the exclusionary wording of some carriers' policies was insufficient, requiring them to retroactively cover losses.	1.1%	0.8%	6.7%	0.008%	0.073%

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Life Rank	P&C Rank	#	Theme	Risk Scenario	Average Likelihood (Over Next Three Years)	Average Life Severity (Loss in Life Business Value)	Average P&C Severity (Loss in P&C Business Value)	Life Score	P&C Score
5	7	18	Increase in Capital Requirements (CAP)	OSFI requires a 20 percent increase in capital charges for holding equities.	6.3%	2.9%	1.1%	0.185%	0.071%
28	8	28	Delays in Rate Filings (MIS)	A provincial auto regulator decides to increase the robustness of the rate filing mechanism, resulting in an onerous process causing significant delays in rate filings and decreasing revenues and profits for six to 12 months due to an inability to quickly correct suboptimal pricing (both too low and too high).	3.0%	0.0%	2.3%	0.000%	0.068%
4	9	6	New Accounting Standards (ACT)	IFRS 4 Phase 2 implementation date remains as 2018 despite industry pushback.	11.1%	1.7%	0.6%	0.188%	0.066%
7	10	31	Data Privacy (REQ)	Inability to keep up with the pace and complexity of advancing regulatory rules related to data privacy leads to an inadvertent violation, resulting in significant media attention, some fines, and significant costs to remediate.	3.3%	3.0%	1.9%	0.098%	0.061%
10	11	19	Increase in Capital Requirements (CAP)	OSFI increases the exposure management guidelines for earthquakes, resulting in a minor increase in required capital.	7.8%	1.0%	0.8%	0.078%	0.059%
14	12	30	Fraud (MIS)	A province’s product reform efforts lead to an unintended gap in policy wording, resulting in a significant increase in fraud.	3.1%	1.8%	1.9%	0.058%	0.058%

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Life Rank	P&C Rank	#	Theme	Risk Scenario	Average Likelihood (Over Next Three Years)	Average Life Severity (Loss in Life Business Value)	Average P&C Severity (Loss in P&C Business Value)	Life Score	P&C Score
1	13	11	Underwriting Restrictions (RES)	Regulatory ban on use of genetic testing for underwriting insurance products results in significant anti-selection and requires a shift in product strategy.	7.2%	5.3%	0.8%	0.378%	0.054%
2	14	7	New Accounting Standards (ACT)	IFRS final accounting rules are not reflective of underlying economics of the business, introducing unnecessary additional earnings and capital volatility.	8.4%	4.1%	0.6%	0.346%	0.046%
12	15	24	Increased Scrutiny (OVR)	Further increase in the intensity of regulatory supervision, resulting in increased costs of compliance	8.4%	0.9%	0.6%	0.071%	0.046%
13	16	21	Increased Volume of Regulations (OVR)	The volume of compliance regulations and/or guidelines issued increases significantly, requiring an increase in compliance-related company resources by 5 to 10 percent.	5.9%	1.1%	0.8%	0.062%	0.044%
25	17	26	Retroactive Expansion of Benefits (REQ)	A major flood occurs, and social pressure from consumers mistakenly believing they have coverage causes one province to interpret that the exclusionary wording of some carriers' policies was insufficient, requiring them to retroactively cover losses.	1.5%	0.6%	2.3%	0.009%	0.034%
15	18	3	New Licensing Requirements (REQ)	The Financial Services Commission of Ontario (FSCO) proposes, in a consultation paper, to require as a condition of licensing that insurers be incorporated federally or in a jurisdiction with supervision that meets the new IAIS solvency standards, resulting in (for smaller insurers or those not federally incorporated) higher costs.	6.6%	0.9%	0.5%	0.056%	0.033%

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Life Rank	P&C Rank	#	Theme	Risk Scenario	Average Likelihood (Over Next Three Years)	Average Life Severity (Loss in Life Business Value)	Average P&C Severity (Loss in P&C Business Value)	Life Score	P&C Score
16	19	15	Foreign Trend Expands Scrutiny (OVR)	Following a global trend, regulators increase their overall level of scrutiny and aggressiveness in examining carriers, increasing compliance costs and possibly resulting in an increase in fines and reputation exposure.	4.6%	1.2%	0.7%	0.056%	0.032%
9	20	23	Bank-Like Regulations (REQ)	Indiscriminate application of banking regulations to insurance companies by regulators such as OSFI, IAIS, and the Fed, results in business impediments, such as challenges to liquidity risk management or inappropriate capital requirements.	3.3%	2.6%	0.8%	0.085%	0.027%
11	21	10	Underwriting Restrictions (RES)	Legislation is passed prohibiting the use of gender rating for underwriting insurance products (seen as discriminatory).	3.5%	2.1%	0.6%	0.072%	0.022%
21	22	22	Restrictions on Compensation Practices (RES)	The Canadian Securities Administration successfully lobbies to have a law passed requiring that registered investments and mutual funds dealers' compensation be fee-based, rather than commission-based, reducing the viability of the middle-income market.	2.8%	1.1%	0.8%	0.030%	0.021%
24	23	14	Expansion of Foreign-Account-Tax-Compliance-Act-Like Regulations (REQ)	Other foreign jurisdictions pass regulations similar to the U.S. Foreign Account Tax Compliance Act imposing requirements on Canadian insurers to identify and report information on clients with foreign accounts, increasing compliance costs.	2.1%	0.9%	0.8%	0.019%	0.018%
22	24	5	Increase in Sales Tax (MIS)	A lack of provincial funds (either due to deficits or unfunded transit initiatives) results in a 2 percent increase in provincial (mostly Ontario) sales tax rates in 2015.	4.4%	0.7%	0.4%	0.028%	0.016%

