Annual Report on the Insurance Industry

FEDERAL INSURANCE OFFICE, U.S. DEPARTMENT OF THE TREASURY

Completed pursuant to Title V of the Dodd-Frank Wall Street Reform and Consumer Protection Act

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Glossary

ABA	....	Activities-Based Approach
ACRSM	....	Advisory Committee on Risk-Sharing Mechanisms
A&H	....	Accident and Health
AI	....	Artificial Intelligence
AM	....	Aggregation Method
API	....	Application Programming Interface
ART	....	Alternative Risk Transfer
CCPA	....	California Consumer Privacy Act
CDO	....	Collateralized Debt Obligations
CLO	....	Collateralized Loan Obligation
ComFrame	....	IAIS Common Framework for the Supervision of IAIGs
Council	....	Financial Stability Oversight Council
DG-FSMA	....	EU's Directorate-General for Financial Stability, Financial Services and Capital Markets Union
Dodd-Frank Act	....	Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010
EIOPA	....	European Insurance and Occupational Pensions Authority
ERISA	....	Employee Retirement Income Security Act of 1974
EU	....	European Union
FACI	....	Federal Advisory Committee on Insurance
Fannie Mae	....	Federal National Mortgage Association
FATF	....	Financial Action Task Force
FCTF	....	IAIS Financial Crime Task Force
Federal Reserve	....	Board of Governors of the Federal Reserve System
FEMA	....	Federal Emergency Management Agency
Fintech EO Report	....	Treasury, *A Financial System that Creates Economic Opportunities: Nonbank Financials, Fintech, and Innovation*
FIO	....	Federal Insurance Office
FIO Act	....	Federal Insurance Office Act of 2010
Freddie Mac	....	Federal Home Loan Mortgage Corporation
FSAP	....	International Monetary Authority Financial Sector Assessment Program
FSB	....	Financial Stability Board
FSTF	....	NAIC Financial Stability Task Force
GAAP Plus	....	Generally Accepted Accounting Principles with adjustments
GCC	....	Group Capital Calculation

GCCWG	....	NAIC Group Capital Calculation Working Group
GDPR	....	EU General Data Protection Regulation
Ginnie Mae	....	Government National Mortgage Association
G-SII	....	Global Systemically Important Insurer
Holistic Framework	....	IAIS Holistic Framework for Systemic Risk in the Insurance Sector
HUD	....	U.S. Department of Housing and Urban Development
IAIG	....	Internationally Active Insurance Group
IAIS	....	International Association of Insurance Supervisors
iCBCM	....	FSB Cross-Border Crisis Management Group for Insurers
ICP	....	IAIS Insurance Core Principle
ICS	....	IAIS Insurance Capital Standard
ILS	....	Insurance-Linked Securities
ILW	....	Industry Loss Warranty
Insurance EO Report	....	Treasury, *A Financial System That Creates Economic Opportunities: Asset Management and Insurance*
IoT	....	Internet of Things
IPO	....	Initial Public Offering
IPPC	....	OECD Insurance and Private Pensions Committee
IRDAI	....	Insurance Regulatory and Development Authority of India
L&H	....	Life and Health
LTCI	....	Long-Term Care Insurance
M&A	....	Mergers and Acquisitions
MAV	....	Market-Adjusted Valuation
MBS	....	Mortgage-Backed Securities
MGA	....	Managing General Agent
MitFLG	....	Mitigation Framework Leadership Group
MOU	....	Memorandum of Understanding between FIO and IRDAI
NAIC	....	National Association of Insurance Commissioners
NBCR	....	Nuclear, Biological, Chemical, and Radiological
NCOIL	....	National Council of Insurance Legislators
NFIP	....	National Flood Insurance Program
NYDFS	....	New York Department of Financial Services
OECD	....	Organisation for Economic Co-operation and Development
P&C	....	Property and Casualty
PBR	....	Principle-Based Reserving
PII	....	Personally Identifiable Information

