

U.S. CHAMBER OF COMMERCE:  
**INSURANCE CAPITAL  
STANDARDS AND THE  
AGGREGATION METHOD**

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**SUMMER 2019**



CENTER FOR CAPITAL MARKETS  
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1. This report was prepared by the U.S. Chamber of Commerce. Ernst & Young LLP (EY) assisted with market research and provided objective data analysis in connection with this report.



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# EXECUTIVE SUMMARY

As we have discussed in previous work,<sup>2</sup> insurance firms play an important role in economies— both to help customers manage risk and to provide a source of funds for needed long-term investments. In order to safeguard this function, insurance capital requirements are one critical component of regulatory standards worldwide. Robust capital standards, coupled with other regulatory tools, make it more likely that insurers will have the funds needed to pay claims to policyholders. Reasonable standards make it more likely they will provide funds for needed long-term investments.

In recent years, standard-setting bodies have worked to develop standards that ensure cross-border solvency and stability for insurers with operations across regulatory regimes. In particular, the Insurance Capital Standard (ICS) currently under development by the International Association of Insurance Supervisors (IAIS) is an effort to define comparable standards and determine solvency levels for internationally active insurance groups (IAIGs). This paper will discuss the key considerations driving an international standard, the dynamics between local market characteristics and the insurance products policyholders use to manage risk, and potential risks posed by the current construct of the ICS to robust, competitive insurance markets such as that of the U.S.

We will also discuss one of the chief proposed methods of estimating insurance group capital, the aggregation method (AM), being developed by the U.S., which the IAIS has agreed to consider and collect relevant data to aid development. The AM method differs from other approaches being proposed on several key dimensions, but it also has some similarities. These differences also have potential implications on insurers' business models and social impact across the many disparate markets within which these insurers operate.

Fundamentally, the AM differs from the ICS in that it is an aggregated approach that relies on existing jurisdictional capital requirement calculations and not, as does the ICS, on the creation of a single consolidated group capital requirement. The AM operates by aggregating jurisdictional regulatory required capital and available capital to a single measure by scaling key metrics to a uniform basis. In this way, the AM is able to adapt to the many different models of product availability and diverse approaches to long-term risk management that are currently in use across international markets. For this reason, the AM affords a greater measure of transparency into location and function of capital within the group than a consolidated approach. While the lack of a single standardized valuation methodology may make the aggregation method less numerically comparable across jurisdictions, that potential drawback is mitigated by its use of existing time-tested capital frameworks. Additionally, the use of local capital frameworks ensures that the needs of a particular jurisdiction are recognized. Any prudent standard that aims to identify solvency standards across jurisdictions will need to weigh the importance of a single, standardized calculation with the market flexibility and transparency provided by the AM.

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2. "The Role of Insurance Investments in the U.S. Economy," U.S. Chamber of Commerce, 2019



The flexibility of the AM is particularly important given the role of insurance in the economy overall. Capital standards should allow companies to offer products that serve a social good within their individual markets. For example, pension plans and government benefits differ across markets, and insurance regulatory frameworks adapt to these varying underlying differences in the life insurance market. There are also disparities in non-life (property and casualty) products across global jurisdictions. Any appropriate solvency method will need to consider the importance of properly identifying and quantifying the risks of products across jurisdictions with dissimilar underlying risks.

The following paper is organized into three major topic areas. First, we will introduce some of the important features of the insurance business model and implications of capital requirements. Then, we will discuss the market and regulatory context of insurance capital requirements and compare the aggregation method to the key features of other approaches (e.g. the ICS). Finally, we will discuss the implications of the aggregation method approach in the context of the wide range of roles insurance plays across international markets and the importance of insurance firms' investments to underlying capital markets.<sup>3</sup>

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3. Any focus of this report on U.S. insurers and the U.S. market does not preclude extension of findings to non-U.S. insurers and the markets they serve provided similar conditions exist.

# INTRODUCTION

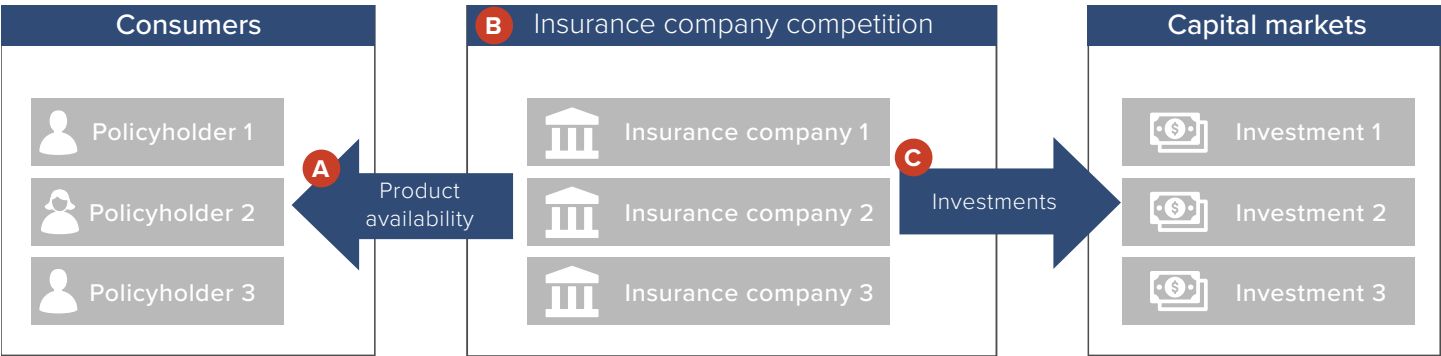
The insurance industry plays a number of critical roles in economies worldwide. First, insurance products allow policyholders to better manage risks. This can vary from short-term property and casualty (P&C) products that protect against liability and catastrophe risks, to longer-term life and annuity products that ensure a stable income through old age and household mortality. Second, the insurance industry provides a key source of investments in the real economy. For example, in the U.S., insurers hold more than 20% of all corporate bonds, and their municipal bond purchases could build about 1,000 elementary schools every year.<sup>4</sup> Insurance is a critical component of the U.S.—and global—system of risk management and stability for both policyholders and capital markets.

In order to fulfill these important societal objectives, effective regulatory frameworks are critical to the insurance business model. Effective regulatory frameworks ensure policyholder protection while creating appropriate conditions for insurers to provide a robust range of products; they also serve as a source of capital for local market needs. With respect to policyholder protection, insurers are responsible for claims obligations that can be highly volatile (in the case of many P&C products) or extremely long-dated (in the case of many life products). Regulatory guidance is needed to provide policyholders confidence that insurers will be able to fulfill their claim obligations, and a clear and objective regulatory system allows for effective competition between insurers to best serve customer needs. Appropriate regulation also promotes product innovation and availability and supports insurers’ role as a source of capital.

The key components of the insurance market relevant to regulators are illustrated in Figure 1.

FIGURE 1

## Illustration of the roles of an insurance market



Source: EY Analysis

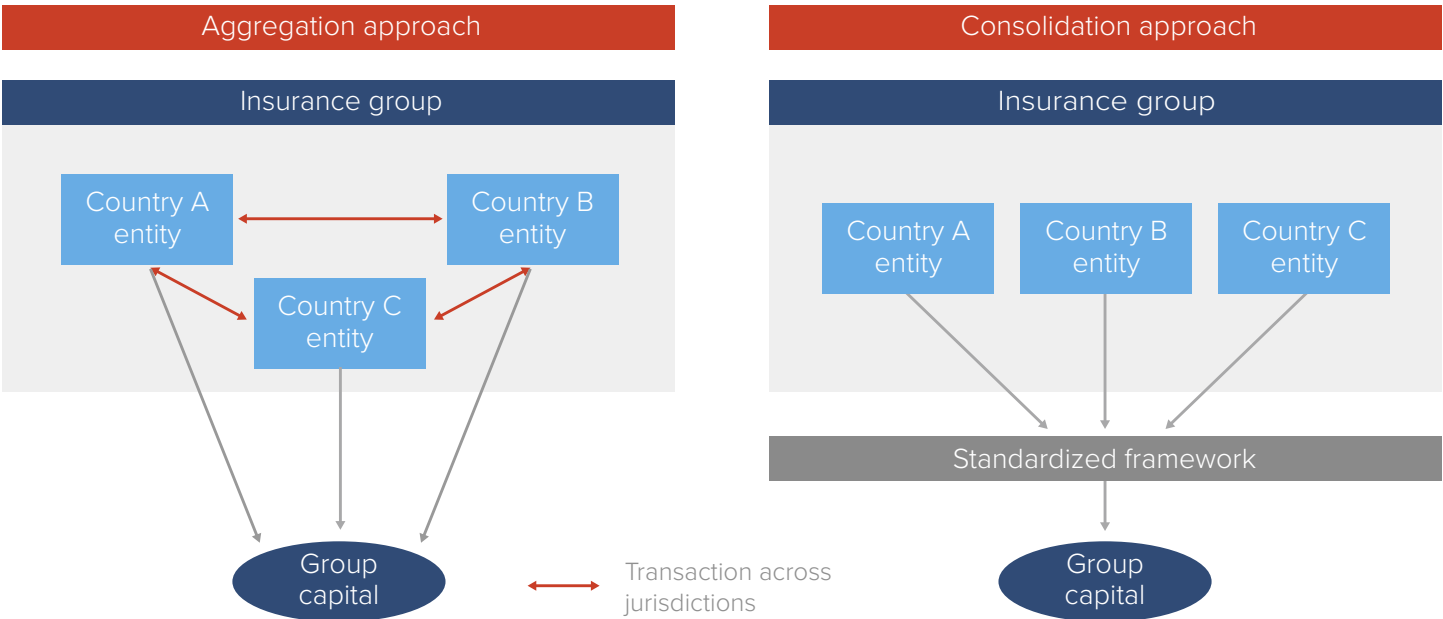
4. “The Role of Insurance Investments in the U.S. Economy,” U.S. Chamber of Commerce, 2019.

Insurance markets operate by meeting consumer demand for risk management products (A) through efficient insurance company competition, and (B) financing these future liabilities through capital markets (C). There is a close connection between these underlying functions—with unique risks, policyholder objectives, and regulatory objectives—and the wide range of regulatory structures between markets.

In the wake of the global financial crisis, there has been interest in developing standards to define a “common language” that can translate different regulatory requirements between the jurisdictions that govern insurers’ legal entities. The current standards under development can be broadly classified into two different approaches: an “aggregated” approach and a “consolidated” approach (Figure 2). An aggregated model is represented by the U.S.’s aggregation method currently under development through the National Association of Insurance Commissioner’s (NAIC) Group Capital Calculation (GCC) and the Federal Reserve Board’s Building Blocks Approach (BBA).<sup>5</sup> In this framework, a method for translating between regulatory approaches allows global insurers to benchmark their capital positions internationally.

FIGURE 2

Comparison of aggregated and consolidated approach



Source: NAIC; IAIS

5. As the group-wide supervisor for U.S. insurance savings and loan holding companies, the Federal Reserve Board’s approach may be described as an aggregated approach to a consolidated capital requirement. The Board’s proposal, published September 6, 2019, states: “The proposed BBA is an approach to a consolidated capital requirement that considers all material risks on an enterprise-wide basis by aggregating the capital positions of companies under an insurance holding company after expressing them in terms of a common capital framework.”

Source: Board of Governors of the Federal Reserve System, “Regulatory Capital Rules: Risk-Based Capital Requirements for Depository Institution Holding Companies Significantly Engaged in Insurance Activities,” <https://www.federalreserve.gov/newsevents/pressreleases/bcreg20190906a.htm>

Alternatively, the IAIS is in the process of developing an ICS standard that follows a “consolidated” approach. This type of approach develops a single, adjusted market-consistent methodology to be applied across all of a single insurance group’s operations. This results in a consolidated number intended to represent the capital position of the insurer across all of its global operations.

The choice of the relevant approach could have a significant impact on the key functions of insurance markets, including in the U.S. While the U.S. has declined to implement a market-adjusted approach to calculate insurer capital adequacy, if such an approach were to become the “de-facto” insurance standard its effects could impact the U.S. market as set out in the sidebar on page 9. More broadly, adoption of an ICS could impact insurance markets in at least three ways:

### **Product availability**

Product offerings reflect policyholders’ varying needs, particularly in relation to complementary social risk management tools (e.g., governments/social safety nets). Certain products, particularly long-duration annuity products, which are critical in markets with fewer government-supported longevity management tools, are sensitive to valuation methods given the long horizon for the associated insurance liabilities. Market-based valuation methods such as those in the reference ICS (i.e., the baseline approach for the ICS currently proposed by the IAIS) tend to introduce more volatility and result in unfavorable solvency calculations in times of economic distress, which can diminish the ability of insurers to offer a wide range of products.

### **Insurance competition**

The current ICS framework is intended to apply only to larger, multinational insurers. However, these insurers are comprised of many individual entities that operate on a local, jurisdictional level. Adoption of the ICS could drive additional standards and restrictions that apply to only some competitors in a market (i.e., those part of larger, global groups) and thus influence their ability to compete with smaller, regional competitors not bound by ICS standards. Further, the adoption of the ICS as a Prescribed Capital Requirement (PCR), a solvency control level above which supervisors do not intervene on capital adequacy,<sup>6</sup> could cause certain IAIGs to need to raise additional, excess capital that may not be required of domestic competitors. Beyond these competitive impacts, requirements for additional capital due to international requirements present unique challenges in some markets that may not be present in others.

### **Impacts on capital markets**

Insurers make up a sizeable share of the capital markets, particularly within fixed-income and longer-term investments. They also have a unique ability to provide liquidity over longer investment time horizons. Increasing the volatility of the liabilities that insurers hold could negatively impact insurers’ ability to support longer-duration, less-volatile investments.

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6. IAIS, Risk-Based Global Insurance Capital Standard Version 2.0 Public Consultation, 7/31/2018.

## IMPACT OF STANDARDS

Although standards are typically developed with an application and target populace in mind, their impacts can sometimes go beyond the original purpose. In the insurance industry specifically, reporting requirements for standard-setting or regulatory bodies may be analyzed by other entities, such as ratings agencies. Ratings agencies are independent organizations that provide opinions on the financial strength of insurance companies (among other entities). Each agency has its own standards and practices.<sup>7</sup> Thus, agencies can rely on “standard” pieces of information—regardless if these are used by relevant regulators in practice. These ratings in turn may further influence insurance market dynamics such as how policyholders choose among insurers, and how insurers invest and allocate their capital.

Although the ICS may apply only to a subset of insurance groups (i.e., those that are IAIGs), the market more broadly may nonetheless hold other insurance groups to the same standards. This could effectively make the requirements for IAIGs de facto apply to other insurance groups and impact the insurance marketplace in ways not within the original intended purpose. Using the ICS as a de facto standard for credit rating agencies could result in negative impacts on the U.S. insurance industry even if the standard is not incorporated into U.S. frameworks.

Capital standards that could result in the need to raise capital at the jurisdictional level are core business questions for insurers, given local business practices and regulations. For example, in the U.S., insurers with mutual structures have narrower strategies for raising capital.<sup>8</sup> One such way is through increasing rates. However, rates are typically regulated in each state and cannot necessarily be increased easily to match internationally prescribed standards.<sup>9</sup> As such, decisions about around capital standards are critical to the U.S. insurance industry and could have wide-ranging impacts.

“[T]he adoption of a market adjusted valuation (MAV) approach would result in significant incremental costs. The MAV approach is different than U.S. Generally Accepted Accounting Principles (GAAP) and significantly different than state-based statutory accounting practices. As a result, there would be considerable effort and burdens ... to implement a MAV basis of reporting (such as system changes, process changes, staff training, etc.).”<sup>10</sup>

—National Association of Insurance Commissioners (NAIC)

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7. Insurance Information Institute, “How to Assess the Financial Strength of an Insurance Company,” <https://www.iii.org/article/how-to-assess-the-financial-strength-of-an-insurance-company>

8. NAMIC, “Group Capital and U.S. Insurance Regulation,” December 2018.

9. NAMIC, “Group Capital and U.S. Insurance Regulation,” December 2018.

10. NAIC, Approved Comments to ICS Version 2.0, 10/25/2018.



# MARKET AND REGULATORY CONTEXT

## ROLE OF INSURANCE PRODUCTS ACROSS MARKETS

Developing an international standard that is consistent with local market dynamics is particularly important due to the pivotal role insurance plays in society. Insurers provide consumers and businesses the ability to pool and share risk, and insurers benefit capital markets through their investments in long-duration, less-liquid investments. While insurers are important across all markets, underlying differences across markets create a different role for insurance in each. These differing roles impact the capital methodologies best suited for each individual market.