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Life Rank	P&C Rank	#	Theme	Risk Scenario	Average Likelihood (Over Next Three Years)	Average Life Severity (Loss in Life Business Value)	Average P&C Severity (Loss in P&C Business Value)	Life Score	P&C Score
20	25	4	Increase in Sales Tax (MIS)	Canada Revenue Agency's increased scrutiny over transactions with managing general agencies (MGAs) results in higher sales taxes, only a portion of which is able to be passed through to consumers, resulting in lower margins.	3.3%	0.9%	0.5%	0.030%	0.016%
19	26	12	Expansion of Market Conduct Regulations (REQ)	All jurisdictions adopt something similar to Quebec's Sound Commercial Practices Guideline, but, on implementation, each focuses on different potential market conduct issues, resulting in a significant increase in compliance costs and possible fines for non-compliance.	3.8%	0.8%	0.4%	0.032%	0.014%
27	27	9	Underwriting Restrictions (RES)	A social movement (originating either internally or from Europe) results in regulators prohibiting the use of credit scoring for underwriting property insurance.	2.8%	0.3%	0.5%	0.007%	0.014%
23	28	25	Restrictions Due to Consumer Protection Concerns (RES)	Social movement results in regulatory reform of consumer protection law regulations and application, results in requiring the company to modify existing products and sales/marketing procedures and possible fines.	2.4%	0.9%	0.5%	0.022%	0.012%
17	29	13	Violation (MIS)	Regulator determines that the company has (unknowingly) violated existing market conduct regulations.	1.8%	3.0%	0.4%	0.056%	0.006%
18	30	20	Increase in Capital Requirements (CAP)	A review of capital requirement for segregated fund guarantees results in an increase in regulatory required capital.	2.3%	2.3%	0.3%	0.052%	0.006%

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Life Rank	P&C Rank	#	Theme	Risk Scenario	Average Likelihood (Over Next Three Years)	Average Life Severity (Loss in Life Business Value)	Average P&C Severity (Loss in P&C Business Value)	Life Score	P&C Score
8	31	1	Government Takeover of Market (DIS)	One province mandates that all residents purchase a minimum amount of government-provided life insurance, where one carrier is used to administer the program.	1.5%	6.1%	0.0%	0.092%	0.000%

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Appendix E: Top-Five Key Risks Sharing Top-10 Life Score and P&C Score Rankings

U.S. Results

#	U.S. Top-Five Risk	Original Risk Scenario from Part 1
1	New GAAP reporting standards (either by FASB and/or IASB)	New GAAP reporting standards (either by FASB and/or IASB) are adopted in 2016 (effective 2019) and result in significant expense to implement and maintain, and possibly an increase in the cost of equity capital (due to decreased transparency and higher earnings volatility).
2	Dodd-Frank regulations	Dodd-Frank further expands regulations on banks, resulting in significant increase to compliance costs for insurers that have banks within their organizational structure.
3	Dual regulation (at state and federal level)	Dual regulation (at state and federal level) results in new accounting and solvency standards emerging that create an inconsistent and non-level playing field in the insurance market.
4	Judiciary or regulatory ruling regarding expansion of liability of insurance contract beyond contractual intention	Judiciary or regulatory ruling retroactively expands liability of insurance contract beyond contractual intention (e.g., requirement to seek out unreported life insurance claimants).
5	The Affordable Care Act (ACA) impact on medical costs	The Affordable Care Act (ACA) increases medical costs significantly, triggering a three-year recession with -1 percent GDP growth and 8.5 percent unemployment.

Canadian Results

#	Canadian Top-Five Risk	Original Risk Scenario from Part 1
1	OSFI changes to duration mismatch capital charge	The Office of the Superintendent of Financial Institutions (OSFI) increases the duration mismatch capital charge from 75bps to 150bps.
2	IFRS 4 Phase 2 implementation	IFRS 4 Phase 2 implementation date remains as 2018 despite industry pushback.
3	OSFI change to capital charges for holding equities	OSFI requires a 20 percent increase in capital charges for holding equities.
4	Regulators modify capital requirements	Regulators modify capital requirements, resulting in a significant increase in required capital.
5	Pace and complexity of advancing regulatory rules related to data privacy	Inability to keep up with the pace and complexity of advancing regulatory rules related to data privacy leads to an inadvertent violation, resulting in significant media attention, some fines, and significant costs to remediate.

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Appendix F: U.S. Research Study—Risk Scenarios and Mitigation Tactics for Top-Five Regulatory-Related Risks

Each table below lists the distinct risk scenarios provided for each top-five risk and any mitigation identified. The risk scenario corresponding to the credible-worst-case scenario from Part 1 always appears as "scenario A" in the table. Where more than a single participant provided a response—either a risk scenario or a mitigation tactic—the number of participants providing the particular response is shown in [brackets] following the item. When one or more participants identifying the risk scenario as a key risk did not identify any mitigation, this is also indicated, along with the number of participants doing so.