RBC	....	Risk-Based Capital
Regulation BI	....	SEC Regulation Best Interest
Report	....	FIO, *2019 Annual Report on the Insurance Industry*
RESA	....	Retirement Enhancement and Savings Act of 2019
S&P 500	....	Standard and Poor's 500 Index
S&P Global	....	S&P Global Market Intelligence
SEC	....	U.S. Securities and Exchange Commission
Secretary	....	Secretary of the Treasury
SECURE Act	....	The Setting Every Community Up for Retirement Enhancement Act of 2019
SSAP	....	Statements of Statutory Accounting Principles
Team USA	....	FIO, Federal Reserve, NAIC, and state insurance regulators
Treasury	....	U.S. Department of the Treasury
Transparency Report	....	Treasury and Federal Reserve, *Efforts to Increase Transparency at Meetings of the International Association of insurance Supervisors*
TRIA	....	Terrorism Risk Insurance Act of 2002, as amended
TRIP	....	Terrorism Risk Insurance Program
TRIP Reauthorization Act	....	Terrorism Risk Insurance Program Reauthorization Act of 2015
TSP	....	Technology Service Provider
UK	....	United Kingdom
U.S.-EU Covered Agreement	....	Bilateral Agreement between the United States of America and the European Union on Prudential Measures Regarding Insurance and Reinsurance
U.S.-UK Covered Agreement	....	Bilateral Agreement between the United States of America and the United Kingdom on Prudential Measures Regarding Insurance and Reinsurance
USTR	....	Office of the United States Trade Representative

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I. INTRODUCTION

This Report is submitted by the Federal Insurance Office (FIO) of the U.S. Department of the Treasury (Treasury) pursuant to Section 502(a) of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (Dodd-Frank Act), which requires the annual submission of a report to the President, the Committee on Financial Services of the House of Representatives, and the Committee on Banking, Housing, and Urban Affairs of the Senate "on the insurance industry and any other information as deemed relevant by the Director [of the Federal Insurance Office] or requested by such Committees."[1]

A. The Structure of this Report

This Report begins with an overview of FIO's statutory responsibilities, then summarizes FIO's key activities since those described in its 2018 *Annual Report on the Insurance Industry*.[2] Sections II through V of this Report are organized around the four key themes from the Treasury report, *A Financial System That Creates Economic Opportunities: Asset Management and Insurance* (the Insurance EO Report):

1) the proper evaluation of systemic risk;
2) ensuring effective regulation and government processes;
3) rationalizing international engagement; and
4) promoting economic growth and informed choices.[3]

Each section presents developments in domestic and international insurance policy, regulation, and markets corresponding to that section's theme. This Report concludes with a discussion and analysis of the insurance industry's financial performance in calendar year 2018, its financial condition as of December 31, 2018, and the domestic insurance market outlook for 2019.

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[1] Federal Insurance Office Act of 2010 (FIO Act), 31 U.S.C. § 313(n)(2).

[2] FIO, *Annual Report on the Insurance Industry* (2018), https://www.treasury.gov/initiatives/fio/reports-and-notices/Documents/2018_FIO_Annual_Report.pdf (*2018 Annual Report*).

[3] Treasury, *A Financial System That Creates Economic Opportunities: Asset Management and Insurance* (2017), https://www.treasury.gov/press-center/press-releases/Documents/A-Financial-System-That-Creates-Economic-Opportunities-Asset_Management-Insurance.pdf. Treasury issued the Insurance EO Report in response to Executive Order No. 13772. Treasury issued three additional reports in response to this Executive Order, including Treasury, *A Financial System that Creates Economic Opportunities: Nonbank Financials, Fintech, and Innovation* (2018), https://home.treasury.gov/sites/default/files/2018-08/A-Financial-System-that-Creates-Economic-Opportunities---Nonbank-Financials-Fintech-and-Innovation.pdf. *See also* FIO, *2018 Annual Report* (summarizing the Executive Order, its Core Principles for Financial Regulation, and the Insurance EO Report recommendations relating to insurance).