To understand how the role of life insurance differs, it is important to discuss the complementary systems in place to help consumers manage risk and generate wealth over time. These systems are illustrated in Figure 3 and include the following:

### **Employer-sponsored pension funds**

Employer-sponsored retirement programs intended to provide employees with long-term benefits following employment (e.g., defined-benefit pension plans, matched 401(k) accounts)

### **Government-sponsored old-age and retirement benefits**

Government-sponsored programs intended to provide minimum levels of income in old age (e.g., social security)

### **Life insurance and retirement products**

Longer-term insurance products designed to mitigate mortality, longevity, and morbidity risk as households age (e.g., life insurance, annuities)

### **Other retirement savings products**

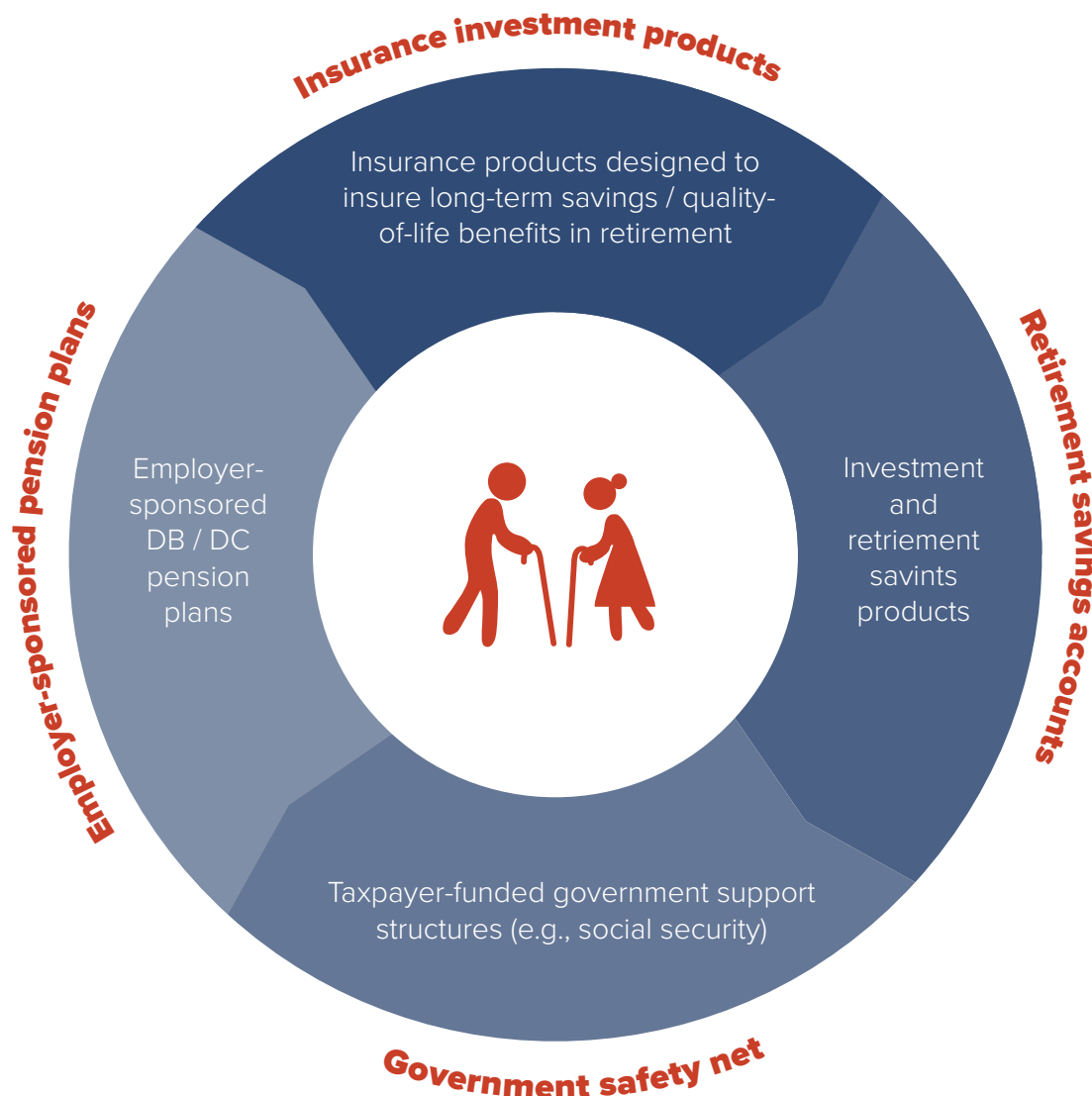
Tax-advantaged savings products and other structured financial investment vehicles available to consumers (e.g., IRAs)

Each of these longer-term savings and investment methods complement one another. For example, markets with a more developed government safety net or a higher reliance on employer-sponsored pension plans also tend to provide insurance products that are oriented to mortality risk instead of longer-term income protection.

In practice, local markets vary significantly in their reliance on each of these different sources of long-term income risk management. For example, public pension spending as a percentage of GDP is over 15% for countries like Greece or Italy compared to 2%-3% for countries like Mexico or Chile. EU countries in general have higher levels of public pension spending relative to the U.S. (Figure 4). There is also significant variation across countries in both their reliance on private pensions (Figure 5) and, even within employer-sponsored pensions, their reliance on defined-benefit vs. defined-contribution plan structures (Figure 6).

FIGURE 3

## Types of long-term income protection



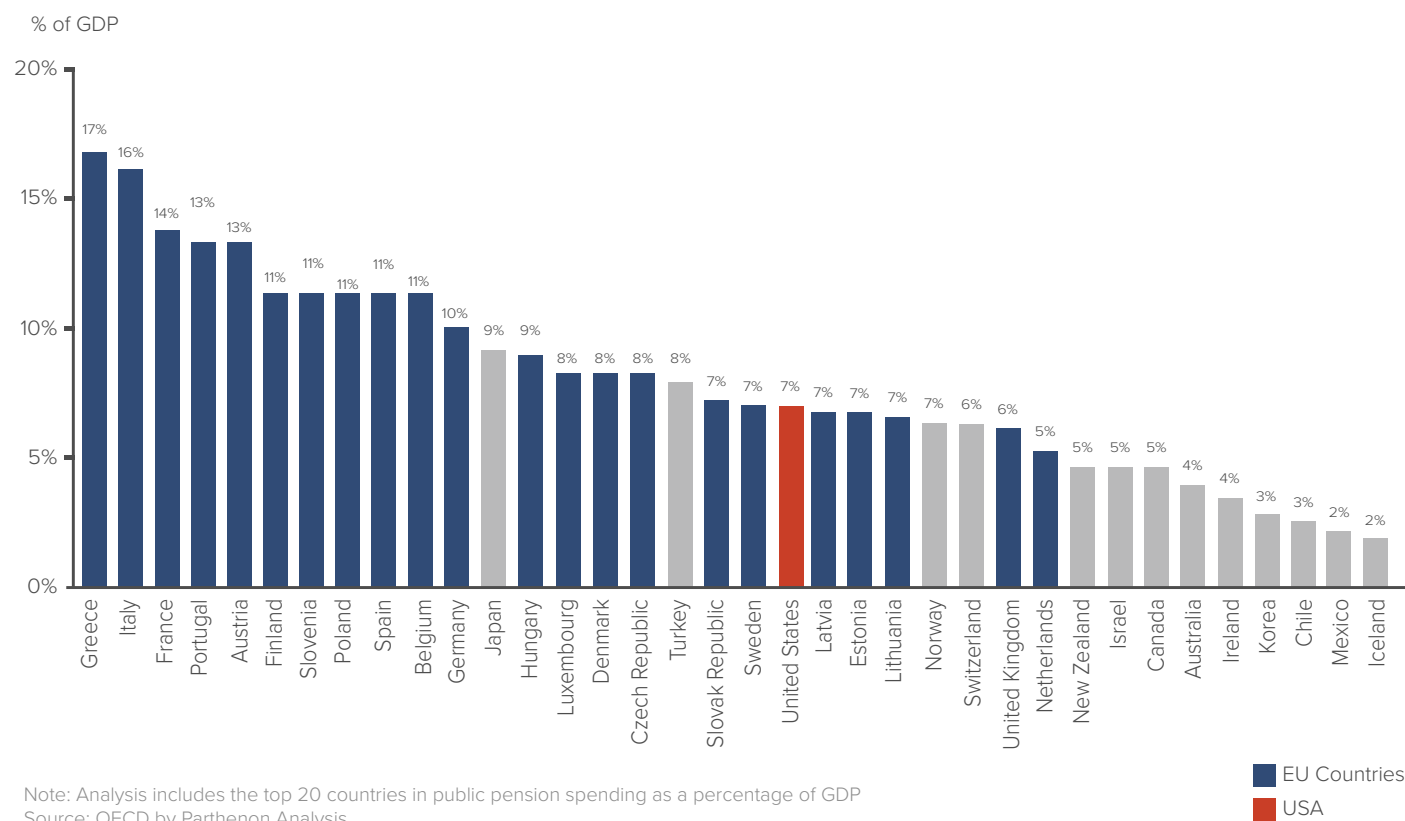
These dynamics are particularly relevant when considering the ongoing trends in long-term retirement and longevity planning outside of insurance. For example, old-age benefits are increasingly under pressure due to an aging workforce and an increase in the number of beneficiaries. The ratio of beneficiaries to covered workers as part of Social Security continues to decline in the U.S. (Figure 7).

Even beyond the declining financial position of government-sponsored programs, households continue to under-save relative to their retirement needs (Figure 8), increasing the need for reasonably priced, widely available investment-oriented retirement products that can earn returns to help supplement income levels. This dynamic is also present worldwide. Between 2010 and 2016, the United Nations documented 169 government announcements of pension reform contraction in countries worldwide, such as increasing retirement age requirements, reducing benefits, or introducing taxes on benefits.<sup>11</sup> The global population is aging for all regions, as fewer working-age people exist to support the elderly (Figure 9).

This trend could also accelerate if the age distribution of emerging economies moves toward that of mature markets (Figure 10). Securing private methods to insure risk is one way to manage these increasing stressors on existing systems of retirement and old-age benefits. Regulators and policymakers will need to ensure the continued availability of these private solutions to risk management in order to respond to these trends.

FIGURE 4

### Public pension spending as a percentage of GDP by The Organisation for Economic Co-operation and Development (OECD) country (2017)



11. International Labour Organization, "World Social Protection Report, 2017-2019," 2019.

FIGURE 5

## Private pension spending as a percentage of GDP by OECD country (2017)

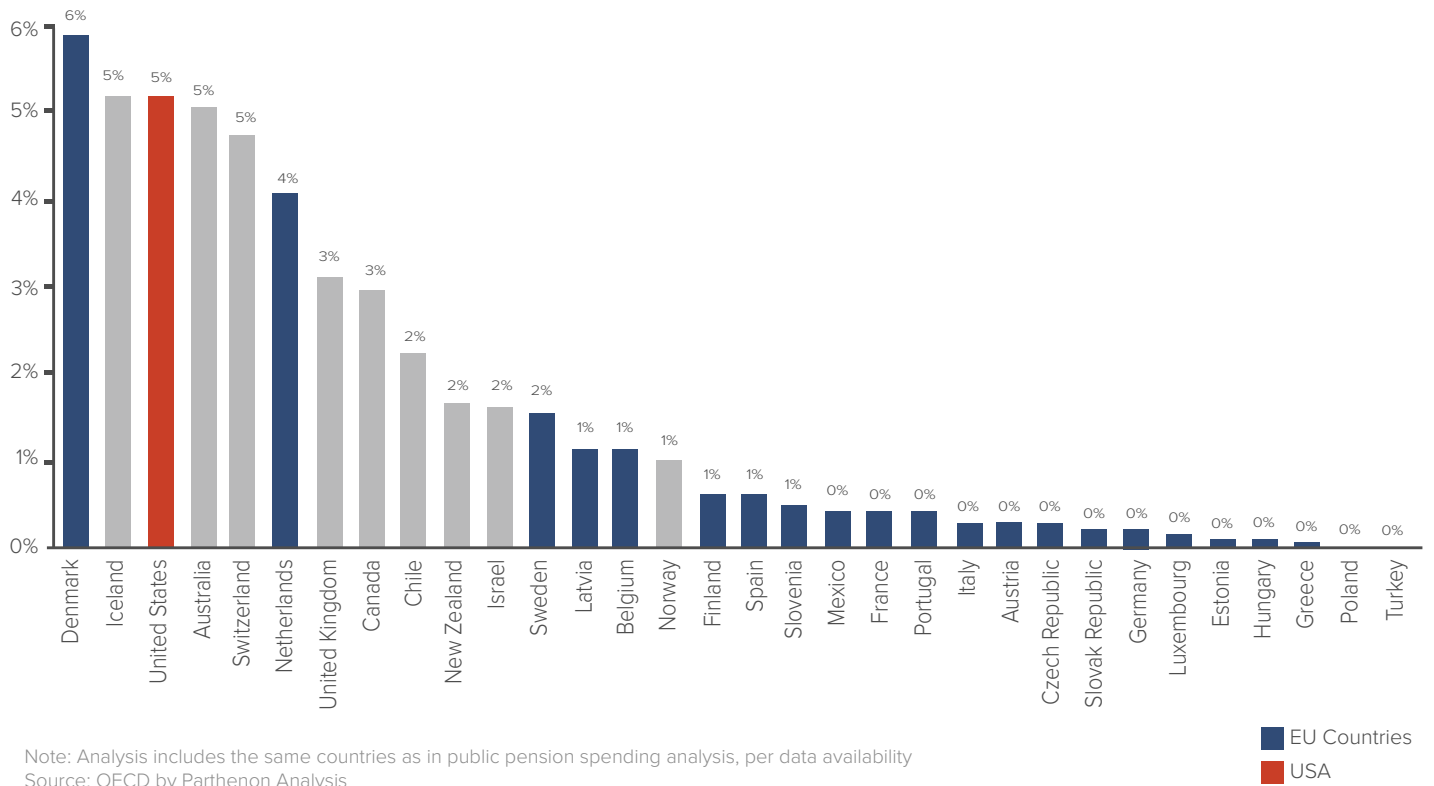


FIGURE 6

## Pension plan assets by plan type; U.S., Japan, and EU countries (2014)

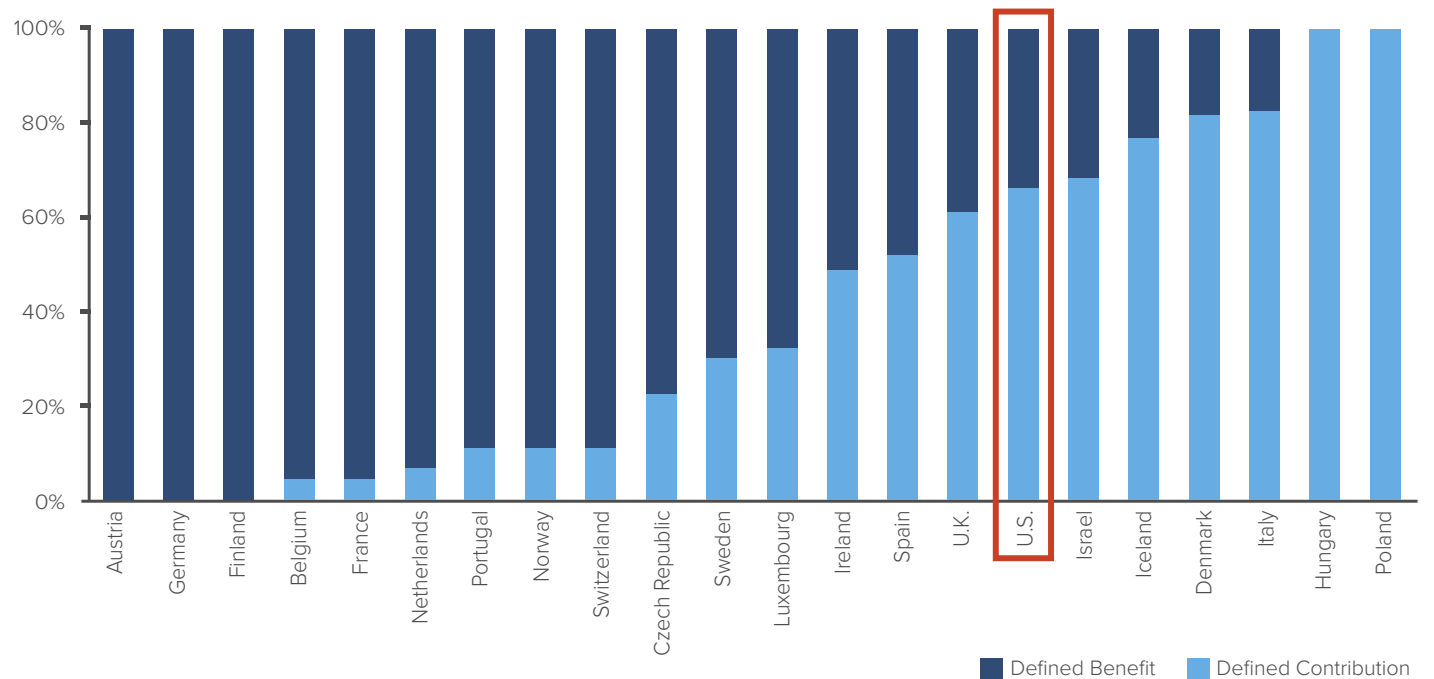
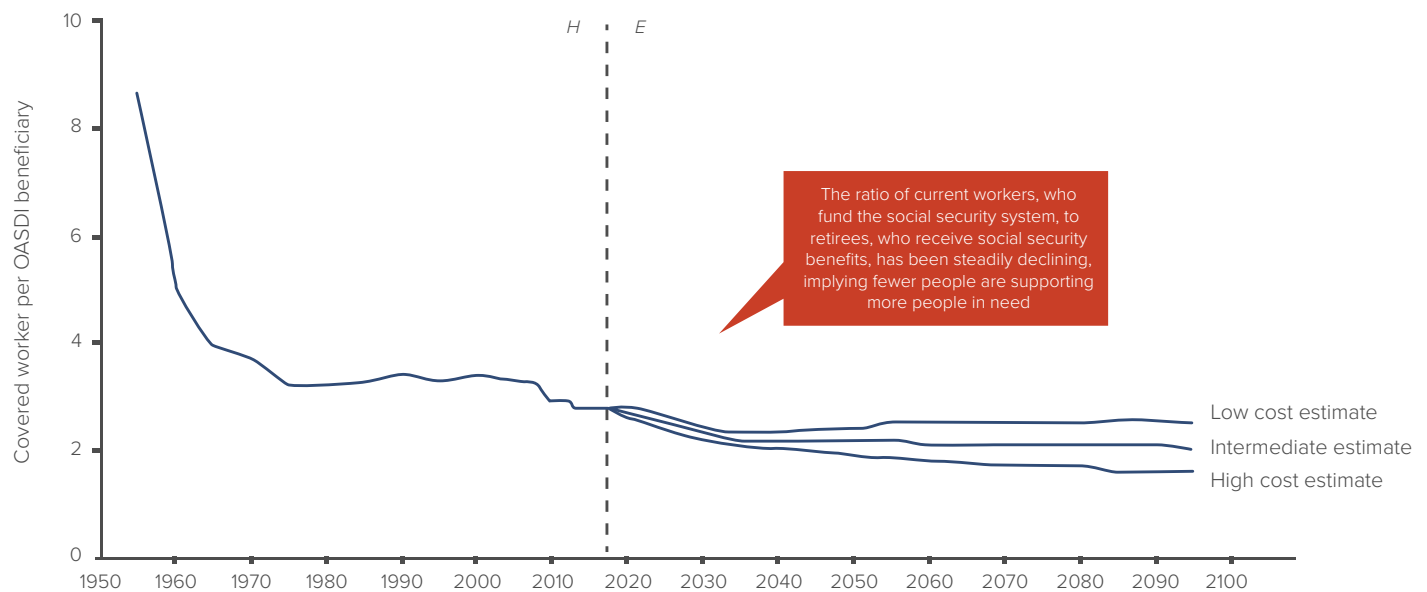