Types of mitigation are categorized as follows:

- In place: Already completed/implemented and in place.
- In process: Underway.
- Planned: Plan to implement in near future.
- If event likely: Would be implemented if the risk scenario were to increase in likelihood beyond a threshold.
- Post-event: Would be implemented if the risk scenario were to occur.

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Risk #1: New GAAP reporting standards (either by FASB and/or IASB)		
#	**Risk Scenario**	**Mitigation**
A	New GAAP reporting standards (either by FASB and/or IASB) are adopted in 2016 (effective 2019) and result in significant expense to implement and maintain, and possibly an increase in the cost of equity capital (due to decreased transparency and higher earnings volatility). [5]	In place • Communications with FASB directly or via industry group [3] • Lobbying [3] • Monitoring developments In process • Drafting communications to educate analysts and internal stakeholders on implications to volatility of financials • Preparing plans to enhance systems If event likely • Perform gap analysis and early development of implementation plan for staff, consulting and software resources to avoid industry scramble Post-event • Consider changing or change product design [2] • Consider exiting a product • Reduce sales volume • Change investment strategy • Hedging None specified [1]
B	New GAAP reporting standards that differ from each other are adopted by FASB (less drastic) and IASB in 2017 (effective 2020) and result in significant expense to implement and maintain, and possibly an increase in the cost of equity capital (due to decreased transparency and higher earnings volatility).	In place • Monitoring developments • Communications with FASB via industry group If event likely • Perform gap analysis and early development of implementation plan for staff, consulting and software resources to avoid industry scramble Post-event • Consider changing product design • Consider exiting a product
C	Multiple iterations of FASB improvements followed by eventual convergence with IASB result in having to do two or three GAAP conversions.	In place • Communications with FASB via industry group Post-event • Consider changing company structure, either setting up a smaller subsidiary or not expanding overseas
D	FASB and IASB converge earlier than expected.	None specified [1]
E	FASB and IASB quickly adopt separate standards, requiring two implementations.	Post-event • Consider changing company structure, either setting up a smaller subsidiary or not expanding overseas

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Risk #2: Dodd-Frank regulations		
#	**Risk Scenario**	**Mitigation**
A	Dodd-Frank further expands regulations on banks, resulting in significant increase to compliance costs for insurers that have banks within their organizational structure.	In place • Educating federal regulators • Lobbying congressional staff • Being responsive to, and maintaining good relationship with, federal regulators
B	Consumer Financial Protection Bureau (CFPB) increases restrictions on mortgage-related insurance products, resulting in rate restrictions and margin compression.	In place • Lobbying • Lobbying through trade associations • Educating CFPB on mortgage-related insurance products If event likely • Diversifying product offerings
C	Definition of a Systemically Important Financial Institution (SIFI) is expanded to include more banks and the Fed begins charging significant auditing fees to insurers owning banks.	Post-event • Consider reincorporating bank into a credit union • Consider selling the bank
D	Bank-centric capital standards are applied to insurance companies.	In place • Educate Congress, Treasury, the Federal Insurance Office, and the National Association of Insurance Commissioners • Highly engaged in discussions through industry group Post-event • Consider reinsurance

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Risk #3: Dual regulation (at state and federal level)		
#	**Risk Scenario**	**Mitigation**
A	Dual regulation (at state and federal level) results in new accounting and solvency standards emerging that create an inconsistent and non-level playing field in the insurance market. [6]	In place • Direct lobbying efforts of state and national regulators [3] • Lobbying through trade/professional associations [2] • Monitoring [2] • Educating federal regulators • Participating in industry discussions • Emerging risk management process to monitor impending regulations • Maintaining strong capital position (allows weathering impacts of risks like these) Post-event • Hire additional accountants and actuaries • Diversify business geographically • Adjust product features and pricing • Consider changing company structure, either setting up a smaller subsidiary or not expanding overseas • Consider introducing new products • Consider changes to target markets None specified [1]
B	Federal requirements force adoption of a blunt-tool capital formula that increases capital significantly, creating an inconsistent and non-level playing field in the insurance market and significantly challenging the economic viability of certain products. [5]	In place • Monitoring • Monitoring via participation in industry groups • Lobbying directly • Lobbying through trade associations Post-event • Hire additional accountants and actuaries • Explore reinsurance or capital markets solutions (or exiting products if those do not provide sufficient relief) None specified [1]
C	Insurance companies are permitted to select federal or state regulatory oversight, creating regulatory arbitrage opportunities. [2]	None specified [2]
D	Pressure from federal regulators leads states to adopt standardized forms, rate classifications and rates, resulting in commoditization of large portion of small business insurance market.	In place • Shoring up analytical capabilities, including re rate development (e.g., P&C predictive modeling)
E	Pressure from federal regulators causes states to adopt liberal open-competition laws, resulting in more accurate pricing country-wide and lower operating expenses.	None specified [1]
F	Differing views between attorney general and state insurance departments on appropriateness of pricing result in impeding business.	In place • Communicate with state insurance departments prior to rate filings
G	SEC 10-K-like requirements on executive compensation disclosures are applied to mutual insurance companies.	None specified [1]
H	Dual regulation (at state and federal level) increases the costs of rate filings and results in imposition of minimum loss ratio requirements.	In place • Lobbying directly • Lobbying through trade associations Post-event • Explore tactics such as exiting selected states and changing product design