B. Federal Insurance Office

1. Insurance Regulation and the Federal Insurance Office

In the United States, the primary regulators of the business of insurance are the fifty states, the District of Columbia, and the five U.S. territories.[4]

The federal government also plays an important role in the insurance sector.[5] Title V of the Dodd-Frank Act established FIO within Treasury.[6] In addition to advising the Secretary on major domestic and prudential international insurance policy issues and having its Director serve as a non-voting member of the Financial Stability Oversight Council (Council), FIO is authorized to:

- monitor all aspects of the insurance industry, including identifying issues or gaps in the regulation of insurers that could contribute to a systemic crisis in the insurance industry or the U.S. financial system;
- monitor the extent to which traditionally-underserved communities and consumers, minorities, and low- and moderate-income persons have access to affordable insurance products regarding all lines of insurance, except health insurance;
- recommend to the Council that it designate an insurer, including the affiliates of such insurer, as an entity subject to regulation as a nonbank financial company supervised by the Board of Governors of the Federal Reserve System (Federal Reserve);
- assist the Secretary in the administration of the Terrorism Risk Insurance Program (TRIP), as established in Treasury under the Terrorism Risk Insurance Act of 2002, as amended (TRIA);
- coordinate federal efforts and develop federal policy on prudential aspects of international insurance matters, including representing the United States, as appropriate, in the International Association of Insurance Supervisors (IAIS) and assisting the Secretary in negotiating covered agreements;
- determine whether state insurance measures are preempted by covered agreements;

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[4] State regulation of the insurance industry is coordinated through the National Association of Insurance Commissioners (NAIC), a voluntary organization whose membership consists of the chief insurance regulatory officials of the 50 states, the District of Columbia, and the five U.S. territories.

[5] *See* Treasury, *Insurance EO Report*, 82-90.

[6] FIO Act, 31 U.S.C. § 313(a). Title V also designates the Secretary of the Treasury (Secretary) as advisor to the President on “major domestic and international prudential policy issues in connection with all lines of insurance except health insurance.” *Id.* at § 321(a)(9).

- consult with the states (including state insurance regulators) regarding insurance matters of national importance and prudential insurance matters of international importance; and
- perform such other related duties and authorities as may be assigned to FIO by the Secretary.[7]

In addition, before the Secretary may make a determination as to whether to seek the appointment of the Federal Deposit Insurance Corporation as receiver of an insurer under Title II of the Dodd-Frank Act, the Secretary must first receive a written recommendation from the FIO Director and the Federal Reserve.[8] Additionally, FIO and the Federal Reserve coordinate on the performance of annual analyses of nonbank financial companies supervised by the Federal Reserve, particularly with respect to stress testing, to evaluate whether such companies have the capital, on a consolidated basis, necessary to absorb losses as a result of adverse economic conditions.[9]

The Economic Growth, Regulatory Relief, and Consumer Protection Act, signed into law on May 24, 2018, directs the Secretary of the Treasury and the Federal Reserve Chairman (or their designees) to submit an annual report to Congress on their efforts with respect to global insurance regulatory or supervisory forums.[10] The Act also requires the Secretary and Federal Reserve Chairman (or their designees) to report to Congress on their efforts to increase transparency at IAIS meetings.[11] In addition, the Act requires that, before supporting or consenting to the adoption of any final international insurance capital standard, the Secretary, the Federal Reserve Chairman, and the FIO Director also must complete a study and submit a report to Congress on the impact of any such standard on consumers and U.S. markets.[12]

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[7] FIO Act, 31 U.S.C. § 313(c)(1).

[8] Dodd-Frank Act, 12 U.S.C. § 5383(a)(1)(C).

[9] 12 U.S.C. § 5365(i)(1)(A).

[10] Economic Growth, Regulatory Relief, and Consumer Protection Act, Pub. L. No. 115-174, § 211(c)(1)(A), 132 Stat. 1296 (2018).

[11] Economic Growth, Regulatory Relief, and Consumer Protection Act, § 211(c)(4). The Act also establishes an Insurance Policy Advisory Committee at the Federal Reserve. *See id.* at § 211(b).

[12] Economic Growth, Regulatory Relief, and Consumer Protection Act, § 211(c)(3)(A). The Act further includes a Congressional finding that before taking a position on any global insurance regulatory or supervisory proposal, the Secretary, the Federal Reserve, and the FIO Director shall "achieve consensus positions with State insurance regulators through the" NAIC. *Id.* at § 211(a)(2). When signing the Act into law, the President issued a statement noting: "These directives contravene my exclusive constitutional authority to determine the time, scope, and objectives of international negotiations. My Administration will give careful and respectful consideration to the preferences expressed by the Congress in section 211(a) and will consult with State officials as appropriate, but will implement this section in a manner consistent with my constitutional authority to conduct foreign relations." President Donald J. Trump, *Statement by President Donald J. Trump on S. 2155* (May 24, 2018), https://www.whitehouse.gov/briefings-statements/statement-president-donald-j-trump-s-2155/.