FIGURE 7

## Historical and projected covered workers per OASDI beneficiary (1940-2100E)



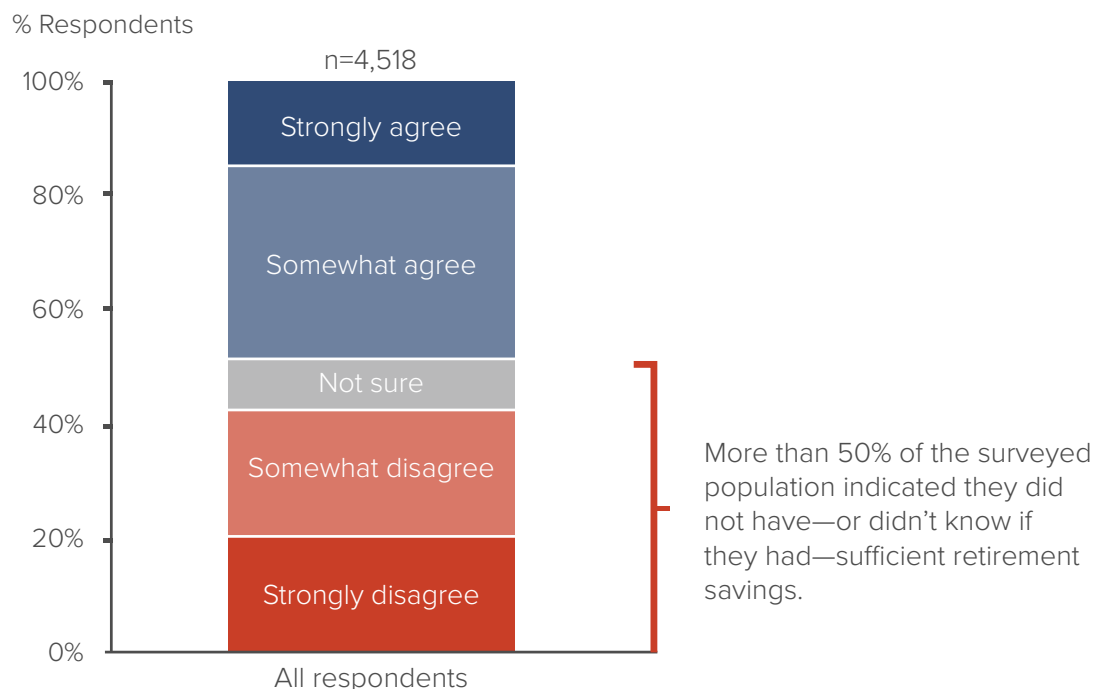
Note: Old-Age, Survivors, and Disability Insurance Program (OASDI), the official name of social security in the U.S., is a comprehensive federal benefits program that provides benefits to retirees and disabled people, and to their spouses, children, and survivors

Source: Federal board of Trustees of the Federal Old-Age and Survivors insurance and Federal Disability Insurance Trust Fund, EY-Parthenon Analysis

FIGURE 8

## American workers' perception of retirement savings

Q: How much do you agree or disagree that you are currently building a large enough retirement nest egg?



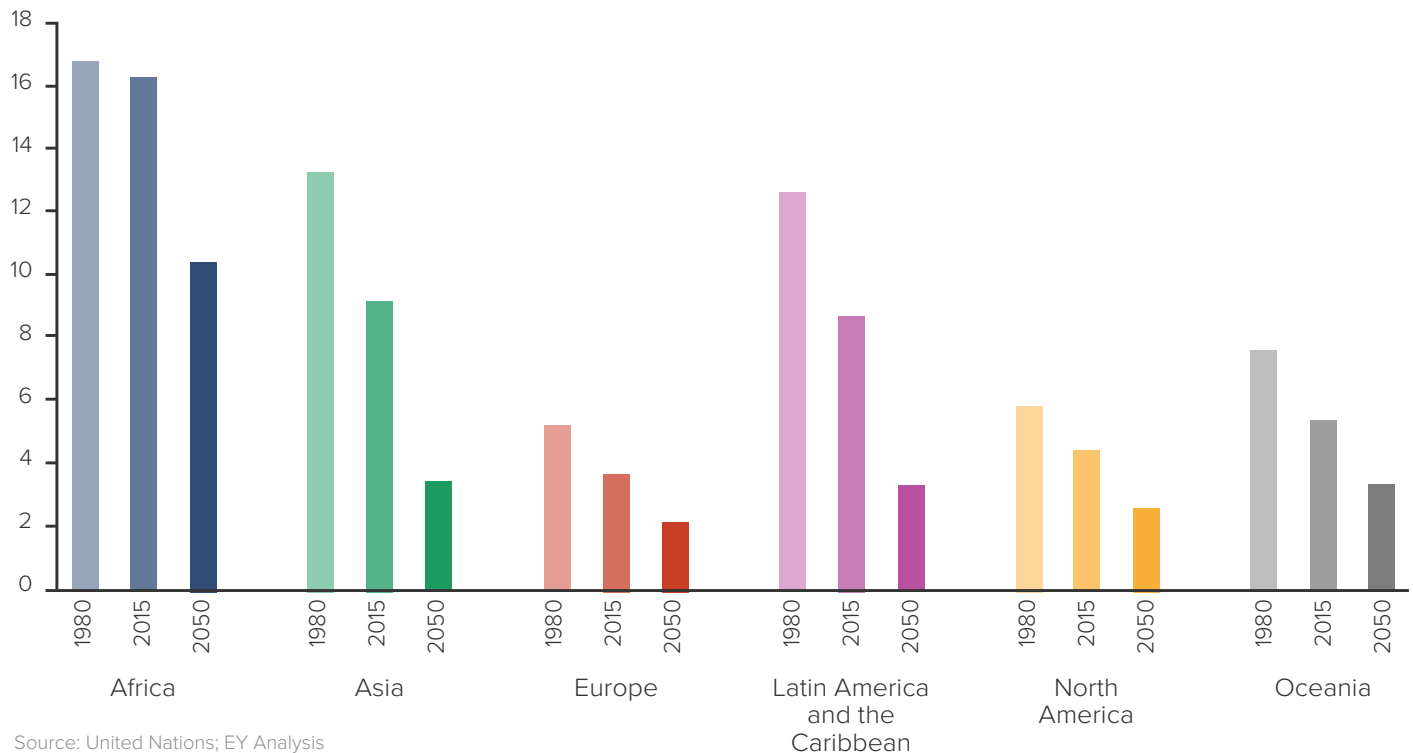
Methodology: a 25-min, online survey conducted among a nationally representative sample of 4,550 U.S. workers who are above 19 years old and working full time/part time in a for-profit company employing 10 or more people

Source: 16th Annual Transamerica Retirement Survey of Workers. Transamerica Center for Retirement Studies: EY-Parthenon Analysis



FIGURE 9

## Ratio of population aged 15-64 to population aged 65+ in 1980, 2015, and 2050 (forecast) by region



Local markets also differ in risk profiles and policyholder risk management needs. The U.S. provides an illustrative example. Within the property and casualty (P&C) insurance market, there are significant differences at the state level in the degree to which policyholders are exposed to disparate risks. For example, the exposure to environmental catastrophic perils is significantly different across regions in the U.S. (see Figures 11 and 12). P&C insurance also assists policyholders in protecting family assets (such as cars, homes, and other valuables) and provides businesses with protection against catastrophic outlays due to liability claims or property accidents.

The underlying demographics of each state are also highly variable, which can impact policyholder demand for longer-duration savings and longevity products such as life insurance and annuities. For example, different states have markedly different aging populations, as shown in Figure 13. Similar dynamics can be seen internationally, with significant variation in underlying risk profiles for long-term insurance (Figure 14).

These differences across insurance markets create variation in how customers use insurance. Most notably, variable annuities and other investment-focused products make up a larger portion of markets with a lower reliance on complementary government- and employer-provided retirement sources. For example, annuities and other unit-linked insurance products are significantly more common in the Americas than in other regions (Figure 15). In the P&C sector there are marked differences across regions. Liability coverage, for instance, is more extensive in the U.S. than in the EU. Aviation losses make up a higher portion of total losses in France than in Germany (Figure 16).

FIGURE 10

Age distribution of developed and developing economies (2011)

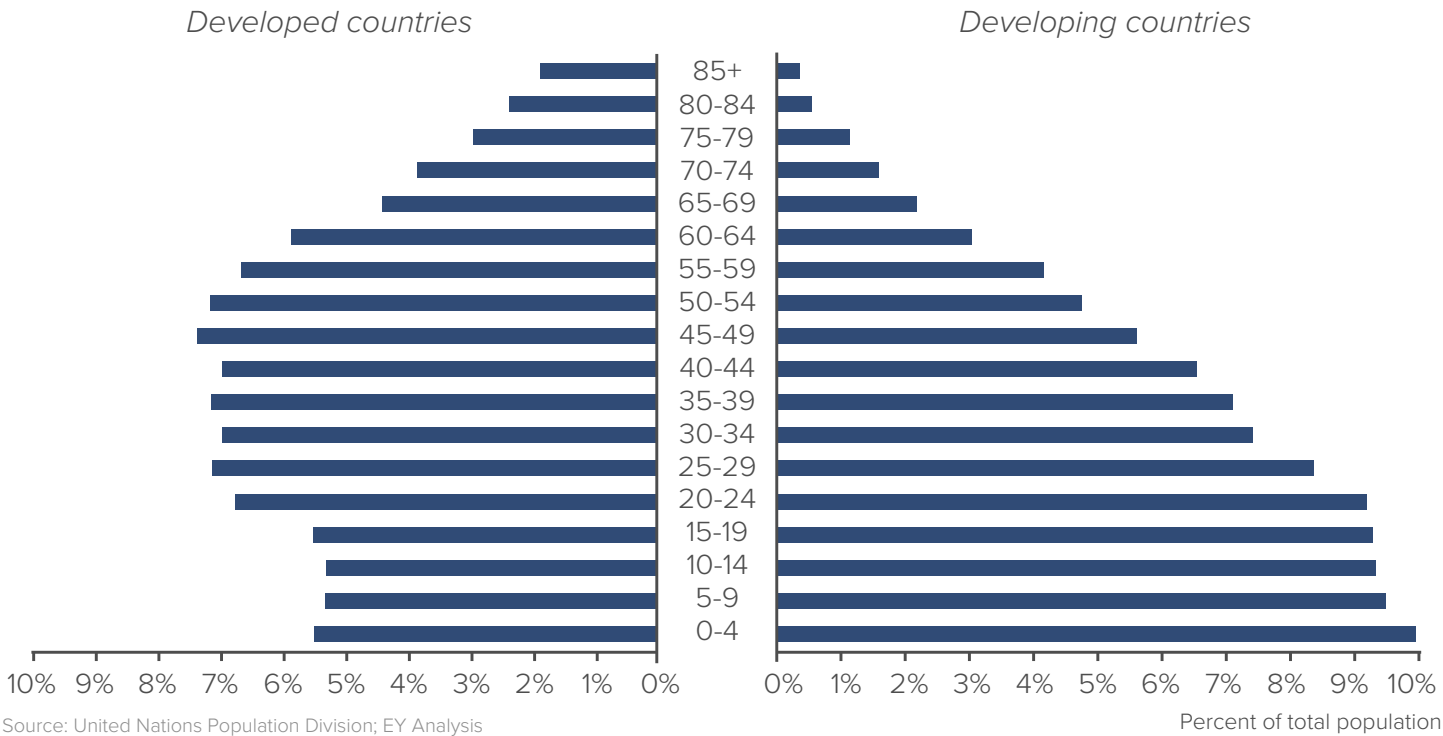
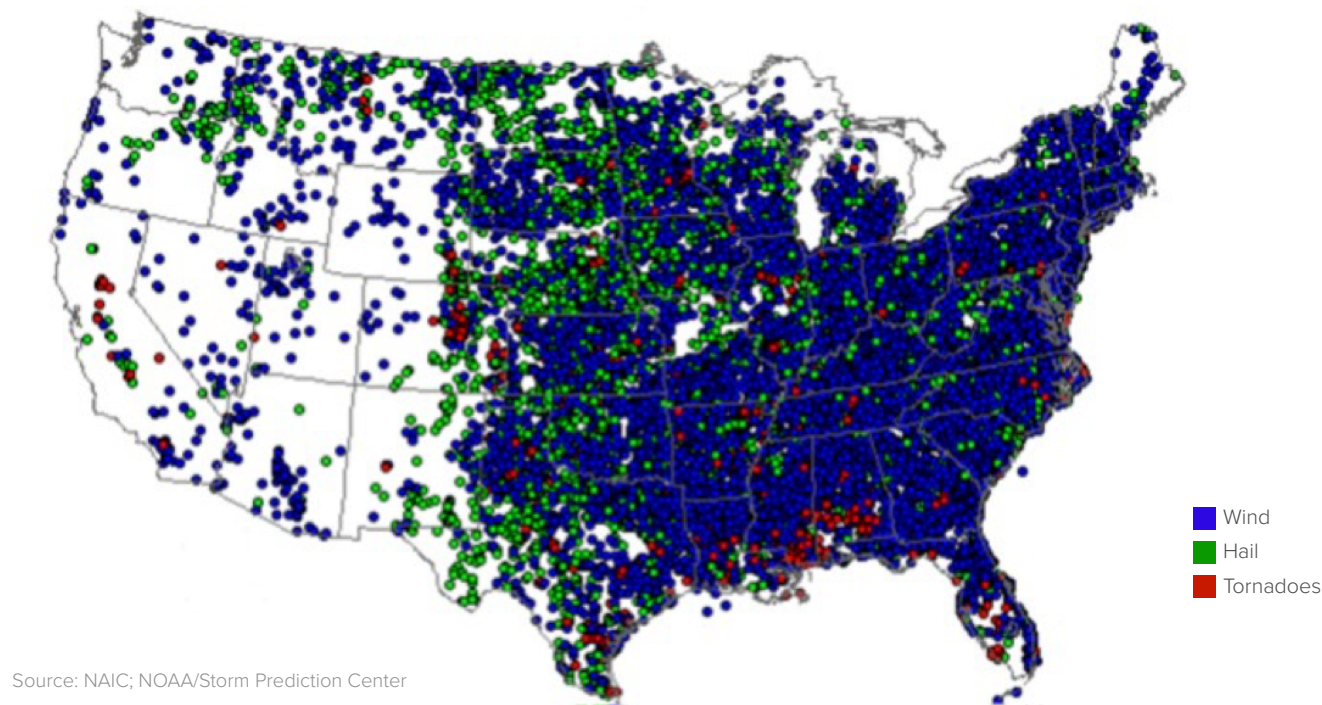


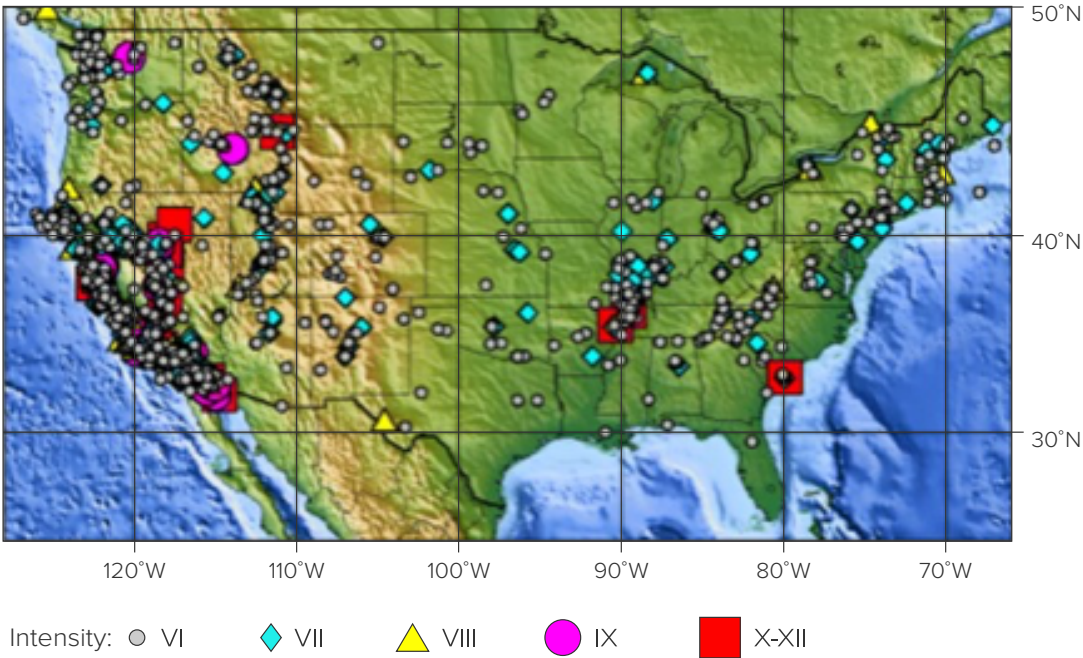
FIGURE 11

Catastrophic perils in different regions in the U.S. (2012)