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Risk #3: Dual regulation (at state and federal level)		
#	**Risk Scenario**	**Mitigation**
I	Federal regulators follow International Association of Insurance Supervisors (IAIS) direction, imposing international standards on large insurers (either Systemically Important Financial Institutions (SIFIs) or Internationally Active Insurance Groups (IAIGs) or using some size threshold), creating a non-level playing field.	In place • Working with international groups and lead regulator to ensure U.S. National Association of Insurance Commissioners is recognized • Worked on agreement not to have "deduction and aggregation" approach that is used in Europe • Encouraging legislation to have a lead U.S. regulator interact with federal and international regulators • Parent company communicates our concerns to regulators in quarterly meetings • Simplifying our corporate structure • Creating coalition with like-minded insurers • Lobbying
J	We become subject to Securities and Exchange Commission regulation and must prepare GAAP financials, producing strain on resources and technology.	None specified [1]
K	Federal and state regulators simultaneously regulate in uncoordinated way, resulting in situations where violations are difficult to avoid.	In place • Lobbying directly • Communicating to regulators the reason/logic of avoiding this situation Post-event • Consider judicial actions as last recourse
L	States maintain regulatory authority over rates and federal regulators gain regulatory authority over solvency, resulting in a disconnect from what has historically created some regulatory balance (e.g., if rates are too low then insolvencies are more likely).	In place • Lobbying directly • Communicating to regulators the reason/logic of avoiding this situation Post-event • Consider judicial actions as last recourse
M	Multiple entities (e.g., states, Financial Stability Oversight Council (FSOC), the Federal Reserve, International Association of Insurance Supervisors (IAIS), the Financial Stability Board (FSB)) set conflicting capital standards, resulting in significant shift in pricing strategy for portfolio.	In place • Monitor proposals and lobby against any undesirable components • Highly engaged in discussions through industry group
N	Multiple entities (e.g., states, Financial Stability Oversight Council (FSOC), the Federal Reserve, International Association of Insurance Supervisors (IAIS), the Financial Stability Board (FSB)) set conflicting capital standards, triggering restrictions (e.g., on dividends, share buybacks) and impinging near-term capital flexibility.	In place • Monitor proposals and lobby against any undesirable components • Highly engaged in discussions through industry group
O	Capital standards are adopted that create a non-level playing field regarding insurance vs. banks as well as U.S. vs. foreign insurers.	In place • Monitor proposals and lobby against any undesirable components • Highly engaged in discussions through industry group

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Risk #4: Judiciary or regulatory ruling regarding expansion of liability of insurance contract beyond contractual intention		
#	**Risk Scenario**	**Mitigation**
A	Judiciary or regulatory ruling retroactively expands liability of insurance contract beyond contractual intention (e.g., requirement to seek out unreported life insurance claimants). [7]	In place • Product design and contractual wording are carefully worded so as to minimize potential of regulatory expansion of intended coverage. • Tightened up contractual language on new products • Monitoring claims activities via weekly management discussions involving claims and pricing personnel and, separately, all senior officers • Participation in trade associations to identify marketing, regulatory and judicial trends • Monitor plaintiff bar activities to identify trends and proactively reword contracts to clarify language • Discussions with the board regarding potential reputational damage to develop mitigation plans • Enhanced claims practices to address any potential subjectivity Post-event • Explore ways to tighten contract wording to avoid some of the impact • Potentially change product offerings None specified [1]
B	Uninsured losses caused by a major catastrophe are mandated to be paid by insurers by regulatory fiat.	Post-event • Investigate potential benefits of lobbying efforts
C	Ability to change contractual features (e.g., rate increases) becomes restricted by regulators, despite contractual language	In place • Product design and contractual wording are carefully worded so as to minimize potential of regulatory expansion of intended coverage. • Actively working with regulators to communicate rationale/strategy
D	Unclaimed property audits by state regulators get much more aggressive in interpreting amount of unreported life claims.	In place • Working with industry groups to have the model act passed by states
E	A ruling on "Medallion" health plans significantly expands benefits beyond those intended	In place • Lobbying • Good claims practices, including clear language for denials
F	Government seeking revenues requires that non-ADL-disabled are also entitled to long-term care benefits or expands definition of ADL-disabled (ADL = activities of daily living).	Post-event • Increase reinsurance • Reduce limit on lifetime benefits
G	Regulatory restrictions on handling of non-guaranteed elements	None specified [1]
H	States seeking revenues expand state audits to areas other than unclaimed property.	If event likely • Work with legislators to restrict state treasury overreach