2. FIO Activities

A summary of FIO activities during the period covered by this Report (some of which are further detailed later in this Report) is provided below.

On July 31, 2018, the U.S. Department of the Treasury issued a report, *A Financial System That Creates Economic Opportunities: Nonbank Financials, Fintech, and Innovation* (the Fintech EO Report). FIO contributed to the Fintech EO Report, which identified improvements to the regulatory landscape that will better support nonbank financial institutions, embrace financial technology, and foster innovation.[13] Among other recommendations, the Fintech EO Report charged FIO to work closely with state insurance regulators, the NAIC, and federal agencies on InsurTech issues.[14] The Fintech EO Report and FIO's work on InsurTech-related issues are discussed in Section V.D of this Report.

On August 1, 2018, the Federal Emergency Management Agency (FEMA) expanded its reinsurance program by transferring $500 million in flood risk through reinsurance secured through the capital markets.[15] FIO assisted FEMA on both this transaction and other reinsurance placements in connection with the National Flood Insurance Program (NFIP). FEMA's reinsurance transactions are discussed in Section III.A.2.d of this Report.

On August 16, 2018, Treasury hosted a cybersecurity tabletop exercise with large insurers on cybersecurity, with a focus on third-party risk. FIO also participated in a subsequent joint Treasury and NAIC regional cybersecurity exercise on February 27, 2019, in Columbia, South Carolina. Insurance industry cybersecurity, and related FIO activities, are discussed in Section III.C.2 of this Report.

On September 12, 2018, FIO participated in the U.S.-UK financial regulatory dialogue, which discussed insurance regulatory issues, including issues related to the withdrawal of the United Kingdom (UK) from the European Union (EU). Further information regarding FIO's work with the United Kingdom, including the U.S.-UK Insurance Project, is available in Section IV.C.2 of this Report. The U.S.-UK Covered Agreement is discussed below and in Section IV.B.2 of this Report.

The Federal Advisory Committee on Insurance (FACI), which provides advice and recommendations to FIO in performing its duties and authorities, convened on September 18, 2018, April 18, 2019, and June 18, 2019. These meetings addressed a variety of topics,

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[13] *See, e.g.*, Treasury, "Treasury Releases Report on Nonbank Financials, Fintech, and Innovation," news release, July 31, 2018, https://home.treasury.gov/news/press-releases/sm447.

[14] *See* Treasury, *Fintech EO Report*, 144.

[15] *See, e.g.*, FEMA, "FEMA Expands its Reinsurance Program by Transferring $500 Million in Flood Risk to Capital Markets," news release, July 31, 2018, https://www.fema.gov/news-release/2018/07/31/fema-expands-its-reinsurance-program-transferring-500-million-flood-risk.

including re-establishment of the FACI subcommittees and setting FACI's priorities for 2019.[16] The FACI and the re-establishment of its subcommittees is further discussed in Section III.A.4 of this Report.

On September 25 and 26, 2018, FIO attended the Insurance Forum 2018, in the framework of the G-20, in San Carlos de Bariloche, Argentina. The Superintedencia de Seguros de la Nación organized the Insurance Forum in order to discuss the importance of insurance and the protection of policyholders given emerging risks throughout the world.[17]

On November 8, 2018, at the IAIS Annual General Meeting in Luxembourg, the IAIS approved FIO having a permanent membership on its Executive Committee. FIO's work at the IAIS is discussed in more detail in Section II.B and Section IV.A of this Report.

FIO also has continued its work with the EU-U.S. Insurance Project. On November 10, 2018, the Steering Committee of the EU-U.S. Insurance Project hosted a public event in Luxembourg. The public event discussed challenges and opportunities for the insurance sector in the United States and EU related to cybersecurity risks and the cyber insurance market, the use of big data, and intra-group transactions. The EU-U.S. Insurance Project is further discussed in Section IV.C.1 of this Report.