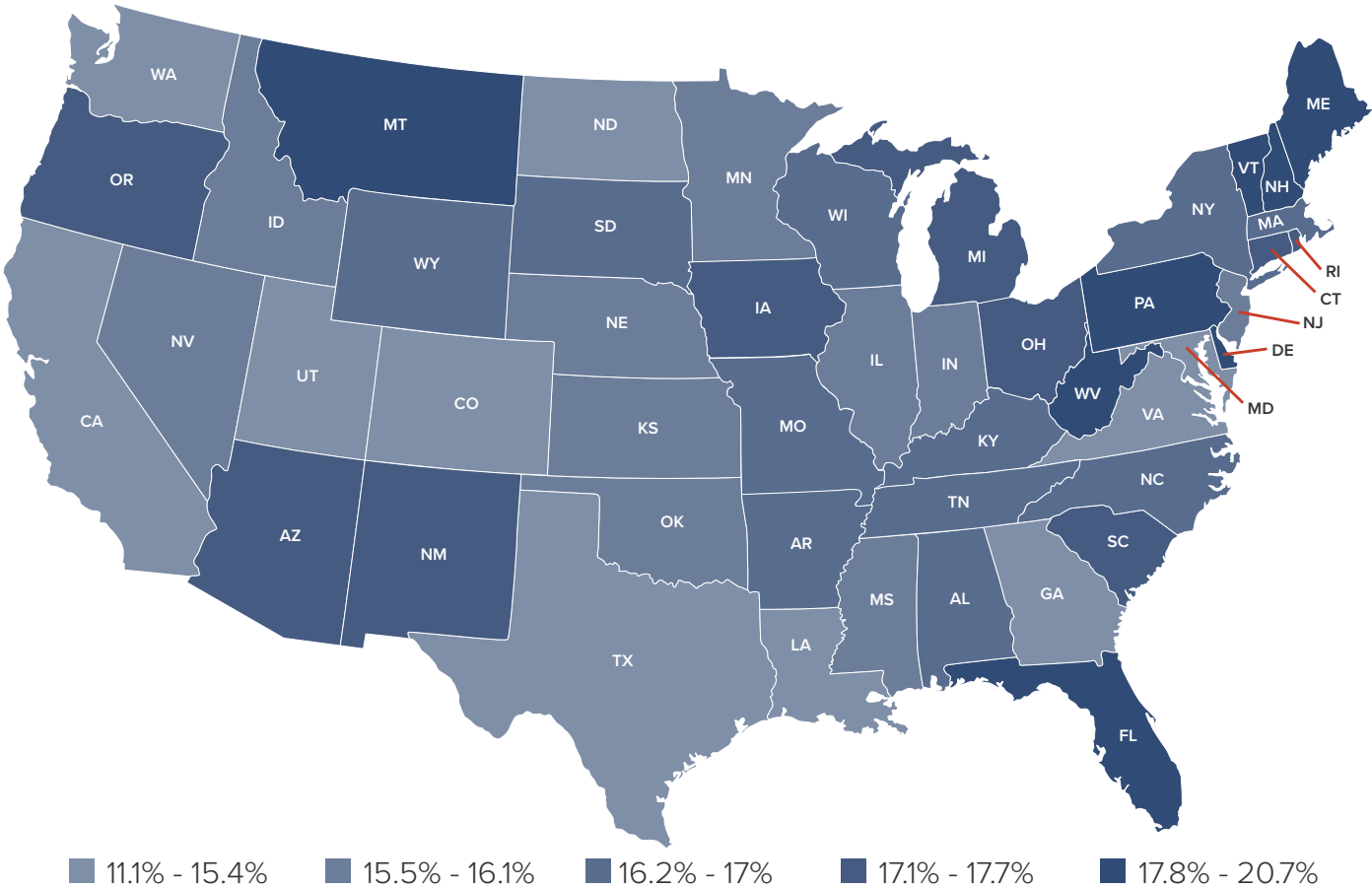


**FIGURE 12**  
**U.S. Earthquakes**  
**causing damage**  
**(1750-1996)**

Source: NAIC; USGS National Earthquake Information Center; Seismicity of the United States; Preliminary Determination of Epicenters



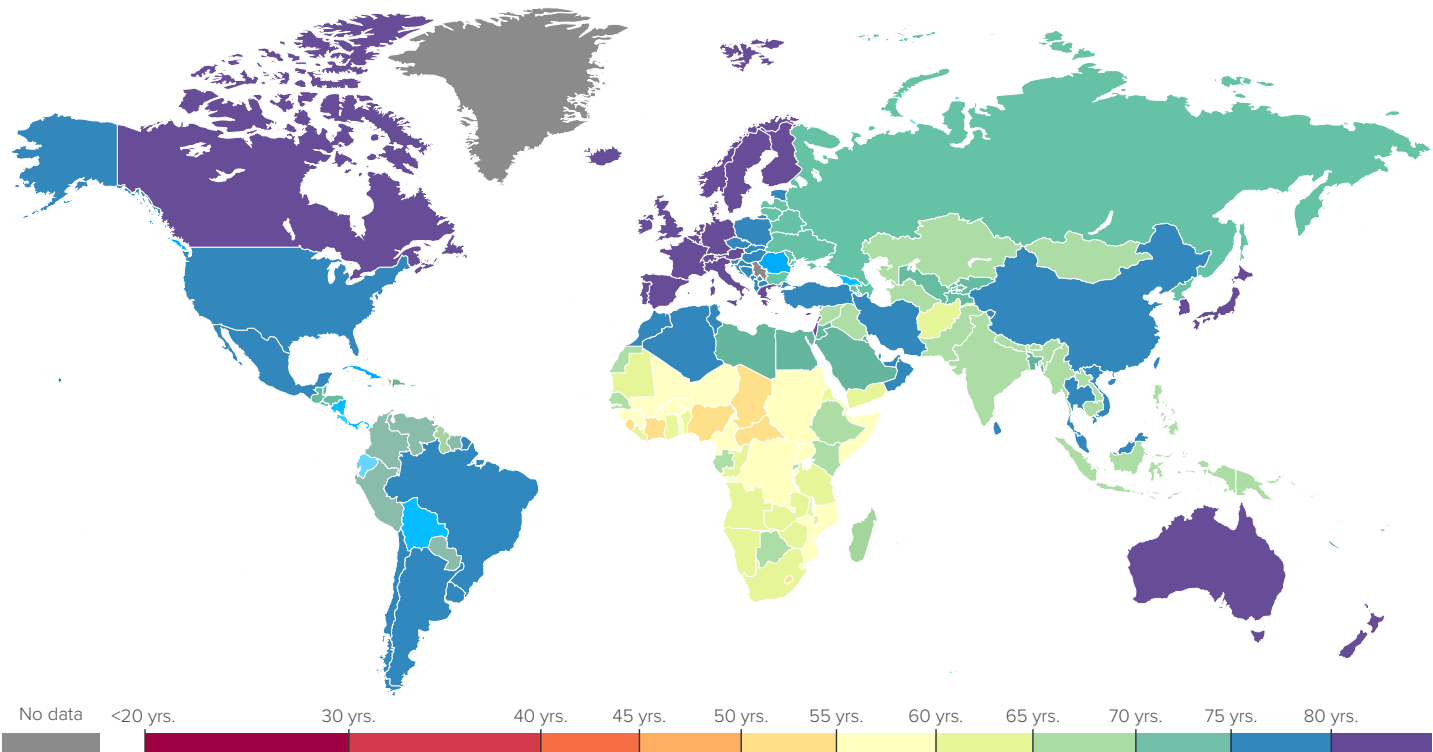
**FIGURE 13**  
**Percentage of population over 65 years old by state (2018)**



Source: U.S. Census Bureau; EY-Parthenon Analysis

FIGURE 14

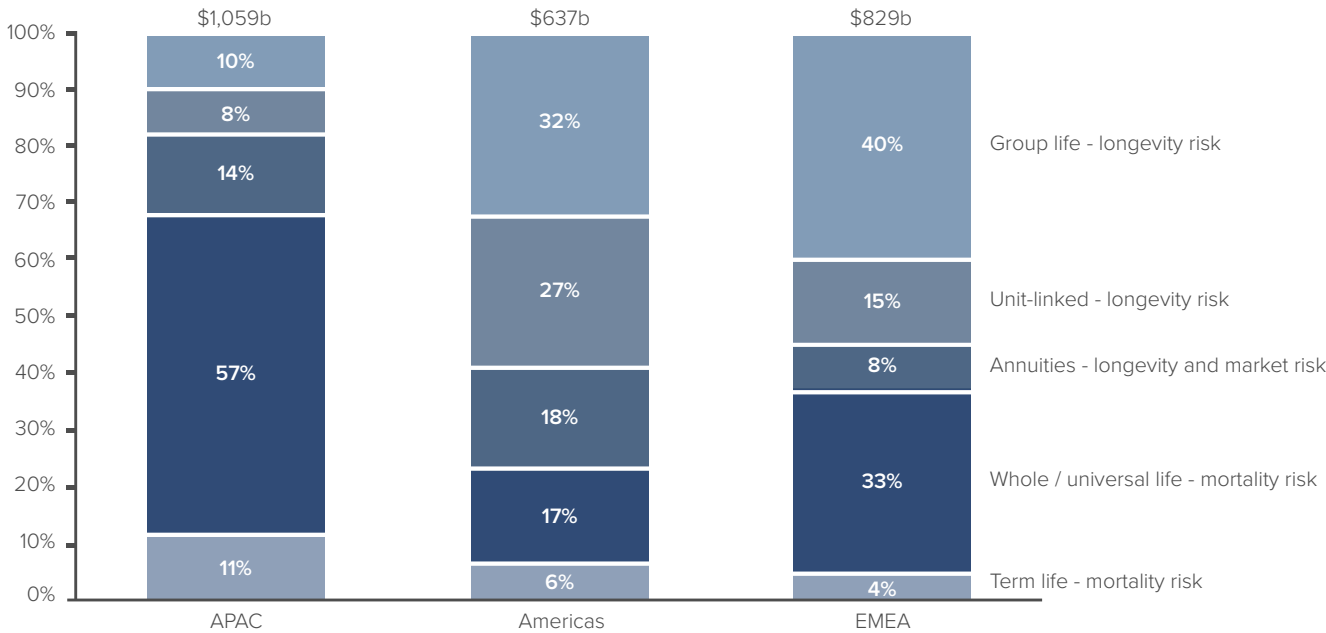
Life expectancy by country (2015)



Note: The data shown is period life expectancy at birth, the average number of years a newborn would live in a pattern of mortality in the given year were to stay the same throughout its life  
Source: UN Population Division; EY-Parthenon Analysis

FIGURE 15

Sources of life insurance and annuity premium written in select regions (2017)



EMEA = Europe, the Middle East and Africa; APAC = Asia Pacific  
Source: McKinsey Global Insurance Pools database; Insurance Information Institute; EY-Parthenon Analysis

FIGURE 16

## Fire and aviation collision losses as a percent of P&C losses in the U.S. and selected EU countries (2013-2018)

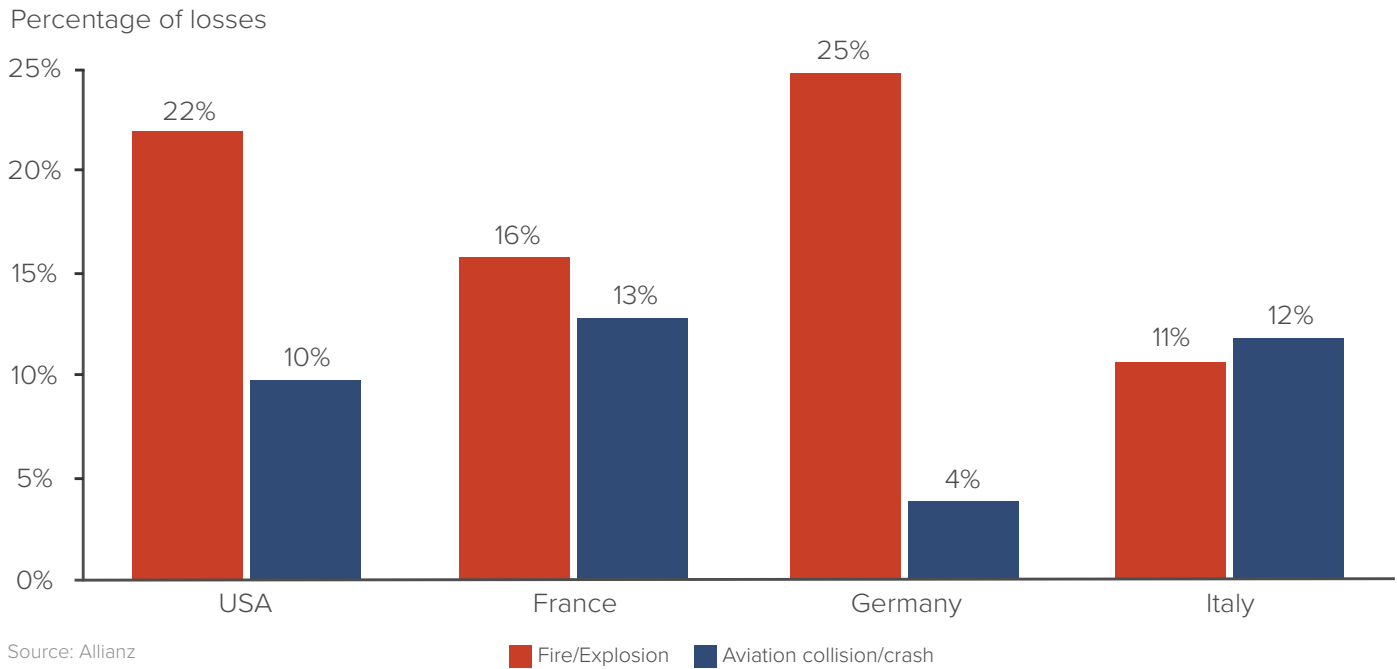
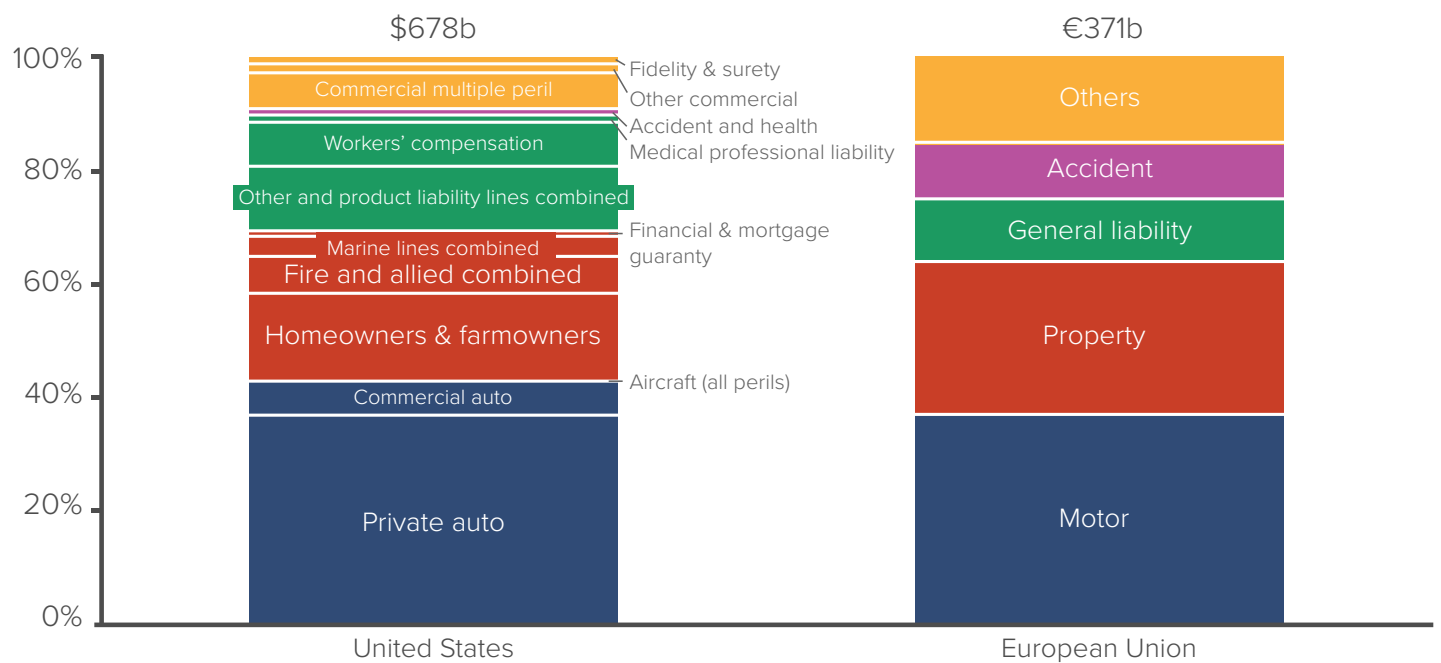