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Risk #5: The Affordable Care Act (ACA) impact on medical costs		
#	**Risk Scenario**	**Mitigation**
A	Affordable Care Act (ACA) increases medical costs significantly, triggering a three-year recession with -1 percent GDP growth and 8.5 percent unemployment. [7]	In place • Monitoring market conditions • Monitoring of coordination-of-benefits (COB) provisions between Medicare and other forms of medical insurance • Modeling and analysis of economic scenarios and various tailored mitigation to remain with risk limits/appetite to increase chances of weathering an economic storm • Testing business plan under stressed scenarios • Hedging via derivative instruments against economic downturns • Hedging interest rate risk • Adjust plan design to offset increasing costs (e.g., wellness programs) • Participation in risk adjustment transfers between reinsurers based on patient risk profile • Lobbying for federal reinsurance program extension beyond 2014 • Expense reduction efforts • Maintaining adequate rates Planned • Hire additional service-related personnel to increase policy retention Post-event • Increase quality of investment portfolio [2] • Aggressively pursue large rate increases • Increase service-related technology infrastructure to mitigate decrease in retention from economic downturn
B	Affordable Care Act (ACA) increases medical costs significantly, triggering a three-year recession with -1 percent GDP growth and 8.5 percent unemployment, and sustained lower interest rates.	In place • Normal monitoring of market conditions Post-event • Restrict or terminate employee medical coverage
C	Affordable Care Act (ACA) leads to a single-payer government health care system, resulting in companies terminating employee medical coverage as they move to exchanges, increasing taxes.	None specified [1]
D	Restrictive fee schedules imposed in conjunction with the Affordable Care Act (ACA) result in cost shifting to claims covered by P&C insurance policies, increasing our loss ratio by one to three points.	In place • Medical bill reviews Post-event • Increase pricing and tighten underwriting using more advanced analytical capabilities • Expand medical bill reviews
E	Affordable Care Act (ACA) increases medical costs significantly and fails to decrease uninsured, resulting in additional government spending to double-down, resulting in increased taxes, an economic downturn, and decrease in consumer spendable income/assets.	In place • Modeling and analysis of economic scenarios and various tailored mitigation to remain with risk limits/appetite to increase chances of weathering an economic storm
F	Affordable Care Act (ACA) leads to significant increases in Medicare/Medicaid, which shifts even more costs to other insureds, resulting in tax increases, which increases attractiveness of tax-advantaged insurance products and an increase in long-term care and long-term disability sales.	Post-event • Develop product offering tailored to match changing needs of marketplace (e.g., low-cost, tax-advantaged products)

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Risk #5: The Affordable Care Act (ACA) impact on medical costs		
#	**Risk Scenario**	**Mitigation**
G	Employers send employees to the exchanges, reducing our producers' compensation, disrupting broker-based distribution and lowering sales.	In place • Diversify our distribution channels
H	Affordable Care Act (ACA) improves population health, reduces unnecessary medical procedures, and improves billing transparency, resulting in a 200-basis-point decrease in medical inflation, increasing profits in the short term and lowering insurance premiums in the long term.	None specified [1]

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Appendix G: Canadian Research Study—Risk Scenarios and Mitigation Tactics for Top-Five Regulatory-Related Risks

Each table below lists the distinct risk scenarios provided for each top-five risk and any mitigation identified. The risk scenario corresponding to the credible-worst-case scenario from Part 1 always appears as "scenario A" in the table. Where more than a single participant provided a response—either a risk scenario or a mitigation tactic – the number of participants providing the particular response is shown in [brackets] following the item. When one or more participants identifying the risk scenario as a key risk did not identify any mitigation, this is also indicated, along with the number of participants doing so.

Types of mitigation are categorized as follows:

- In place: Already completed/implemented and in place.
- In process: Underway.
- Planned: Plan to implement in near future.
- Post-event: Would be implemented if the risk scenario were to occur.

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Risk #1: OSFI changes to duration mismatch capital charge		
#	**Risk Scenario**	**Mitigation**
A	OSFI increases duration mismatch capital charge from 75bps to 150bps. [5]	In place • Good asset-liability matching that is tightly monitored • Hedging with interest rate swaps Post-event • Shift to longer-duration assets, such as mortgages and real estate • Change product portfolio toward offerings with shorter-tail liabilities and/or lower market risk exposure • On the P&C side, reduce duration mismatch via asset strategies and risk transfer strategies (e.g., reinsurance) None specified [1]
B	OSFI increases duration mismatch capital charge from 75bps to 125bps.	In place • Good asset-liability matching that is tightly monitored
C	OSFI increases duration mismatch capital charge from 75bps to 175bps.	In place • Good asset-liability matching that is tightly monitored
D	OSFI bases duration mismatch capital charge on yield curve shift provided by regulator.	In place • Hedging with interest rate swaps Post-event • Additional focus on managing key rate duration mismatches
E	OSFI increases duration mismatch capital charge from 75bps to greater than 150bps but allows diversification offsets.	In place • Hedging with interest rate swaps
F	OSFI changes rule to limit assets considered as backing liabilities, reducing required capital.	None specified [1]