On November 19, 2018, Treasury and the Federal Reserve issued a joint report, *Efforts to Increase Transparency at Meetings of the International Association of Insurance Supervisors* (Transparency Report), as required by the Economic Growth, Regulatory Relief, and Consumer Protection Act.[18] The Transparency Report is discussed in Section IV.A.5 of this Report.

On December 11, 2018, Treasury and the Office of the U.S. Trade Representative (USTR) announced the intention of the United States to sign the Bilateral Agreement between the United States of America and the United Kingdom on Prudential Measures Regarding Insurance and Reinsurance (U.S.-UK Covered Agreement). The United States and the UK signed the agreement on December 18, 2018. Treasury and USTR also issued a U.S. policy statement regarding the agreement's implementation. Developments concerning the U.S.-UK Covered Agreement are discussed in Section IV.B of this Report.

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[16] More information on FACI—including its meeting agendas, minutes, and presentations—is available on FIO's website. *See* "Initiatives: Federal Advisory Committee on Insurance (FACI)," Treasury, last updated August 28, 2019, https://www.treasury.gov/initiatives/fio/Pages/faci.aspx.

[17] *See also* Superintendencia de Seguros de la Nación, *The Insurance Regulators Forum in Bariloche—2018* (September 25, 2018), https://naic.org/documents/index_181002_regulators_forum_short_statement_for_g20_finance_ministers.pdf.

[18] Treasury and Federal Reserve, *Efforts to Increase Transparency at Meetings of the International Association of Insurance Supervisors* (2018), https://www.treasury.gov/initiatives/fio/reports-and-notices/Documents/2018_IAIS_Transparency_Report.pdf.

FIO staff continued to participate in the quarterly meetings of the Mitigation Framework Leadership Group (MitFLG), including the meetings on July 26, 2018, October 19, 2018, and May 17, 2019.[19] MitFLG and the National Mitigation Investment Strategy are discussed in Section III.A.2.c of this Report.

On April 2, 2019, Treasury and USTR held the second Joint Committee Meeting for the Bilateral Agreement between the United States of America and the European Union on Prudential Measures Regarding Insurance and Reinsurance (U.S.-EU Covered Agreement).[20] At this meeting, participants on both sides provided updates regarding the implementation of the agreement on reinsurance, group supervision and exchange of information, and discussed procedural aspects of the Joint Committee. Developments concerning the U.S.-EU Covered Agreement are discussed in Section IV.B of this Report.

As part of its ongoing commitment to improve coordination with the U.S. members of the IAIS, on May 1, 2019, FIO hosted a stakeholder session on IAIS work at Treasury with representatives from the members of "Team USA": FIO; state insurance regulators; the NAIC; and the Federal Reserve. The topics addressed included the development of the Insurance Capital Standard (ICS), and the development of the IAIS's Holistic Framework for Systemic Risk in the Insurance Sector (Holistic Framework; also referred to as the activities-based approach (ABA)). Throughout 2018 and 2019, FIO has continued to coordinate efforts on international insurance matters to ensure that U.S. stakeholders have regular opportunities to meet and work with all of Team USA. FIO's and the Federal Reserve's efforts to increase transparency at the IAIS are discussed in Section IV.A.5 of this Report.

On May 13, 2019, Secretary Steven T. Mnuchin gave remarks at the NAIC International Forum.[21] Secretary Mnuchin discussed Treasury's international work and other important global issues facing the insurance sector including the international standard-setting work at the IAIS, its development of an ICS, and its proposed holistic framework for assessing and mitigating systemic risk in the insurance sector. He also discussed Treasury's work with USTR on the Covered Agreements with the European Union and the United Kingdom.

On June 28, 2019, FIO issued its study of Small Insurer Competitiveness in the Terrorism Risk Insurance Marketplace, as required by the Terrorism Risk Insurance Program Reauthorization

[19] There was no MitFLG meeting in the first quarter of 2019 due to the partial shutdown of the federal government.

[20] Treasury, "Second Joint Committee Meeting under the Bilateral Agreement between the United States of America and the European Union on Prudential Measures Regarding Insurance and Reinsurance," news release, April 12, 2019, https://home.treasury.gov/news/press-releases/sm652.