FIGURE 17

## P&C premium written in select regions (2017)





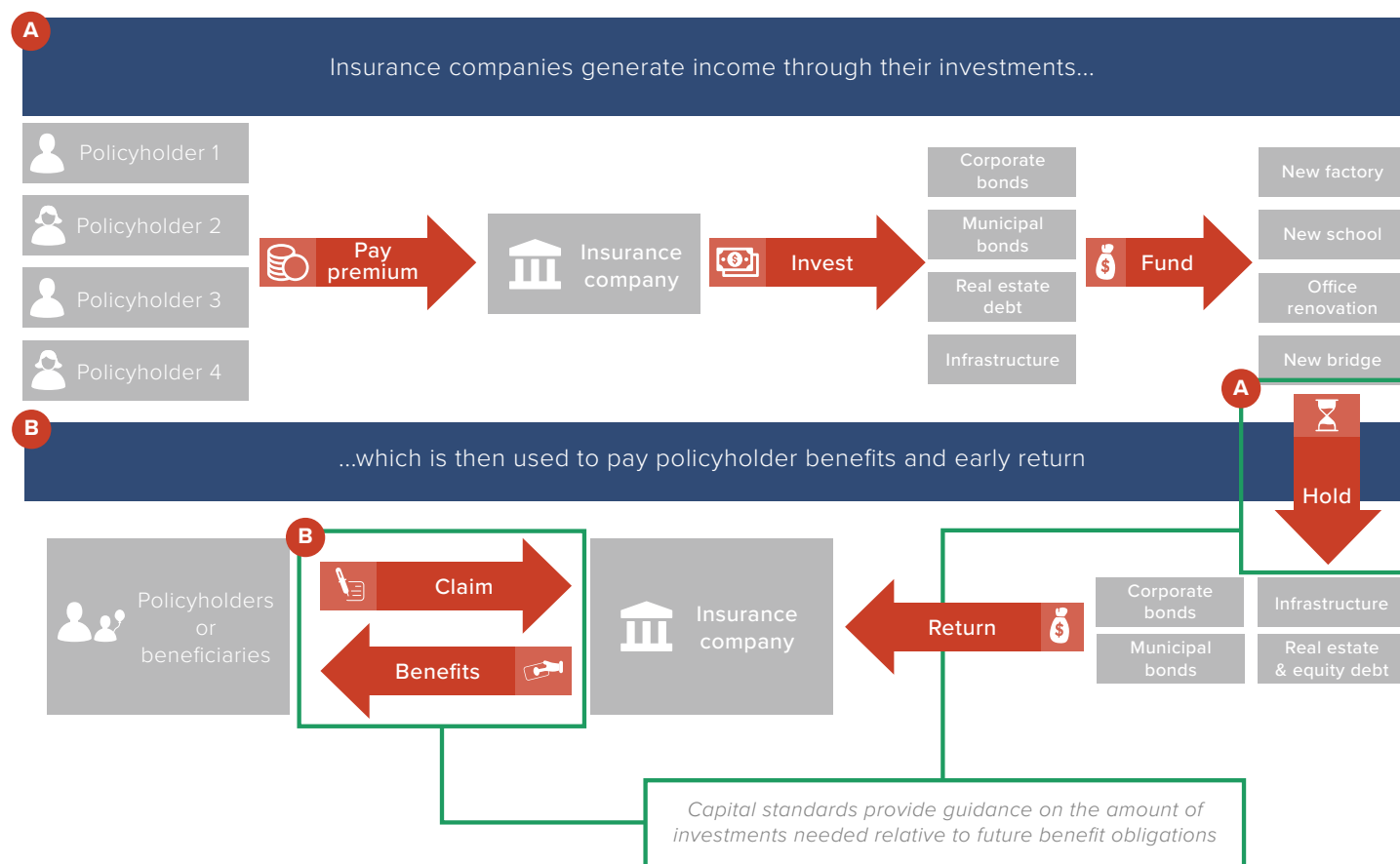
# CAPITAL REQUIREMENTS ACROSS MARKETS

As illustrated in Figure 18, insurance markets function by allowing competition among insurers to serve product needs through effective operations and investments. Insurance regulators, in turn, enable and facilitate this effective competition. Regulatory designs and practices differ across regions, due to a combination of historical precedence and unique market features. While regulators can influence and place boundaries on product availability and investment decisions, market demand itself—and thus the underlying set of complementary social risk management tools—also influences regulatory policymaking.

For example, insurers around the world are required by regulators to maintain adequate levels of capital. These capital standards increase the likelihood that policyholders will receive the benefits of insurance in the event of a claim (see Figure 18). While the regulatory frameworks applied may differ by jurisdiction and the specific insurance products offered, the essential goal of capital requirements is to reduce risk of insolvencies within the insurance industry and along with the tools, such as insurance guarantee funds and orderly resolution processes, minimize harm to policyholders when insolvencies occur. Capital requirements impact the amount and type of assets insurers hold relative to the future benefits they have promised policyholders through sales of their products.

FIGURE 18

## Capital standards in the context of the insurance business model



As a result of some of the underlying dynamics discussed previously, insurance capital requirement frameworks are diverse across jurisdictions and governed by local regulatory authorities. While all jurisdictions employ capital requirements as a tool to ensure policyholder protection, jurisdictions vary greatly in their reliance on capital requirements to meet that objective. For example, U.S. states rely more heavily on insurance guarantee funds as a backstop to ensure payment of claims in the event of an insurer insolvency.

Figure 19 compares basic solvency framework attributes across jurisdictions and illustrates the many differences across jurisdictions.

FIGURE 19

## Comparison of solvency frameworks across select jurisdictions<sup>12</sup>

Region	U.S.	EU	China	Japan	Canada	Australia	Brazil	Singapore	Mexico	South Africa
<b>Supervisor</b>	Insurance Comms	National Competent Authority	CIRC	FSA	OSFI	APRA/ASIC	SUSEP/ANS	MAS	CNFS	FSB/SARB
<b>Regulation</b>	Insurance regulatory framework	Solvency II	C-ROSS	Insurance Business Act	Insurance regulatory framework	LAGIC	Insurance regulatory framework	RBC 2	Insurance regulatory framework	Solvency and Asset Management regime
<b>Asset Valuation</b>	U.S. SAP	IFRS-based	IFRS-based	Japanese GAAP	IFRS-based	IFRS-based	IFRS-based	IFRS-based	IFRS-compatible	IFRS-based
<b>Liability Valuation</b>	U.S. SAP	Market consistent value	DCF	Market consistent value (planned)	DCF	DCF	DCF (LAT Test)	DCF	DCF	DCF
<b>Risk Metric</b>	Various metrics exist	VaR	VaR	VaR	TailVaR	VaR	VaR	VaR	VaR	VaR
<b>Insurance Market Share (Premiums)</b>	~28%	~23%	~11%	~9%	~3%	~2%	~1%	<1%	<1%	<1%

In the U.S., these systems have been robust to external pressures through the business cycle—especially when compared to other types of financial markets. According to the Congressional Budget Office (CBO), the Troubled Asset Relief Program (TARP) program ultimately disbursed \$443 billion as a result of the financial crisis,<sup>13</sup> with a total subsidy cost of \$31 billion.<sup>14</sup> In contrast, only five companies that wrote life and annuity business entered liquidation in the U.S., representing \$700 million in liabilities to policyholders—2% of the overall subsidy provided to other financial institutions through the financial crisis.<sup>15</sup>

12. Swiss Re Institute; The Geneva Association; EY Analysis.

13. While \$700 billion was authorized for disbursement, ultimately only \$443 billion was paid to financial institutions. The CBO's subsidy estimation takes into account principal repayment of TARP funds.

14. Congressional Budget Office, "Report on the Troubled Asset Relief Program," April 2019.

15. Geneva Association, "U.S. and Japan Life Insurers Insolvencies Case Studies," January 2015.

Similarly, of the approximately 2,700 P&C insurers in the U.S., only 11 insurers declared insolvency over the same period.<sup>16</sup> Additionally, the U.S. has a robust system for ensuring that policyholders are protected in the rare instances of insurer insolvency—the National Organization of Life and Health Insurance Guaranty Associations estimates that consumers recovered more than 96% of their life insurance contract values and approximately 88% of annuity contracts in the rare cases of insurance company insolvency.<sup>17</sup>

While there is a strong track record of insurer solvency regulation within the U.S. insurance system, the significant regional differences in insurance frameworks make it challenging to compare insurance operations across jurisdictions. As insurers increasingly operate across borders, international standard-setting bodies have called for harmonized regulatory frameworks in the insurance industry.<sup>18</sup>

## BASEL III

Basel III is an international regulatory framework pertaining to leverage ratios, capital requirements, and liquidity for the banking sector. While Basel III is a voluntary framework and its ultimate enforcement falls on jurisdictional regulators, its adoption across the world appears expected.<sup>19</sup> Basel III's motivation and adoption bear superficial similarities to the international capital requirements discussion for the insurance sector. While it is tempting to look to Basel III as a yardstick, it is important to emphasize that banking and insurance employ different business models, serve different functions in society, and face different risks, rendering comparisons of limited utility. For example, banks are more exposed to risk of customers withdrawing their funds, and this risk is often correlated with economic cycles. Moreover, the customer, regulatory, and market factors for insurance are extremely diverse, perhaps more so than for banking. Accordingly, the appropriate regulatory frameworks and principles relevant for banking do and should continue to differ from those for insurers.

Moreover, while Basel III does illustrate the potential benefits of global regulatory frameworks in financial services, it also exemplifies the challenges and unintended consequences given the diverse dynamics across local markets. According to the Bank for International Settlements (BIS), Basel III has helped the global banking system improve leverage ratios since 2011, after the financial crisis.<sup>20</sup> However, it has also been criticized as a “one-size-fits-all” approach that may not meet the needs of banks of varying sizes and jurisdictional focus.<sup>21</sup> The Basel framework was originally intended for larger multinational banks but has been further applied to smaller entities, resulting in meaningful business impacts on these entities. For example, commentators have noted that smaller banks may have to release mortgage servicing rights to meet requirements.<sup>22</sup> Additionally, jurisdictions have differed in their adoption and enforcement of components in the standard, highlighting the importance of flexibility in creating regulatory standards.<sup>23</sup>

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16. Federal Insurance Office, U.S. Department of the Treasury, “Annual Report on the Insurance Industry,” June 2013.

17. Geneva Association, “U.S. and Japan Life Insurers Insolvencies Case Studies,” January 2015.

18. FSB, “Global Systemically Important Insurers (G-SIIs) and the Policy Measures That Will Apply to Them,” 7/18/2013, [https://www.fsb.org/wp-content/uploads/r\\_130718.pdf?page\\_moved=1](https://www.fsb.org/wp-content/uploads/r_130718.pdf?page_moved=1)

19. BIS, RCAP on consistency: jurisdictional assessments, [https://www.bis.org/bcbs/implementation/rcap\\_jurisdictional.htm](https://www.bis.org/bcbs/implementation/rcap_jurisdictional.htm)

20. BIS, “Basel III: Are We Done Now?” 1/29/2018.

21. BIS, “Mahendra Vikramdass Punchoo: The Impact of Basel III Reforms in the Implementation of Basel II/III in Emerging Market and Developing Economies,” 7/24/2018 (“The first remark is about the growing recognition that the “one-size-fits-all” regulatory framework may not be optimal. Increasingly, in several countries, the principle of proportionality in regulation is being discussed and implemented. What is meant for internationally active banks may not or should not be indiscriminately applied to all!”)

22. Richie May, “The Impact of Basel III on Mortgage Servicing Rights,” 9/2017, <https://www.richeymay.com/blog/impact-basel-iii-mortgage-servicing-rights/>

23. BIS, “RCAP on Consistency: Jurisdictional Assessments,” [https://www.bis.org/bcbs/implementation/rcap\\_jurisdictional.htm](https://www.bis.org/bcbs/implementation/rcap_jurisdictional.htm)

# TOWARD A “COMMON LANGUAGE”: AGGREGATION APPROACHES IN THE U.S.

There has been significant discussion within the U.S. on how to accurately combine the different jurisdictional approaches that have arisen within each individual market. This process is not a simple or straightforward calculation and contains important policy trade-offs. In the following section, we will discuss the development and implications of the aggregation-based approach that leverages differing frameworks—but common goals—across different jurisdictions to translate available capital and capital requirements to reach an aggregated view of a group’s solvency.

While each jurisdiction has a unique set of regulatory methods and tools that it chooses to apply to its distinct business mix and market features, some insurance groups operate across multiple jurisdictions and thus interact with many different local regulators. International standard-setting bodies are working to develop a way to translate between different measures of solvency. In fact, while regulatory policies and regimes differ across markets, regimes do share common regulatory features.

Regulators across markets make independent decisions on specific policy calculations and frameworks. Efforts in the U.S. have attempted to identify the common factors across jurisdictions—and use these common factors as “keystones” to translate an insurance group’s capital position across jurisdictions. Similarly, the IAIS is developing ComFrame as a framework for the supervision of IAIGs, of which the ICS a component.<sup>24</sup> Clearly, the exercise of identifying, validating, and translating these key features across regulatory frameworks is challenging. The U.S. has started this process and identified a few features for further analysis, for example:

## **First intervention levels**

This is defined as the first level of capitalization within a jurisdiction that would result in regulatory action. This allows for cross-jurisdiction benchmarking of the level of capital local regulators deem to be a solvency “early warning.”

## **Base required capital**

This is defined as the amount of capital that a given insurer requires to support the risks to which it is currently exposed. This allows an aggregation method to leverage existing jurisdictional requirements when adjusting across jurisdictions.

## **Industry capitalization ratios**

This is defined as the overall industry level of capitalization, as defined by available capital divided by base required capital. Given jurisdictional differences in available capital definitions, this allows for a comparison and adjustment across these many definitional methods.

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24. IAIS, Risk-Based Global Insurance Capital Standard Version 2.0 Public Consultation, 7/31/2018.

Using these types of common measures, the NAIC and U.S. state regulators are developing a group capital calculation (GCC) for use in insurance group solvency-monitoring activities for U.S. groups.<sup>25</sup> This approach has been in development for several years and it is expected to be formally adopted relatively soon. The GCC approach will be a risk-based capital (RBC) aggregation approach.<sup>26</sup> In developing the GCC, the NAIC has also worked with the Federal Reserve Board, which is developing a similar aggregation-based group capital standard for U.S.-based insurance-led groups containing a depository bank (the building blocks approach, or BBA).<sup>27</sup>

The GCC aggregates available capital resources and required regulatory capital from the various individual entities comprising the group, including U.S. and non-U.S. entities.<sup>28</sup> To aggregate non-U.S. entities whose capital requirements may differ from U.S. RBC, the GCC applies scalars to adjust available capital and capital requirements.<sup>29</sup> This enables the GCC to adjust the non-U.S. jurisdictions' regulatory requirements to a comparable standard, and then aggregate these to the group level.

**“Similar to the available capital/financial resources and calculated required capital of U.S. insurers, the available and calculated capital of non-U.S. insurers is determined by reference to the home jurisdiction’s capital requirements.... While the GCC utilizes the available capital/financial resources and home jurisdictions’ capital requirement, it does so after considering appropriate scalars to produce comparable measures for risk which can be aggregated into the group-wide measure.”<sup>30</sup>**

—National Association of Insurance Commissioners (NAIC)

The scalars are an important GCC component for achieving harmonized group-level estimates that appropriately represent the inherent differences of the underlying entities' businesses and jurisdictions. In the current iteration of the GCC, the NAIC has calculated scalars using available insurance industry data in each jurisdiction, such as some of the key common data points mentioned earlier.<sup>31</sup> The scalar approach combines market-specific capitalization averages with the minimum capital levels resulting in any regulatory action within each local market. The scalar methodology then compares these metrics to the U.S. benchmarks to calibrate to a reasonably consistent metric.<sup>32</sup> Given that the scalars rely on available industry data, the NAIC notes that scalars could change over time in response to new data.<sup>33</sup> While there is ongoing development of the calculations underpinning the scalar approach, a number

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25. NAIC, Group Capital Calculation webpage, [https://www.naic.org/cipr\\_topics/topic\\_group\\_capital\\_calculation.htm](https://www.naic.org/cipr_topics/topic_group_capital_calculation.htm)

26. NAIC, Group Capital Calculation webpage, [https://www.naic.org/cipr\\_topics/topic\\_group\\_capital\\_calculation.htm](https://www.naic.org/cipr_topics/topic_group_capital_calculation.htm)

27. NAIC, “Field Testing for NAIC Group Capital Calculation Underway,” 6/18/2019; NAIC, Group Capital Calculation webpage, [https://www.naic.org/cipr\\_topics/topic\\_group\\_capital\\_calculation.htm](https://www.naic.org/cipr_topics/topic_group_capital_calculation.htm)

28. NAIC, “Proposed Group Capital Calculation (GCC)” 5/29/2019.

29. NAIC, “Proposed Group Capital Calculation (GCC)” 5/29/2019.

30. NAIC, “Proposed Group Capital Calculation (GCC)” 5/29/2019.

31. NAIC, “NAIC Group Capital Calculation Field Testing Instructions,” 8/2/2019.

32. NAIC, “NAIC Group Capital Calculation Field Testing Instructions,” 8/2/2019.

33. NAIC, “NAIC Group Capital Calculation Field Testing Instructions,” 8/2/2019.



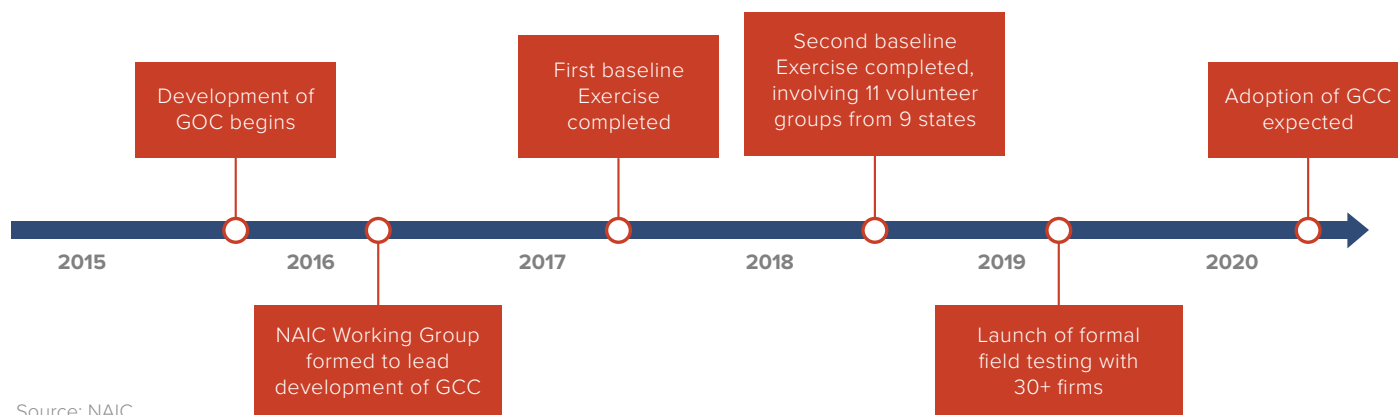
of calculations have been proposed and are currently in use during field testing efforts (see Appendix A for an overview of one such method for calculating scalars using market statistics and regulatory metrics). Of course, the use of scalars will require an accurate calculation and calibration, which could ultimately require subjective decisions to create a unified, viable benchmark.