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Risk #2: IFRS 4 Phase 2 implementation		
#	**Risk Scenario**	**Mitigation**
A	IFRS 4 Phase 2 implementation date remains as 2018 despite industry pushback. [6]	In place • Developed plan to modify reserve valuation system • Providing input via participation in industry committees • Evaluated impact on balance sheet, product liabilities and capital • Created consistent enterprise-wide project management streams • Enhanced efficiencies by implementing lean methodologies In process • Developing implementation plan regarding human resources and technology Planned • Hire consultants to make required changes to financial reporting system Post-event • Start implementation project as soon as requirements finalized • Change product offering • Change compensation structure • Significant curtailment of business activities • Enhance investor communications to explain impact
B	IFRS 4 Phase 2 implementation date remains as 2018 but modified by industry pushback, resulting in less system modification and lower volatility of financial results.	None specified [1]
C	IFRS 4 Phase 2 implementation date is 2019, but optional in 2018.	In place • Provide input via participation in industry committees In process • Developing implementation plan re human resources and technology Post-event • Start implementation project as soon as requirements finalized
D	IFRS is adopted in a piecemeal and uncoordinated way, significantly increasing complexity and implementation difficulty.	None specified [1]
E	IFRS 4 Phase 2 implementation date remains as 2018 despite industry pushback, and regulators are inflexible regarding problems that can be expected to arise, particularly on the Life side.	Post-event • Become more conservative in capital management to compensate for accounting asset-liability mismatch • Enhance investor communications to explain impact

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Risk #3: OSFI change to capital charges for holding equities		
#	**Risk Scenario**	**Mitigation**
A	OSFI requires a 20 percent increase in capital charges for holding equities. [5]	In place • Worked with investment and actuarial teams to test possible changes in investment guidelines • Divested virtually all common equity holdings Post-event • Modify investment guidelines to minimize the capital impact • Reduce equity holdings [2] None specified [1]
B	OSFI requires a 10 percent increase in capital charges for holding equities.	None specified [1]
C	OSFI requires a 30 percent increase in capital charges for holding equities but allows diversification offsets.	In place • Divested virtually all common equity holdings
D	OSFI requires a 50 percent increase in capital charges for holding equities.	Post-event • Moderate change in investment policy/mix and moderate reduction in equity exposures
E	OSFI requires a 100 percent increase in capital charges for holding equities.	Post-event • Significant change in investment policy/mix and significant reduction in equity exposures
F	OSFI requires a 200 percent increase in capital charges for holding equities.	Post-event • Aggressive change in investment policy/mix and aggressive (e.g., 50 percent) reduction in equity exposures

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Risk #4: Regulators modify capital requirements		
#	**Risk Scenario**	**Mitigation**
A	Regulators modify capital requirements, resulting in significant increase in required capital. [2]	In place • Lobbying to change onerous aspects, such as lack of diversification/correlation offsets within market risks • Lobbying for full/partial use of internal risk capital models • Openly discuss operating plan and financials with regulators • Communicate with parent company regarding capital needs Post-event • Review risk profile for opportunities
B	Regulators modify capital requirements, resulting in a significant increase in required capital, via (a) restricting when premium can be ceded to reinsurer; and (b) ability to count intangibles as Tier-2 capital.	In place • Worked with investment and actuarial teams to test possible changes in investment guidelines • Internal discussions to identify and plan mitigation options Post-event • Modify investment guidelines and/or reinsurance arrangements to minimize capital impact • Find ways to raise capital
C	Regulators modify capital requirements, resulting in a significant increase in required capital, via restricting when premium can be ceded to reinsurer.	In place • Worked with investment and actuarial teams to test possible changes in investment guidelines • Internal discussions to identify and plan mitigation options Post-event • Modify investment guidelines and/or reinsurance arrangements to minimize capital impact • Find ways to raise capital
D	Regulators modify capital requirements, resulting in a small decrease in required capital in 2016 (e.g., allowing partial use of internal risk capital model for insurance risk).	In place • Confirmed validity of any reduction for our risk profile based on outputs from internal model (avoiding artificial arbitrage reductions in capital) • Aligned economic capital initiatives to get ready for this opportunity
E	Regulators modify capital requirements, resulting in a significant increase in required capital and/or a decrease in what is counted as available capital.	In place • Participate in OSFI impact studies • Participate in international impact studies to bring to OSFI's attention areas of unfairly disproportional impact Post-event • If needed, consider changing investment portfolio • If needed, consider changing hedging
F	Regulators modify capital requirements, resulting in a 20 percent increase in required capital.	Post-event • Evaluate best option among the following, depending on the impact of the changes: (a) diversify product portfolio; (b) increase reinsurance; or (c) raise capital

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Risk #5: Pace and complexity of advancing regulatory rules related to data privacy		
#	**Risk Scenario**	**Mitigation**
A	Inability to keep up with the pace and complexity of advancing regulatory rules related to data privacy leads to an inadvertent violation, resulting in significant media attention, some fines, and significant costs to remediate. [4]	In place • Maintain technology system • Maintain control processes • Protect confidential information via traditional mitigation (e.g., physical security; access controls; work-from-home rules; hardware/software encryption and filters; communications to Audit committee, etc.) • Identify most sensitive data and apply most robust security • Adopted internal best practices and applied enterprise-wide • Ensure security protocols applied to any new business models • Established executive position in charge of security with dedicated security team that socializes awareness of technology issues and protects technology infrastructure • Risk-based training on principles/rules to avoid literal-only interpretations and focus on areas at risk of potentially breaking rules • Quantifying risk exposures, which focuses management attention on items potentially impacting reputation • Prepared/enhanced contingent media communications plan • Transparency Post-event • If needed, hire additional resources
B	Pace and complexity of regulatory rules related to data privacy continue to increase, resulting in significant costs to maintain compliance.	In place • Meetings to plan/maintain compliance, and spending on resources and tools to comply
C	Pace and complexity of regulatory rules related to data privacy continue to increase, resulting in delayed projects and increased costs to improve controls and provide training to maintain compliance.	In place • Monitor evolution of rules • Lobby/educate regulators regarding reasonable standards that lean away from rules-based toward principle-based
D	Legal challenges by corporations or individuals slow the pace of privacy laws.	None specified [1]