[21] Treasury, "Remarks by Treasury Secretary Steven T. Mnuchin at the National Association of Insurance Commissioners International Forum," news release, May 13, 2019, https://home.treasury.gov/news/press-releases/sm688 (Secretary Mnuchin International Forum Remarks).

Act of 2015 (TRIP Reauthorization Act).[22] On August 12, 2019, the Advisory Committee on Risk-Sharing Mechanisms (ACRSM) held a meeting that discussed future ACRSM activities and provided an update on the insurance, reinsurance and capital markets involvement in terrorism risk insurance. TRIP and the ACRSM also are discussed in Section III.B of this Report.[23]

FIO participated in the U.S.-India Financial Regulatory Dialogue in Washington, D.C. on August 26-27, 2019. The Dialogue is an annual meeting between U.S. financial services regulators and their Indian counterparts to share information and perspectives on key regulatory issues. At this meeting, FIO and the Insurance Regulatory and Development Authority of India (IRDAI) signed a memorandum of understanding (MOU). The MOU provides a framework for cooperation and coordination, including for the exchange, handling, protection and return of information, and, when appropriate, investigative assistance with respect to FIO and IRDAI responsibilities. The MOU is discussed in more detail in Section IV.F of this Report.

Throughout 2018 and 2019, FIO continued to provide expertise to other Treasury offices and other federal agencies, as discussed in Section III.A.1 of this Report. For example, FIO assisted FEMA on reinsurance and alternative risk instruments in connection with the NFIP, as noted above and discussed in further detail in Section III.A.2.d of this Report. FIO also participated in the federal inter-agency task force on long-term care insurance (LTCI), which is discussed in more detail in Section V.C of this Report.

FIO also regularly interacted with stakeholders on a variety of issues throughout 2018 and 2019. Section V.D of this Report describes FIO's stakeholder outreach on InsurTech, for example.

In addition, throughout 2018 and 2019, FIO has continued to fulfill its statutory role representing the United States in the IAIS and elsewhere on prudential international insurance measures. FIO was actively involved on IAIS work in developing the Common Framework for the Supervision of Internationally Active Insurance Groups (ComFrame), an ICS (as discussed in more detail in Section II.B.1 of this Report), and the Holistic Framework. FIO also continued its involvement and leadership roles with working groups and task forces at the IAIS on a variety of issues, including matters relating to resolution of insurers, financial crimes, cybersecurity, and advancing effective corporate governance in the insurance sector, as described in more detail in Section IV.A of this Report.

Internationally, FIO also remains engaged in the Insurance and Private Pensions Committee (IPPC) at the Organisation for Economic Co-operation and Development (OECD). The OECD

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[22] FIO, *Study of Small Insurer Competitiveness in the Terrorism Risk Insurance Marketplace* (2019), https://www.treasury.gov/initiatives/fio/reports-and-notices/Documents/2019_TRIP_SmallInsurer_Report.pdf (*2019 TRIP Small Insurer Report*).

[23] More information on the ACRSM—including its meeting agendas, minutes, and presentations—is available on FIO's website. *See* "Advisory Committee on Risk-Sharing Mechanisms (ACRSM)," Treasury, last updated September 17, 2019, https://www.treasury.gov/initiatives/fio/acrsm/Pages/default.aspx.

serves as a source of advice for the G-20 and the public on various policymaking and implementation matters, and collects and publishes statistical data and analyses on various topics.[24] FIO's work in the OECD is discussed in more detail in Section IV.E of this Report.

[24] *See* OECD, *Secretary-General's Report to Ministers 2018* (2018), 16, http://www.oecd.org/publications/secretary-general-s-report-to-ministers-22223843.htm.

II. SYSTEMIC RISK AND SOLVENCY

Section II of this Report describes selected domestic developments relating to systemic risk and solvency, including updates on the NAIC Group Capital Calculation, the Federal Reserve's Building Block Approach, the NAIC Macro Prudential Initiative, and Council designations and interpretive guidance. The Section then discusses international developments, including the IAIS's development of an ICS and the Holistic Framework. FIO's other international engagement is discussed in Section IV of this Report. As detailed below, Treasury is committed to continued engagement in international forums to ensure the U.S. regulatory framework is appropriately reflected and that U.S. interests are appropriately advanced in these forums.