Ultimately, the GCC provides a group capital ratio that can be used to assess the capital position of the overall group. Beyond this application, the NAIC also notes this ratio will be beneficial to “assist in understanding how capital is distributed across an entire group.”<sup>34</sup>

The GCC has been in development since 2015 and has involved coordination and input from several regulatory and policy bodies over the years, such as the Federal Reserve Board and the U.S. Department of the Treasury.<sup>35</sup> See Figure 20 for an overview of key milestones in the GCC’s development. The NAIC viewed development of the GCC as a natural extension of work U.S. state regulators had already begun in the wake of the financial crisis.<sup>36</sup> An NAIC Working Group has primarily led development of the GCC since its founding in 2016, and it has liaised with other domestic and international entities as necessary to aid development.<sup>37</sup> Two rounds of baseline exercises have been completed to test the GCC concept, and the current GCC proposal entered formal field testing in May 2019. More than 30 firms are participating across property and casualty, life, and health insurers.<sup>38</sup> The NAIC expects to adopt the GCC in 2020.<sup>39</sup> The GCC is expected to be a confidential regulatory filing to protect confidential insurance group data.<sup>40</sup>

FIGURE 20

## Timeline of GCC development



34. NAIC, “NAIC Group Capital Calculation Field Testing Instructions,” 8/2/2019.

35. NAIC, “Field Testing for NAIC Group Capital Calculation Underway,” 6/18/2019; NAIC, Group Capital Calculation webpage, [https://www.naic.org/cipr\\_topics/topic\\_group\\_capital\\_calculation.htm](https://www.naic.org/cipr_topics/topic_group_capital_calculation.htm)

36. NAIC, “NAIC Group Capital Calculation Field Testing Instructions,” 8/2/2019.

37. NAIC, Insurance Summit GCC Presentation, 2018.

38. NAIC, “Proposed Group Capital Calculation (GCC),” 5/29/2019; NAIC, GCC Field Test Kick-Off Presentation, 5/9/2019

39. NAIC, “Proposed Group Capital Calculation (GCC),” 5/29/2019.

40. NAIC, “Proposed Group Capital Calculation (GCC),” 5/29/2019.

# THE INSURANCE CAPITAL STANDARD AND PROPOSED APPROACHES

In addition to the efforts in the U.S., there have been calls to develop global standards for monitoring insurer solvency, particularly for large groups with operations around the world, in response to the solvency concerns arising from the global financial crisis. The following sections focus on the proposed Insurance Capital Standard (ICS) being developed by the International Association of Insurance Supervisors (IAIS). The IAIS is positioning the ICS as a global framework for insurer solvency and is considering several approaches, including an aggregation method conceptually akin to the GCC described above, to achieve its goals.

## THE INSURANCE CAPITAL STANDARD (ICS)

In 2013, the IAIS announced its plan to develop a risk-based global insurance capital standard.<sup>41</sup> The IAIS indicates this was in response to the FSB (Financial Stability Board) requesting it to “create a ‘comprehensive, group-wide supervisory and regulatory framework’” for international insurance groups (IAIGs—see sidebar).<sup>42</sup> The FSB highlighted that “a sound capital and supervisory framework for the insurance sector more broadly is essential for supporting financial stability.”<sup>43</sup>

### WHAT IS AN IAIG?

The ICS is intended to provide a standard for cross-border insurance entities. However, there has also been considerable ambiguity on which specific insurers would ultimately be subject to the ICS. Currently, the IAIS has two criteria in use to guide IAIG designation:<sup>44</sup>

- **International activity**

Premiums written in three or more jurisdictions, with the percentage of gross written premiums outside the home jurisdiction at least 10% of the group’s total written premium

- **Size**

On a three-year rolling average, total assets of at least \$50 billion, or gross written premiums of at least \$10 billion

Even within these criteria, each group supervisor ultimately has discretion over the inclusion of a given insurer into the list of IAIGs and the specific requirements that would apply. There is still ambiguity on the specific list of IAIGs or whether this list or criteria will evolve over time, particularly as the relationship between these factors and an insurer’s impact on the stability of the global financial system is unclear.

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41. IAIS, Risk-Based Global Insurance Capital Standard Version 2.0 Public Consultation, 7/31/2018.

42. FSB, “Global Systemically Important Insurers (G-SIIs) and the Policy Measures That Will Apply to Them,” 7/18/2013, [https://www.fsb.org/wp-content/uploads/r\\_130718.pdf?page\\_moved=1](https://www.fsb.org/wp-content/uploads/r_130718.pdf?page_moved=1)

43. FSB, “Global Systemically Important Insurers (G-SIIs) and the Policy Measures That Will Apply to Them,” 7/18/2013, [https://www.fsb.org/wp-content/uploads/r\\_130718.pdf?page\\_moved=1](https://www.fsb.org/wp-content/uploads/r_130718.pdf?page_moved=1)

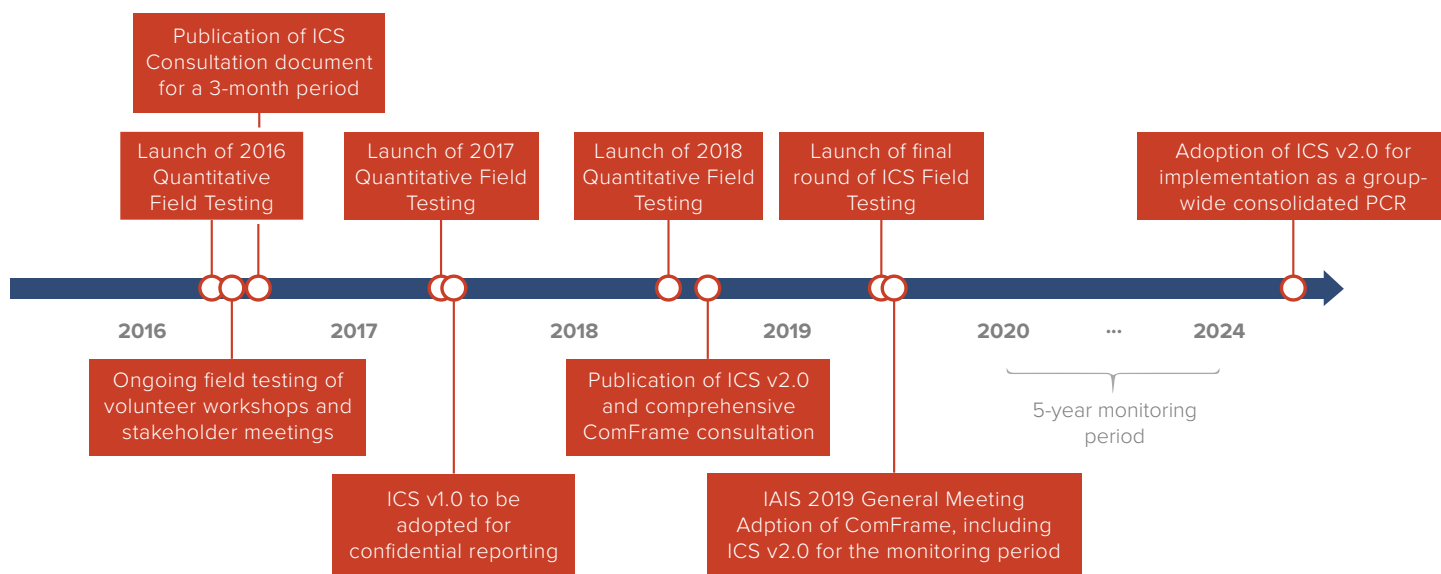
44. NAIC, *Internationally Active Insurance Group (IAIG)*, 2019.

The IAIS has been leading the development and adoption of the ICS. A key goal of the ICS is to provide a means to assess the capital adequacy and solvency of insurance groups at a global level through a quantitative calculation. This calculation is intended to reflect the overall capital adequacy of an insurance group given the various jurisdictions in which it operates, which are typically governed by their own unique capital standards and regulations.

The IAIS has reached out to insurance groups and regulatory agencies to develop the ICS over the past several years, including through six quantitative field-testing exercises (see Figure 21 for a timeline outlining key events in ICS development). The next major milestone in ICS development is adoption of the ICS v2.0, scheduled for release at the IAIS Annual Conference in November 2019. The monitoring period is expected to last five years – 2020 through 2024 – and will be used to receive feedback from supervisors and IAIGs to improve the ICS. The IAIS also seeks feedback on the comparability of the ICS to existing group capital standards or calculations in development, the extent to which material risks to IAIGs are captured, the appropriateness and practicality of the required calculations, and difficulties in implementation.”<sup>45</sup>

FIGURE 21

## Timeline of ICS development



Source: IAIS; Willis Towers Watson; PwC; Deloitte; EY Analysis

The IAIS proposes that the ICS is a “reference” or benchmark for group capital calculation and has stated that it expects all IAIGs to report their capital positions during the monitoring period on this basis. As mentioned earlier, the current reference ICS approach is based on market-adjusted valuation (MAV) with a consistent discounting approach applied across jurisdictions. The MAV approach and its potential implications on the global insurance market have been under significant discussion within the insurance industry.<sup>46</sup>

45. IAIS, “Update on the ICS and IAIS Activities During the Monitoring Period,” 6/13/2019.

46. NAIC, Approved Comments to ICS Version 2.0, 10/25/2018.

For example, speaking of such an approach, the vice chairman for supervision of the Federal Reserve Board of Governors stated, “Volatility in a valuation approach that is used in a capital standard can especially affect long-term contracts, with the potential for unintended consequences on the ability of insurers to provide long-term life insurance and retirement planning products.... The current core proposal in the ICS would face implementation challenges in the United States.”<sup>47</sup>

The IAIS has agreed to consider alternative approaches and simultaneously collect relevant data to assess comparability to the ICS and MAV. However, the IAIS does not appear to have identified the criteria upon which such determinations would be made.<sup>48</sup> One of these approaches is the aggregation method (AM), which as described above and below presents an alternative, aggregation-based methodology that relies on existing regulatory structures at the local level to arrive at an internationally comparable capital standard.<sup>49</sup> It is conceptually akin to the GCC in the U.S.

The IAIS also intends for the ICS to ultimately be used as a Prescribed Capital Requirement (PCR) after the monitoring period.<sup>50</sup> The PCR would be a “solvency control level above which the supervisor does not intervene on capital adequacy grounds.”<sup>51</sup> This PCR will apply at the group level, rather than for any particular entity within a group,<sup>52</sup> which has raised concern that capital may need to be held at the group level rather than within the entities comprising the group. In addition, given that insurance entities are typically regulated at the jurisdictional level and regulatory authority resides within a jurisdiction, important questions remain about the legal ability to compel capital movement across jurisdictions or entities within a group. Indeed, the IAIS states, “The IAIS is a standard setting body and does not have any legal power to directly mandate the implementation of the ICS as PCR in jurisdictions.”<sup>53</sup>

## GOALS OF THE ICS

The IAIS’s stated purpose for the ICS is to “create a common language for supervisory discussions of group solvency to enhance global convergence among group capital standards with the ultimate goal of a single ICS that includes a common methodology by which one ICS achieves comparable, i.e. substantially the same, outcomes across jurisdictions.”<sup>54</sup>

The development of a methodology that achieves these goals is an ongoing process. To date, the IAIS has designated a MAV-based PCR as the “reference” approach, which means it will be the benchmark against which alternative approaches will be measured. The IAIS has agreed to simultaneously consider and collect data for alternatives and acknowledges the possibility of multiple paths forward due in part to concerns from the U.S. and other jurisdictions.<sup>55</sup> Furthermore, the IAIS has indicated the ICS is a “minimum standard” that local regulatory supervisors “will implement or propose to implement taking into account specific market circumstances in their respective jurisdictions.”<sup>56</sup> Nevertheless, given the fundamental divergence between the reference ICS and other approaches such as the AM, comparisons will be challenging.

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47. Federal Reserve, Remarks by Vice Chairman for Supervision at ACLI Executive Roundtable, 1/9/2019.

48. IAIS, Risk-Based Global Insurance Capital Standard Version 2.0 Public Consultation, 7/31/2018.

49. There has also been discussion and consideration of other approaches for valuing liabilities, such as GAAP with Adjustments (GAAP+) and internal models, which are not a primary focus of this research report.

50. IAIS, Risk-Based Global Insurance Capital Standard Version 2.0 Public Consultation, 7/31/2018.

51. IAIS, Risk-Based Global Insurance Capital Standard Version 2.0 Public Consultation, 7/31/2018.

52. IAIS, Risk-Based Global Insurance Capital Standard Version 2.0 Public Consultation, 7/31/2018.

53. IAIS, Risk-Based Global Insurance Capital Standard Version 2.0 Public Consultation, 7/31/2018.

54. IAIS, Update on the ICS and IAIS Activities During the Monitoring Period, 6/13/2019.

55. IAIS, Risk-Based Global Insurance Capital Standard Version 2.0 Public Consultation, 7/31/2018.

56. IAIS, Risk-Based Global Insurance Capital Standard Version 2.0 Public Consultation, 7/31/2018.

# PROPOSED APPROACHES

We will now consider two primary approaches to the ICS—the MAV and the AM. While the ICS has also considered GAAP+ as another alternative, the major distinctions between the MAV and the aggregation method highlight the primary differences between an “aggregation” approach (AM) and a “consolidated” approach to group capital calculations.

## MARKET-ADJUSTED VALUATION (MAV)

The MAV is the valuation approach for calculating group capital and capital requirements in the current ICS version. The MAV has been in development for several years (including before the IAIS formally decided to consider alternative approaches such as the AM).<sup>57</sup> The MAV aims to apply a standardized valuation for the calculation of capital adequacy for each entity within an insurance group to ultimately measure solvency at the group level. According to the IAIS, the MAV “focuses on the comparability of valuation of assets and liabilities across IAIGs.”<sup>58</sup> It has several similarities to Solvency II, the solvency framework developed and employed in the EU.

Components of the MAV methodology differ from local accounting rules in many jurisdictions (e.g., U.S. GAAP and U.S. Statutory Accounting Principles).<sup>59</sup> As the MAV approach may rely on financial information not currently produced, the degree to which it can be audited and governed by existing auditing rules and standards is unclear. In addition, the IAIS highlights the following key differences:<sup>60</sup>

- Using current estimates for insurance liabilities (i.e., the present value of all future cash flows)
- Discounting using a yield curve derived from the risk-free rate<sup>61</sup>
- Using fair-value estimates for financial instruments

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57. IAIS, Risk-Based Global Insurance Capital Standard Version 2.0 Public Consultation, 7/31/2018.

58. IAIS, Risk-Based Global Insurance Capital Standard Version 2.0 Public Consultation, 7/31/2018.

59. IAIS, Risk-Based Global Insurance Capital Standard Version 2.0 Public Consultation, 7/31/2018; NAIC, Approved Comments to ICS Version 2.0, 10/25/2018.

60. IAIS, Risk-Based Global Insurance Capital Standard Version 2.0 Public Consultation, 7/31/2018.

61. The U.S. yield curve is generally similar to a high-grade corporate rate and not the risk-free rate.

## AGGREGATION METHOD (AM)

The AM is a proposed alternative approach to a consolidated approach to the ICS. It is similar to the aggregation approach for GCC discussed above.<sup>62</sup> The AM approach leverages existing jurisdiction-level capital requirements and solvency regimes and aggregates them to a global, group level via scalars (see Figure 22).<sup>63</sup> As a result, the AM aims to preserve local dynamics and capital requirements already determined for jurisdictional authorities, translating across different jurisdictions with appropriate scalars. Thus, proponents argue the calculation provides a group-level solvency measure that is comparable across insurance groups provided the scalars are calibrated appropriately for each jurisdiction.

NAIC has identified several attractive attributes in the AM:<sup>64</sup>

- **Leverage of existing solvency frameworks**

The aggregation approach leverages existing jurisdictional solvency frameworks and capital requirements that are already tailored to products available and risks in each jurisdiction (e.g., risk-based capital in the U.S. or Solvency II for the EU). Moreover, because the aggregation occurs from the individual entity-level components, the AM provides insight into each entity's contributions to overall capital and solvency at the group level.

- **Alignment with regulatory authority**

Insurance entities are generally regulated by authorities within their local jurisdictions, thus aggregation across local requirements is naturally aligned with the scope of those local regulators. In contrast, a consolidated, group-wide view may be of limited use to local regulators, whose power is limited over entities within a group in other jurisdictions.

- **Indifference to corporate structure**

The location of an entity within an insurance group or intragroup transactions should not impact group-level solvency measures with an aggregation approach.

- **Transparency**

The aggregation method provides supervisors with information at the entity level within broader insurance groups. This provides supervisors visibility on the capital position of specific entities in various jurisdictions within an insurer—allowing a more granular perspective of solvency than a “consolidated” approach that has a more limited view on component parts of the aggregated group.

- **Comparability across entities within a group**

Properly calibrated scalars enable comparing risk levels across different entities with the group, as different scalar values suggest different levels of relative risk.