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Appendix H: Risk Disclosure Practices

In the table below, the number in the columns corresponds to the percentage of participants reporting the item for the indicated stakeholder. The column headings correspond to the following stakeholders:

- Board: Item is reported to the full board of directors (for two participants, a parent company was treated as a board of directors for this reporting purpose and it was recorded here as such).
- Board Committee: Item is reported to a committee of the board of directors.
- Rating Agency: Item is reported to one or more rating agencies that assign it a credit rating.
- Regulator: Item is reported to one or more regulators.
- Shareholders/Owners: Item is reported to shareholders or owners.

In Section III ("What Information?"), when quantitative estimates were reported (choices d and e), this was assumed to pre-empt any additional qualitative information (choices a, b and c) and therefore the latter choices were omitted. In other words, the highest level of detail was recorded.

In Section V, there was one participant that reported two different frequencies for information disclosed to the board of directors, rating agencies and regulators. In these instances, a weight of 50 percent was applied to each frequency. These instances are each marked with an asterisk (*) in the table below.

Risk Disclosure Practices—Total	Board	Board Committee	Rating Agency	Regulator	Shareholders/ Owners
I. For Which Risks? (Select at most one of a-e for each stakeholder, plus any others that apply)					
(a) Key	60%	25%	50%	60%	40%
(b) Top-10, Top-15 or Top-20	20%	5%	20%	15%	5%
(c) Selected Risks		5%	10%	10%	
(d) Risks Needing Attention	5%	5%	5%	5%	
(e) Emerging Risks	10%	5%	10%	10%	
II. At What Level? (Select at most one for each stakeholder)					
(a) Risk Summary	5%	5%	10%	10%	5%
(b) Risk	45%	20%	50%	60%	40%
(c) Multiple Risk Scenarios for Each Risk	15%		10%		
(d) Credible-Worst-Case Scenario for Each Risk	5%		5%	5%	
(e) Largest-Impact Scenario for Each Risk	10%		5%	5%	
(f) Not as Separate Risk (Embedded in Other Risk Discussions)		5%		5%	

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Risk Disclosure Practices—Total	Board	Board Committee	Rating Agency	Regulator	Shareholders/ Owners
III. What Information? (Select all that apply)					
(a) Qualitative Description Only	10%	5%	20%	35%	30%
(b) Qualitative Likelihood Score (e.g., H/M/L or Colors)	35%	10%	25%	35%	
(c) Qualitative Severity Score (e.g., H/M/L or Colors)	35%	10%	30%	35%	5%
(d) Quantitative Estimate of Likelihood	20%	5%	15%	15%	
(e) Quantitative Estimate of Severity	30%	10%	20%	20%	
(f) Key Risk Indicators (KRIs)	15%	10%	5%	10%	
(g) Mitigation	25%	15%	30%	10%	10%
(h) Exposure Limit	10%	10%	10%	5%	
IV. If Applicable, Which Severity Metric(s)? (Select all that apply)					
(a) Surplus	10%	5%	10%	15%	
(b) Capital	35%	5%	35%	35%	
(c) Capital on Economic Basis	5%		5%	5%	
(d) Required Capital	15%	10%	5%	5%	
(e) Three Years of Earnings	5%				
(f) IFRS Annual Income	5%		5%	5%	
(g) Principle-Based Reserves	5%		5%		
(h) ROE	5%				
(i) Company Value	15%	5%	5%	5%	
(j) Various Financial Metrics	15%	10%	15%	20%	10%
V. With What Frequency? (Select at most one for each stakeholder)					
(a) Upon Request Only				10%	

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Risk Disclosure Practices—Total	Board	Board Committee	Rating Agency	Regulator	Shareholders/ Owners
(b) Every Two Years	2.5%*		2.5%*	2.5%*	
(c) Annually	30%	5%	40%	40%	25%
(d) At Least Annually	5%		22.5%*	17.5%*	
(e) Annually w/ Quarterly Updates	10%	10%	15%	5%	25%
(f) Twice Annually	5%				
(g) Quarterly	22.5%*	15%		5%	5%
(h) At Least Quarterly	5%			5%	

Risk Disclosure Practices—United States	Board	Board Committee	Rating Agency	Regulator	Shareholders/ Owners
I. For Which Risks? (Select at most one of a-e for each stakeholder, plus any others that apply)					
(a) Key	42%	17%	58%	50%	50%
(b) Top-10, Top-15 or Top-20	25%		25%	17%	8%
(c) Selected Risks			8%	17%	
(d) Risks Needing Attention	8%		8%	8%	
(e) Emerging Risks	8%		8%	8%	
II. At What Level? (Select at most one for each stakeholder)					
(a) Risk Summary	8%	8%	8%	8%	8%
(b) Risk	17%	8%	50%	58%	50%
(c) Multiple Risk Scenarios for Each Risk	25%		17%		
(d) Credible-Worst-Case Scenario for Each Risk	8%		8%	8%	
(e) Largest-Impact Scenario for Each Risk	17%		8%	8%	