A. Domestic Developments

1. NAIC Group Capital Calculation

In April 2016, the NAIC Executive Committee and Plenary adopted as a charge to the Financial Condition Committee that it (1) construct a group capital calculation (GCC) using a Risk-Based Capital (RBC) aggregation methodology, and (2) liaise with the NAIC's ComFrame Development and Analysis Working Group on international capital developments and consider group capital developments by the Federal Reserve to help inform its construction of a U.S. group capital calculation.[25] The Group Capital Calculation Working Group (GCCWG) was formed and charged with constructing a GCC, using a RBC aggregation methodology, as an assessment tool for state regulators in providing a baseline quantitative measure for group risks.[26]

The NAIC has stated that it intends for the GCC to be an analytical tool to provide a baseline quantitative measure for group risks.[27] As such, it is to be one of many tools available to regulators to employ in understanding risks. The NAIC has also stated that an objective of the GCC is to provide a coherent, analytical framework of the financial position of affiliated business entities. By delivering a holistic, transparent view of the interconnectedness, business activities, and capital support surrounding the insurance group, the NAIC intends for the GCC to

[25] *See* NAIC, *Spring Volume I 2016 Proceedings of the National Association of Insurance Commissioners* (April 2016), 2-21, 2-32, https://www.naic.org/prod_serv/PRC-ZS-2016_combined.pdf. The NAIC's ComFrame Development and Analysis Working Group proposed this charge in October 2015. *See* NAIC, *NAIC Group Capital Calculation Recommendation: Adopted by the ComFrame Development and Analysis (G) Working Group Oct. 30, 2015, Adopted by the International Insurance Relations (G) Committee – Nov. 19, 2015* (2015), https://www.naic.org/documents/committees_e_grp_capital_wg_related_cap_calc_reccomendation.pdf.

[26] *See* NAIC, *2016 Proceedings of the NAIC*, 2-21, 2-32.

[27] NAIC, "Field Testing for NAIC Group Capital Calculation Underway," news release, June 18, 2019, https://www.naic.org/Releases/2019_docs/field_testing_for_naic_group_capital_calcuation_underway.htm.

assist regulators with taking informed and appropriate action in response to potential risks arising from other parts of the holding company system.[28]

The NAIC's field testing of the GCC started in May 2019 with 33 U.S.-based volunteer firms across 15 states participating, including property and casualty (P&C), life, and health insurers. Volunteer firms received a data template and technical specifications, requesting data as of year-end 2018, to be submitted by August 2019. The analysis of field testing submissions is targeted for completion in early to mid-October 2019. Field testing results will inform the final calculation, which the NAIC has stated it expects to adopt in 2020.[29]

For the 2019 field testing, the NAIC incorporated revisions to the GCC template in order to address specific issues that continue to remain under discussion in the GCC's development. This includes: the treatment of non-admitted entities; the additional allowance for senior debt as a capital resource; the treatment of XXX/AXXX captives; materiality thresholds including which entities to exclude from the scope of application; the treatment of subordinated debt including the testing of options that recognize various levels of capital instruments as available capital; the selection of scalars for non-U.S. insurers; and the calibration level of the inputs to the GCC including the use of scalars.[30]

The NAIC first introduced the concept of scalars in an attempt to address the issue of comparability of accounting systems and capital requirements across various insurance regulatory jurisdictions. These scalars aim to scale capital requirements imposed on non-U.S. insurers as a basis for comparison to the RBC-based requirement used in the United States. The NAIC is currently reviewing two scalar approaches for non-U.S. insurers. The first method, referred to as the Relative Ratio Approach, adjusts the capital requirement of a non-U.S. insurer in the group by applying a scalar to the non-U.S. insurance entity's capital requirement as determined by local regulatory authorities. It compares the average capital ratios of non-U.S. insurers to capital required at the first intervention level under the RBC system.[31] The second approach, referred to as the Excess Capital Ratio, adjusts both available capital and required capital. This approach evaluates the ratio of excess capital carried over the first intervention level requirement. Volunteer groups field tested both of these scalar approaches in 2019.[32]

Stakeholders have also raised other issues with the GCC, including the complexity of the de-stacking of financial entities required in the calculation, as well as the confidentiality

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[28] NAIC, "Field Testing for NAIC Group Capital Calculation Underway."