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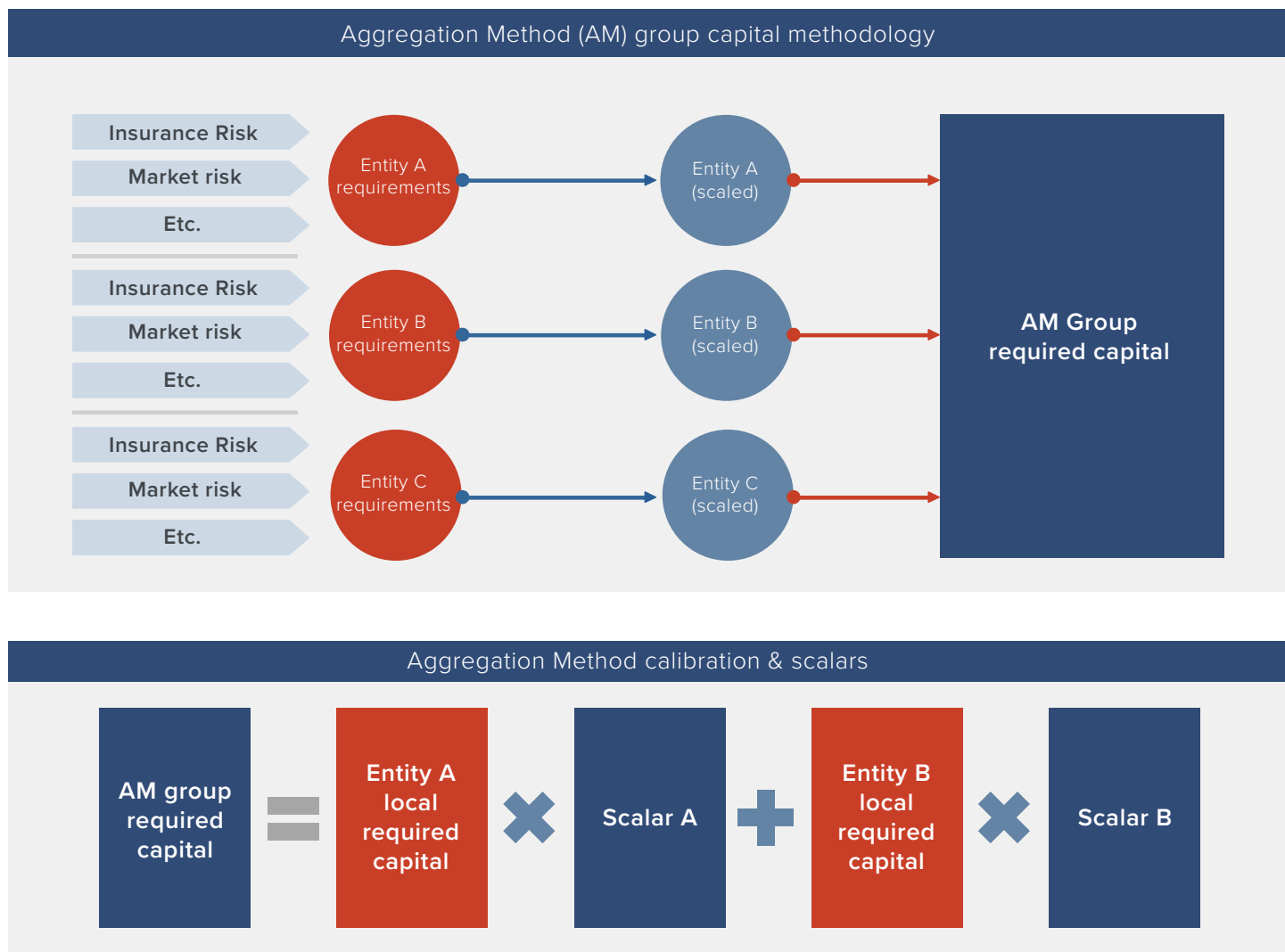
62. NAIC, Group Capital Calculation webpage, [https://www.naic.org/cipr\\_topics/topic\\_group\\_capital\\_calculation.htm](https://www.naic.org/cipr_topics/topic_group_capital_calculation.htm)

63. NAIC, Summer National Meeting Materials Packet, August 1-2, 2019.

64. NAIC, Summer National Meeting Materials Packet, August 1-2, 2019.

FIGURE 22

## Illustration of aggregation method methodology



Source: NAIC

The IAIS recognizes the potential for the AM as an alternative to the consolidated approach to the ICS. As part of a 2017 agreement in Kuala Lumpur, the IAIS agreed to collect data from interested jurisdictions to evaluate whether the AM provides comparable outcomes to the ICS.<sup>65</sup> The IAIS has indicated it “aims to be in a position by the end of the monitoring period to assess whether the aggregation method provides comparable, i.e. substantially the same (in the sense of the ultimate goal), outcomes to the ICS. If so, it will be considered an outcome-equivalent approach for implementation of the ICS as a PCR.”<sup>66</sup>

The GCC discussed above bears conceptual similarity to the AM proposed for the ICS. The GCC’s development and expected adoption provide insight into the viability of an aggregation-based approach for the ICS. The vice chairman for supervision of the Federal

65. IAIS, Risk-Based Global Insurance Capital Standard Version 2.0 Public Consultation, 7/31/2018.

66. IAIS, Risk-Based Global Insurance Capital Standard Version 2.0 Public Consultation, 7/31/2018.



Reserve Board of Governors noted, “It is our intent that the Federal Reserve’s development of the BBA, together with the NAIC’s development of the GCC, will assist with Team USA’s advocacy of an aggregation method that can be deemed comparable to the ICS.”<sup>67</sup> Notably, five firms of the 30+ currently participating in GCC field testing potentially qualify as IAIGs.<sup>68</sup> The field-testing work with these firms potentially informs how an aggregation-based approach might be implemented for IAIGs.

# COMPARISONS ACROSS FRAMEWORKS

While both approaches aim to fulfill the goals of the ICS, they differ in how they work with existing regulatory regimes, ease of implementation, key assumptions, and other factors. Specifically, the approaches differ based on the following factors detailed below and are summarized in key considerations in Figure 23:

FIGURE 23

## Key considerations for the aggregation method

Area	Key considerations
Calculation basis	The MAV consolidates across jurisdictions by applying the rules/principles to each on a consolidated basis, whereas the AM aggregates across jurisdictions with scalars.
Relationship with existing regimes	The MAV does not preserve existing local regimes and instead applies the same set of principles globally, whereas the AM preserves those regimes and aggregates across them.
Ease of implementation	By applying principles not consistent with local practices, the MAV may be more difficult to implement and drive more incremental costs than an AM approach.
Visibility into insurance groups	The AM’s methodology enables visibility into the entity-level contributions toward the group capital calculation.
Influence on product offerings	The MAV’s liability valuation can negatively impact the ability of covered firms to provide certain product offerings.
Consistency	The MAV is consistent in applying the same principles across jurisdictions (regardless of local rules), whereas the AM is consistent in that it translates across jurisdictions with scalars (leveraging local rules) to reach a harmonized, group-wide measure.
Strict assumption of fungibility	The ICS, through a group-wide calculation, assumes capital is fungible across jurisdictions, whereas the AM aggregates capital, allowing for a picture of the capital position within each separate jurisdiction.
Volatility and procyclicality	MAV valuations are based on current estimates and discounting that may introduce period-by-period fluctuation, including for products where short-term volatility is not representative of expected longer-term liabilities.

67. Federal Reserve, Remarks by Vice Chairman for Supervision at ACLI Executive Roundtable, 1/9/2019.  
68. NAIC, “Proposed Group Capital Calculation (GCC),” 5/29/2019; NAIC, GCC Field Test Kick-Off Presentation, 5/9/2019

- **Underlying calculation bases**

The AM generally starts from jurisdictional assets and liabilities to assess group-level capital requirements. The MAV employs a consolidation-based approach that applies the same valuation principles to all of the insurer's accounts, regardless of the jurisdiction or sector of the comprising entities. The AM preserves available and required capital and capital calculations as determined at the jurisdictional level and aggregates them using scalars to reach a group-level measure.

- **Relationship with existing regimes**

Approaches vary in the degree in which they leverage existing jurisdictional solvency regimes. A key component of the AM is its flexibility and preservation of existing jurisdictional frameworks given that it achieves a group-level perspective via scalars. On the opposite side of the spectrum, the MAV requires a consistent, consolidated approach applied across jurisdictions and thus does not aim to preserve existing jurisdictional frameworks by construction.

- **Ease of implementation**

MAV implementation may be more challenging than other approaches given it imposes an unaudited framework not otherwise used in a group's financial reports, and calculations that may not be performed or relevant for local jurisdictional authorities. MAV rules differ from many jurisdictional regulatory accounting rules (e.g., U.S. SAP) in methodology and calculations. For example, the valuation of insurance liabilities, an important part of evaluating solvency, varies under the MAV versus U.S. SAP. Thus, some insurance stakeholders have highlighted the significant incremental effort that could be required to report on a MAV basis moving forward. As a relevant benchmark of the potential magnitude of the implementation cost of the MAV, the Association of British Insurers estimated that implementation of Solvency II, a large, then-new regulatory framework and thus reasonable proxy, in the U.K. cost £3 billion.<sup>69</sup> In contrast, the AM leverages existing solvency measures and existing jurisdictional frameworks and may impose lower costs of implementation.

- **Visibility into insurance groups**

As an aggregation-based approach, the AM provides both a group-level metric as well as visibility into the component contributions from each individual entity within an insurance group to the resulting group-level metric. This could be beneficial for local regulators and supervisors (who are ultimately charged with enforcing any guidance from the ICS) by providing insight at the group level as well as entity level. As shown in Figure 22, the aggregation approach translates capital standards across entities such that they can be aggregated to a single measure while preserving insight into entity-level contributions.

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69. Financial Times, "Insurers Claim Capital Rules Are Harming Customers," 11/17/2016.

- **Influence on product offerings**

The MAV differs from other approaches in its potential to influence product availability within jurisdictions due to its use of market-based valuation of liabilities, which is not the dominant basis in many regulatory frameworks. Market-based valuations such as the MAV have a significant impact on long-term guarantee products which, for example, are popular in the U.S. These changes may influence how ratings agencies and capital markets perceive insurance groups offering these products and the incentives for insurers to continue doing so. The AM notably addresses this concern by preserving local jurisdictional regimes, enabling flexibility across jurisdictions (e.g., jurisdictions may adopt MAV-like local standards and still use an aggregation-based group capital method).

- **Consistency**

Compared to other approaches, the MAV may be more consistent from the perspective of applying the same valuation principles across jurisdictions independent of legal domicile.<sup>70</sup> There is the risk however, that the MAV is interpreted and implemented differently by and/or across jurisdictions. The AM is consistent in that it applies scalars to all jurisdictions that are tailored to each jurisdiction. However, the process of determining the appropriate scalar methodology is a complex question that has already undergone significant discussion within the U.S. process for developing the standard—see the discussion of the GCC above.

- **Strict assumption of fungibility**

ICS 2.0, through its focus on a consolidated calculation, generally assumes capital within an insurance group is fully fungible and interchangeable across entities within the group.<sup>71</sup> However, insurance entities, including those in the U.S., are typically regulated and bound by rules at the jurisdiction or legal entity level, which may influence capital fungibility within and across jurisdictions. Additionally, there are frictional costs involved with moving capital across entities/jurisdictions (e.g., tax) that are not reflected in the MAV. Moreover, to the extent capital is not fungible, placing capital at the holding company or group level is not necessarily an efficient method to deploy capital. The IAIS appears to acknowledge the limitation of this assumption and notes that a “holistic approach to the fungibility of capital within the ICS” is an issue to be further explored in future ICS versions.<sup>72</sup> In contrast, the AM does not make fungibility assumptions, because it aggregates individual entity-level capital and capital requirements up to a group level.

- **Volatility and procyclicality**

The MAV requires insurance liabilities to be valued based on the present value of expected future cash flows typically using current discount rates. This effectively translates to market-based valuation as opposed to book values or other measures used in some statutory accounting frameworks that focus on the long-term nature of life and annuity contracts that contain withdrawal penalties or other features that reduce liquidity risks and that are managed using appropriate asset-liability management strategies. As interest rates

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70. IAIS, Risk-Based Global Insurance Capital Standard Version 2.0 Public Consultation, 7/31/2018.

71. The Property Casualty Insurers Association, Comments to Insurance Capital Standard Version 2.0, 10/30/2018.

72. IAIS, Risk-Based Global Insurance Capital Standard Version 2.0 Public Consultation, 7/31/2018.

or other factors change from period to period, market-based valuations may also change in lock step. Because the MAV also applies a discount to the insurance liabilities of non-life insurers to reflect the time value of money, it has the effect of making non-life insurance liabilities appear to be interest-rate sensitive as the market valuation changes with changes in interest rates. Unless claims happen far into the future, changes in interest rates have no direct impact on the amount of claims paid by non-life insurers as such amounts are based on the severity of losses (property coverage) and other societal factors (e.g., jury awards for liability coverage). This introduces volatility and procyclicality into solvency measures and makes the business models of insurers artificially more volatile with respect to underlying, transient business cycles.<sup>73</sup> Recognizing this, a former Federal Reserve governor noted procyclicality concerns with Solvency II,<sup>74</sup> which employs similar valuation principles as the MAV. Similarly, a U.K. House of Commons Treasury Committee study argued Solvency II incentivizes procyclical actions by insurers as their solvency is threatened (e.g., as valuations fall during economic downturns).<sup>75</sup> In contrast to the concerns with the MAV above, the AM does not drive incremental volatility or procyclicality given it aggregates across various local standards.

## **CYCLICALITY AND LIQUIDITY IN FINANCIAL MARKETS**

Cyclicality and liquidity dynamics differ between banks and insurers. Both banking and insurance business models rely on collecting funds from customers as liabilities (i.e., deposits for banks and premiums for insurers) and investing those funds in an asset mix that generates profits while covering liabilities. However, the fundamental nature of deposits and premiums differ and contribute to different liquidity behavior over the business cycle. Compared to insurance premiums, banks are more prone to withdrawal risk given that customers can choose to have deposited funds (and thus bank liabilities) returned to them at any moment. This contributes to increased volatility and uncertainty about how much capital must be on hand to cover liabilities for banks versus insurers.

Moreover, withdrawal risk tends to be correlated with economic cycles, particularly within recessions that cast doubt on bank solvency. The aggregation of this risk across customers can create “run on the bank” scenarios and liquidity crises, which have historically happened around economic downturns. However, due to the basic business model of insurers, this risk is mitigated by the long-term nature of insurance liabilities. While there is some degree of withdrawal or surrender risk within certain products, insurers are mostly insulated from short-term liquidity needs by the long-term nature of insurance products. Property and casualty products typically have little withdrawal risk given the premium is generally earned within the policy period.

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73. Federal Reserve, Remarks by Vice Chairman for Supervision at ACLI Executive Roundtable, 1/9/2019.

74. Federal Reserve, “Insurance Companies and the Role of the Federal Reserve,” 5/20/2016.

75. House of Commons Treasury Committee, “The Solvency II Directive and Its Impact on the U.K. Insurance Industry,” 10/25/2017.

# IMPACT ON INSURANCE MARKETS

One of the fundamental questions facing the IAIS is the degree to which a group solvency approach should rely on a single, uniform approach or seek to translate and aggregate across existing local standards and dynamics. A consolidated approach may have several impacts on the availability of products to potential insurance purchasers, regulators' abilities to manage to their local market priorities, and insurers' ability to effectively match liabilities and compete on a consistent basis with local competitors.

One example of this underlying dynamic is the IAIS's approach to taxes within the ICS. Because tax policies and rates are significantly different across countries (and, in some instances, can vary even sub-nationally across different taxing authorities), public comments from IAIS members have focused on the suitability of a single consolidation method of valuing certain tax benefits (e.g., deferred tax assets).

Tax rates are challenging to consolidate because the calculated effective tax rate can fluctuate due to the mix of businesses across multiple taxing jurisdictions. Additionally, different jurisdictions have varying rules on when certain tax benefits can be realized. For example, deferred tax assets under U.S. GAAP accounting are fully recognized, and then offset, if necessary, by an amount of any tax benefits that, based on available evidence, are not expected to be realized. In contrast, under International Financial Reporting Standards (IFRS), deferred taxes are recognized only if it is probable that they will be used. To the extent that deferred tax assets can impact an insurer's capital position, a consolidation approach would need to reconcile the different accounting accrual approaches in a single, standardized methodology.<sup>76</sup>

The challenge surrounding how to effectively manage different tax policies across jurisdictions parallels the broader discussion on whether an aggregation or a consolidation approach is best suited to generate a group-level view of an international insurer's position. Given the differences in tax policies and accounting accrual criteria, the benefits of a standardized tax calculation based on consolidated group effective rates would need to be considered relative to the significant local nuances that can create specific jurisdictional differences.

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76. Institute of International Finance and the Geneva Association, "IAIS Public Consultation on Risk-Based Global Insurance Capital Standard Version 2.0," 2018.

# PRODUCT AVAILABILITY

Product availability can be impacted by valuation and capital standards. For example, variable annuity and universal life products are tailored to provide direct exposure to investment returns and guaranteed benefits and can complement customers' overall savings strategies with potentially higher-returning (and higher-risk) policies. Given exposure to investment returns and guarantees, their valuation can impact insurers' willingness to offer these products. Other important long-duration products, whole life insurance, fixed annuity products, and long-duration P&C products, such as long-dated worker's compensation liabilities, can also be sensitive to interest rate assumptions in a market-adjusted liability valuation methodology.

The insurance industry has already experienced product availability impacts from the implementation of Solvency II, which uses a similar liability valuation approach as the ICS (MAV) and thus serves as a relevant proxy for potential impact. In a survey of insurers from across Europe, 58% of insurers offering long-term saving products with guarantees noted a negative effect of Solvency II on their products.<sup>77</sup> Additionally, many European market participants continue to express concern about the impact of product availability due to Solvency II:

“European insurers have been surprised by how volatile the post-Solvency II balance sheet has turned out to be in practice. They have an increasing focus on managing this volatility—and its impact on financial strength—over the planning cycle.”<sup>78</sup>

—Standard Life Investments

“To the extent that the rules also discourage insurers from offering annuities, there will be a transfer of risk to Government, and poorer value for consumers.”<sup>79</sup>

—House of Commons Treasury Committee

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77. Insurance Europe, “Survey Shows Solvency II Brings Benefits but Deters Long-Term Business,” 06/26/2018.