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Risk Disclosure Practices—United States	Board	Board Committee	Rating Agency	Regulator	Shareholders/ Owners
(f) Not as Separate Risk (Embedded in Other Risk Discussions)					
III. What Information? (Select all that apply)					
(a) Qualitative Description Only			17%	25%	42%
(b) Qualitative Likelihood Score (e.g., H/M/L or Colors)	17%		25%	17%	
(c) Qualitative Severity Score (e.g., H/M/L or Colors)	17%		25%	17%	8%
(d) Quantitative Estimate of Likelihood	33%		25%	25%	
(e) Quantitative Estimate of Severity	33%		25%	25%	
(f) Key Risk Indicators (KRIs)	8%	8%			
(g) Mitigation	33%	8%	50%	8%	8%
(h) Exposure Limit	8%		8%		
IV. If Applicable, Which Severity Metric(s)? (Select all that apply)					
(a) Surplus	8%		8%	17%	
(b) Capital	33%		42%	33%	
(c) Capital on Economic Basis	8%		8%	8%	
(d) Required Capital	8%				
(e) Three Years of Earnings	8%				
(f) IFRS Annual Income	8%		8%	8%	
(g) Principle-Based Reserves	8%		8%		
(h) ROE					
(i) Company Value	17%		8%	8%	
(j) Various Financial Metrics	8%		8%	8%	8%
V. With What Frequency? (Select at most one for each stakeholder)					

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Risk Disclosure Practices—United States	**Board**	**Board Committee**	**Rating Agency**	**Regulator**	**Shareholders/ Owners**
(a) Upon Request Only				17%	
(b) Every Two Years					
(c) Annually	17%		50%	50%	25%
(d) At Least Annually	8%		25%	8%	
(e) Annually w/ Quarterly Updates	8%		17%		42%
(f) Twice Annually	8%				
(g) Quarterly	25%	17%			
(h) At Least Quarterly	8%			8%	

Risk Disclosure Practices—Canada	**Board**	**Board Committee**	**Rating Agency**	**Regulator**	**Shareholders/ Owners**
I. For Which Risks? (Select at most one of a-e for each stakeholder, plus any others that apply)					
(a) Key	75%	38%	38%	75%	25%
(b) Top-10, Top-15 or Top-20	13%	13%	13%	13%	
(c) Selected Risks		13%	13%		
(d) Risks Needing Attention		13%			
(e) Emerging Risks	6%*	13%	6%*	6%*	
II. At What Level? (Select at most one for each stakeholder)					
(a) Risk Summary			13%	13%	
(b) Risk	88%	38%	50%	63%	25%
(c) Multiple Risk Scenarios for Each Risk					

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Risk Disclosure Practices—Canada	Board	Board Committee	Rating Agency	Regulator	Shareholders/ Owners
(d) Credible-Worst-Case Scenario for Each Risk					
(e) Largest-Impact Scenario for Each Risk					
(f) Not as Separate Risk (Embedded in Other Risk Discussions)		13%		13%	
III. What Information? (Select all that apply)					
(a) Qualitative Description Only	13%	13%	19%*	31%*	13%
(b) Qualitative Likelihood Score (e.g., H/M/L or Colors)	56%*	25%	19%*	56%*	
(c) Qualitative Severity Score (e.g., H/M/L or Colors)	56%*	25%	31%*	56%*	
(d) Quantitative Estimate of Likelihood		13%			
(e) Quantitative Estimate of Severity	25%	13%	13%	13%	
(f) Key Risk Indicators (KRIs)	25%	13%	13%	25%	
(g) Mitigation	13%	25%		13%	13%
(h) Exposure Limit	13%	25%	13%	13%	
IV. If Applicable, Which Severity Metric(s)? (Select all that apply)					
(a) Surplus	13%	13%	13%	13%	
(b) Capital	31%*	13%	19%*	31%*	
(c) Capital on Economic Basis					
(d) Required Capital	25%	25%	13%	13%	
(e) Three Years of Earnings					
(f) IFRS Annual Income					
(g) Principle-Based Reserves					
(h) ROE	13%				
(i) Company Value	13%	13%			

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.

Risk Disclosure Practices—Canada	Board	Board Committee	Rating Agency	Regulator	Shareholders/ Owners
(j) Various Financial Metrics	25%	25%	25%	38%	13%
V. With What Frequency? (Select at most one for each stakeholder)					
(a) Upon Request Only					
(b) Every Two Years	6%*		6%*	6%*	
(c) Annually	50%	13%	25%	25%	25%
(d) At Least Annually			19%*	31%*	
(e) Annually w/ Quarterly Updates	13%	25%	13%	13%	
(f) Twice Annually					
(g) Quarterly	19%*	13%		13%	13%
(h) At Least Quarterly					

© 2015 Casualty Actuarial Society, Canadian Institute of Actuaries, Society of Actuaries. All Rights Reserved.