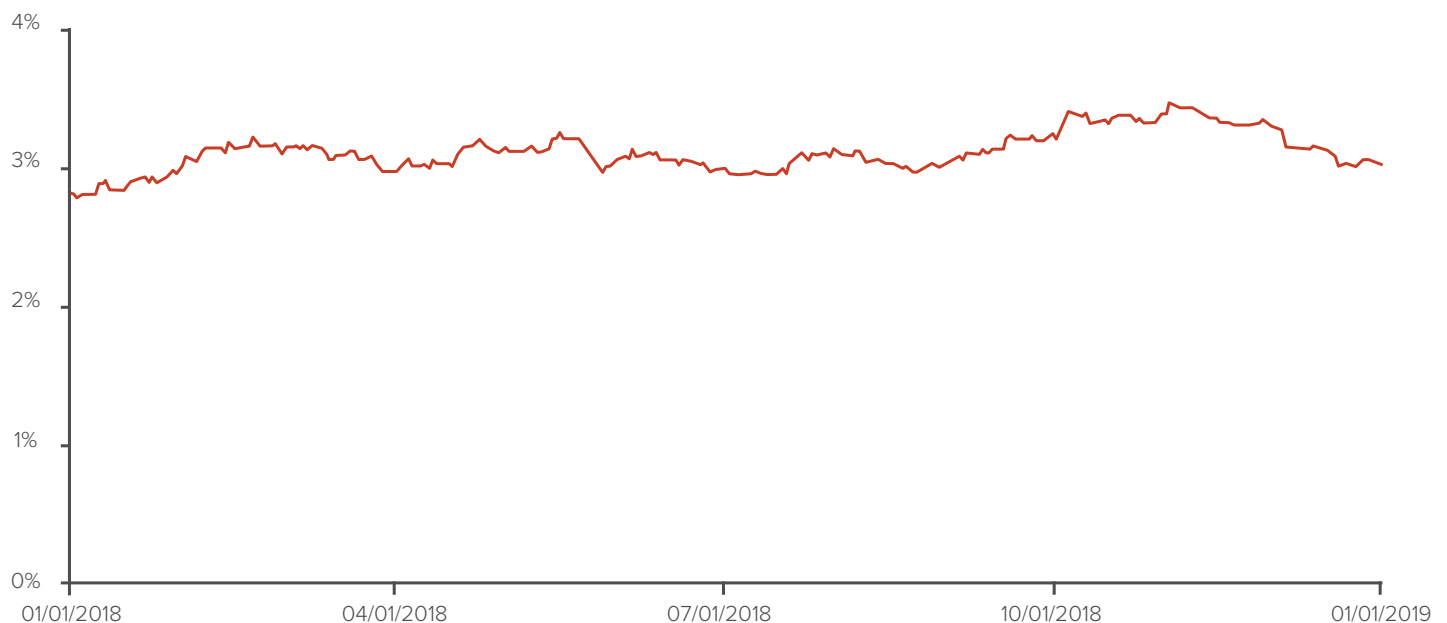
78. Standard Life Investments, “Insurance Industry Update 18 Months on From Solvency II,” May 2017.

79. House of Commons Treasury Committee, “The Solvency II Directive and Its Impact on the U.K. Insurance Industry,” 10/25/2017.

The variable nature of liabilities for these types of products presents challenges when considering how to determine the appropriate levels of capital to set aside within any solvency regime. An aggregated methodology reflects each jurisdiction’s tailored approach to this key question. Alternatively, other approaches rely on standardized discount curves to value the position of the insurer at a given point in time. For example, to value the liabilities of longer-term interest rate-sensitive products, the market-adjusted valuation approach attempts to calculate the present value of liabilities by discounting future payments to the present using standardized discount rates. To the extent the standardized discount rate approaches the risk-free rate, insurers’ business models can no longer assume the earning of a credit spread on their assets. Given the variable nature of future liabilities, these assumptions can change over time, resulting in variable capital requirements and fluctuating capital needs. For example, very long-run interest rates can still vary over the short term (see Figure 24). Thus, for product valuations that depend on longer-run interest rates, measurement on a current basis introduces more volatility. However, this volatility is not necessarily representative of risk in longer-term products where the period-by-period movements are not as representative of the long-term expectations of interest rates, which are more aligned with management of certain liabilities.

FIGURE 24

### 30-Year U.S. Treasury Constant Maturity Rate, 2018 (daily frequency)



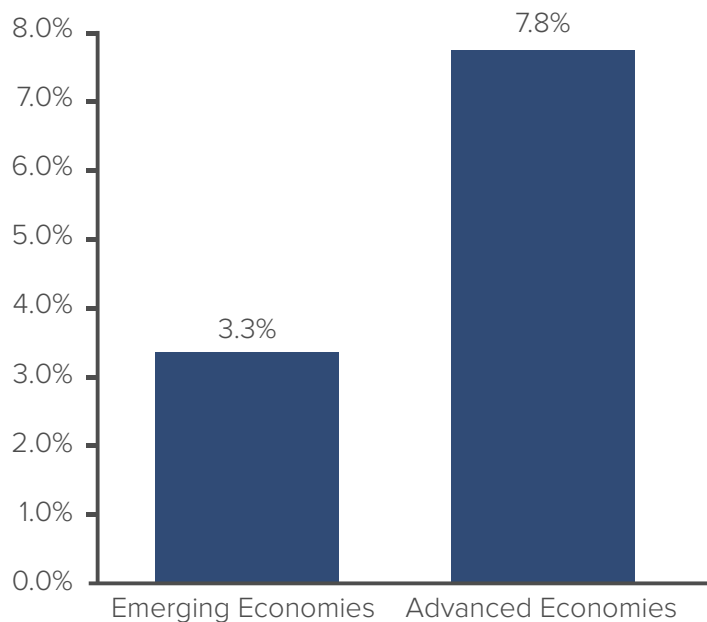
Source: S&P Capital IQ

The marked differences of insurance usage across mature markets also demonstrates a challenge for economies that are expected to be able to achieve higher insurance market penetration moving forward. As shown in Figure 25, emerging economies have insurance penetration less than half of advanced economies, and thus could see significant increases in their local market penetration as domestic incomes increase. As these emerging economies continue to increase their adoption of insurance products, they will also be increasingly



FIGURE 25

## Premiums as percentage of GDP

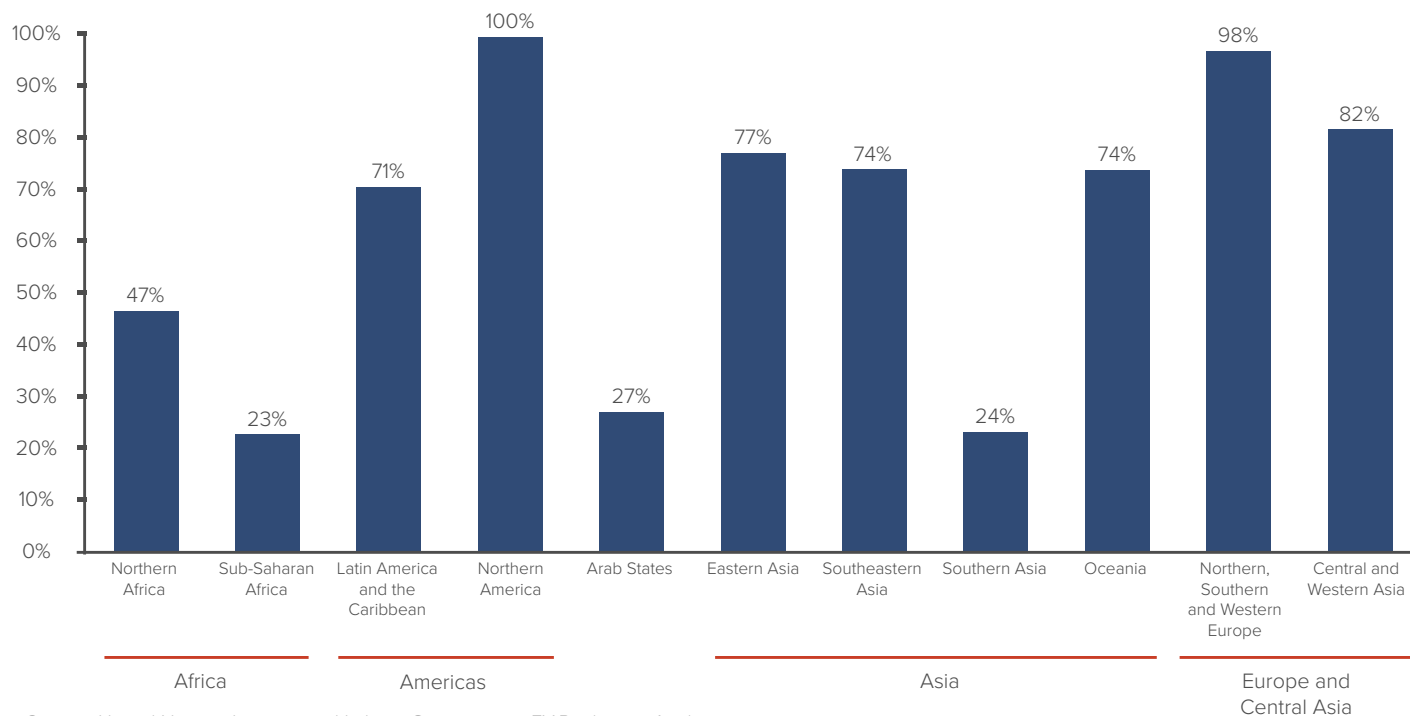


Source: Swiss Re Institute; EY-Parthenon Analysis

supporting the growing need to supplement public sector old-age pension schemes with private market products. Old-age pension schemes currently look dramatically different worldwide, as shown in Figure 26. Because the increase of insurance product adoption could be conducted in conjunction with broader government regulatory initiatives to provide income protection to their relevant constituents, regulators in these jurisdictions will need to balance local market needs with commonly accepted best practices.

FIGURE 26

## Percentage of the working-age population (15-64 years) covered by existing law under mandatory contributory and noncontributory old-age pensions



Source: United Nations International Labour Organization; EY-Parthenon Analysis

# INSURER COMPETITION

Any global capital standard could potentially impact insurance firms' business strategy, as capital requirements and available capital calculations impact market attractiveness, and thus key market entry and exit considerations and relative competitive positioning. Insurers' business strategies rely on effectively and efficiently deploying sufficient capital to generate returns from investments to pay claims and earn margin. To the extent that internationally active firms are subject to different capital rules and requirements than non-global entities, this could reduce the ability of internationally active insurers to compete locally and invest for growth abroad.

One critical feature of the current ICS standard is that it applies only to internationally active insurance groups. Because the ICS is a guiding standard instead of a binding regulation, IAIGs would still be held accountable to local regulatory requirements. As a result, the creation of a global consolidation standard could create two overlapping standards for assessing solvency within a given jurisdiction. This could make it more challenging for internationally active insurers to effectively compete within both standards. As insurers consider this underlying dynamic in the context of their broader growth strategy, this could also limit the ability of smaller insurers to realize growth opportunities abroad and expand their business. Moreover, complying with a new standard that is significantly different than current jurisdictional practices may impose additional costs.

While an aggregation approach can reveal issues with respect to a group's capital position, it is intended to be used in conjunction with other supervisory tools. As a result, a global regulatory standard based on local requirements, such as an aggregation approach like the GCC, could have the strategic benefit of allowing international insurance providers to compete on the same basis as locally regulated ones within each individual market. This could ensure that market competition is brought to bear on both international and domestic insurance firms, increasing the benefits to consumers as insurance companies compete on pricing, coverage, and other consumer benefits.

# CAPITAL MARKETS

As discussed previously, the business model of insurers for long-duration contracts also relies on generating returns from investments to pay future claims and earn returns. As longer-term investors, insurers focus on stable, long-term investments to support their long-term liabilities and claim payments. Increasingly, insurers in the U.S. have also turned to less-liquid investments to create value (and earn return) by holding investments that are traded less frequently.

While this approach matches the liability profile of an insurer's business model, it is more challenging to implement in a framework in which long-term liabilities are volatile due to underlying valuation methods, that is, the MAV. As insurers need to match their asset portfolio with the characteristics of their aggregate liabilities, increasing the volatility of liabilities could impair an insurer's ability to invest in assets that are more challenging to divest over the short term. The aggregation method allows the use of jurisdictional capital requirements that can focus on an insurer's longer-term capital horizons. This in turn allows for more flexibility to invest in very

long-term assets that are challenging to trade and value over short time horizons, such as large infrastructure projects. As a result, local regulators are able to more accurately reflect the return profile of these types of investments within their individual regulatory frameworks.

While the ICS doesn't restrict investments, the impact of a MAV-based standard on long-dated insurance liability products could impact the degree to which insurers look to longer-duration asset investments to match future liabilities. This, in turn, could have tangible impacts on the investments that insurers make in the U.S. economy. Each year, U.S. insurers' investments fund about \$120 billion of business investments in needed plants, equipment, and other capital expenditures.<sup>80</sup> Insurers both invest in less liquid bonds, providing liquidity to the overall bond market, and make up a sizeable share of fixed income holdings—21% of the corporate bond market and 20% of the municipal bond market.<sup>81</sup> This impact even carries over to industries such as agriculture, in which insurers invested about \$700 million in new agriculture mortgage loans in 2017 alone.<sup>82</sup>

## CONCLUSION

Capital standards are critical to the continued stability of the insurance industry. As the IAIS and other policymakers consider standards to ensure solvency across jurisdictions, it is important that these methods are consistent with regulatory objectives and the underlying business model of insurers and social needs of disparate markets.

Several market features are particularly relevant to this standard setting. In particular, insurance markets have a wide range of product offerings. This reflects underlying differences in the use of insurance across jurisdictions, the role that insurance plays in each market, and the presence or lack of effective national guarantee systems. As these underlying market features evolve—for example, as the U.S. long-term social safety net faces an aging workforce and additional beneficiaries—having a regulatory framework that allows regulators and insurers to adapt to these local market changes will enable insurers across all jurisdictions to continue to add value to their respective stakeholders.

Additionally, authorities considering the adoption of any capital standard will need to consider its impact on insurers' underlying business strategy. Given the importance of insurance investments in the capital markets and broader economy, an effective approach will need to allow for longer-term, less-liquid investments, which make up a vital part of the U.S. economy. These considerations are particularly relevant when considering the important societal role many of these investments play. Additionally, the ongoing competitive dynamics between international and local insurance competitors will need to inform policy decisions about capital standards to encourage effective competition between international insurers and domestic players.

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80. "The Role of Insurance Investments in the U.S. Economy," U.S. Chamber of Commerce, 2019.

81. "The Role of Insurance Investments in the U.S. Economy," U.S. Chamber of Commerce, 2019.

82. "The Role of Insurance Investments in the U.S. Economy," U.S. Chamber of Commerce, 2019.

# APPENDIX A

As mentioned in this paper, the aggregation method is still under development in the U.S. by the NAIC and the Federal Reserve Board. This effort involves defining a rigorous methodology for translating regulatory regimes between one another. Significant effort has already been made to develop a way to scale regulations between one another—the details of one such effort is illustrated below as an example.

The excess relative ratio approach uses market-level data on average insurer capitalization within an industry to measure the average capital held within a given market over and above the ratio at the first intervention level (calculated as (1) and (2) in the framework on the subsequent page). In this case, the scalar is then calculated as the ratio between the excess capital held in Country A relative to a given benchmark country (in this case, the U.S.). In this case, insurers in Country A hold about 14% of the benchmarked excess capital rate.

This scalar is then applied to both the numerator and denominator of the capital ratio (shown as (4) in the framework below). The denominator, which captures the minimum capital required, is calculated from the capital required in Country A for the life insurer in question, multiplied by the minimum capital requirements before a first intervention (which can vary by jurisdiction), and then finally scaled by the excess capital typically required within that jurisdiction. The numerator reflects the capital that the life insurer has available within the local jurisdiction, then is adjusted for required capital that would not have been applied under a different reserving framework. In practice, this adjustment is based on the difference between the calibration of the minimum capital requirement to the country's first intervention level and the scaling of the calibrated minimum required capital using the scalar. Dividing the numerator by the denominator gives the scaled capital ratio of this specific insurer. In this case, it is 1,296%. Comparing to the unscaled capital ratio of 400%, the scaled ratio makes the issuer appear better capitalized and is consistent with the level of conservatism that is built into the U.S. Life Insurance RBC formula.

FIGURE 27

## Illustrative scalar calculation

### Assumptions

#### U.S. Life Insurer – Aggregate Data

Total Adjusted Capital	\$495b
Company Action Level RBC	\$102b
Capital Ratio at the First Intervention Level	100%

#### Country A Life Insurer – Aggregate Data

Total Available Capital	\$83b
BRC	\$36b
Capital Ratio at the First Intervention Level	150%

#### One Life Insurer in Country A

Total Available Capital	\$1,367,463
BRC	\$341,866

### Scalar Calculation for Conversion between Country A and U.S.

$$\begin{aligned}
 \text{1 Country A Excess Capital Ratio} &= \frac{\text{Country A Capital Ratio} - \text{Country A First Intervention Level}}{\text{Country A First Intervention Level}} = \frac{\frac{83}{36} - 150\%}{150\%} = 54\% \\
 \text{2 U.S. Excess Capital Ratio} &= \frac{\text{U.S. Capital Ratio} - \text{U.S. First Intervention Level}}{\text{U.S. First Intervention Level}} = \frac{\frac{495}{102} - 100\%}{100\%} = 385\% \\
 \text{3 Scalar} &= \frac{\text{Country A Excess Capital Ratio}}{\text{U.S. Excess Capital Ratio}} = \frac{54\%}{385\%} = 14\%
 \end{aligned}$$

### Calculating Scaled Capital Ratio for Insurer in Country A

$$\begin{aligned}
 \text{4 Scaled Capital Ratio} &= \frac{\text{Insurer Total Available Capital} - (\text{Insurer BRC} * \text{Country A First Intervention Level}) * (1 - \text{Scalar})}{\text{Insurer BRC} * \text{Country A First Intervention Level} * \text{Scalar}} \\
 &= \frac{1,367,463 - (341,866 * 150\%) * (1 - 14\%)}{(341,866 * 150\%) * 14\%} \\
 &= 1,295\%
 \end{aligned}$$

The unscaled capital ratio for the same insurer is 400%



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