[29] NAIC, "Field Testing for NAIC Group Capital Calculation Underway."

[30] NAIC, "GCCWG—Field Testing Kick-Off Presentation" (presentation, NAIC, May 9, 2019 et seq.), https://naic-cms.org/sites/default/files/inline-files/cmte_e_grp_capital_wg_field_testing_2019_kickoff.pdf.

[31] Scalars will be applied using the RBC Trend Test threshold 300% x Authorized Control Level RBC as the first intervention level.

[32] NAIC, *NAIC Group Capital Calculation Field Testing Instructions* (June 2019), https://www.naic.org/documents/cmte_e_grp_capital_wg_field_testing_2019_instructions_clean.pdf.

protections during the development of the GCC.[33] In August 2019, the GCCWG discussed the need for appropriate confidentiality protections for the GCC after its potential adoption by the NAIC.[34] Stakeholders have voiced concerns about voluntary disclosure of GCC results to third parties, such as rating agencies and underwriters.

2. Federal Reserve Building Block Approach

In June 2016, the Federal Reserve published an advance notice of proposed rulemaking (ANPR) on Capital Requirements for Supervised Institutions Significantly Engaged in Insurance Activities.[35] The ANPR invited comment on two approaches to group capital requirements: (1) a "building block approach" (BBA) that uses existing legal entity capital requirements as the basis for measuring insurance depository institution holding companies (e.g., savings and loans holding companies); and (2) a "consolidated approach" for insurance companies designated by the Council. There are currently no Council-designated insurers, but the insurance thrift holding companies supervised by the Federal Reserve represent approximately 10 percent of U.S. insurance industry assets.[36]

Since the issuance of the ANPR in 2016, the Federal Reserve has continued to work on the BBA. In January 2019, Federal Reserve Vice Chairman for Supervision Randal Quarles delivered a speech on insurance supervision and international engagement that included comments on the Federal Reserve's work on its domestic capital rules for Federal Reserve-supervised U.S. insurers, as well as the international standard setting process. While the Federal Reserve's proposed BBA is conceptually similar to the aggregation approach, or GCC, being developed by the NAIC and state regulators (discussed in Section II.A.1 of this Report), it was noted that the BBA will not make adjustments for permitted and/or prescribed accounting practices granted to individual insurers by their respective regulators.[37]

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[33] NAIC, *Draft Minutes of the Financial Condition (E) Committee* (August 5, 2019), https://naic.org/meetings1908/e_cmte.pdf.

[34] NAIC, *Draft Minutes of the NAIC Group Capital Calculation (E) Working Group* (August 2, 2019), https://naic.org/meetings1908/e_cmte.pdf (attachment two).

[35] Capital Requirements for Supervised Institutions Significantly Engaged in Insurance Activities, 81 Fed. Reg. 38631 (June 14, 2016), https://www.federalregister.gov/documents/2016/06/14/2016-14004/capital-requirements-for-supervised-institutions-significantly-engaged-in-insurance-activities.

[36] *See* Randal K. Quarles, "Insurance Supervision and International Engagement" (speech, American Council of Life Insurers Executive Roundtable, Naples, FL, January 9, 2019), 3, https://www.federalreserve.gov/newsevents/speech/files/quarles20190109a.pdf (Quarles ACLI Speech).

[37] Quarles ACLI Speech, 4. Permitted and/or prescribed accounting practices are accounting adjustments that deviate from NAIC Statutory Accounting Principles that state regulators grant on a case-by-case basis for insurers domiciled within the granting state.

On September 6, 2019, the Federal Reserve announced that it was inviting public comment on its proposed BBA.[38] In its September notice, the Federal Reserve builds on the BBA discussion in its June 2016 ANPR to establish an enterprise-wide capital requirement for depository institution holding companies with significant insurance activities.[39] The proposed BBA would group entities by their respective capital frameworks, creating building blocks within a corporate structure. By reflecting the legal entity capital positions within the building blocks, the proposed BBA would then translate the building blocks into a common standard with the use of scalars before stacking them to arrive at an aggregated enterprise level of available capital and required capital.[40] The resulting BBA ratio of available to required capital would be based on equivalent values because the scalars would adjust for variations between different state-based insurance capital requirements and bank capital requirements. The BBA ratio would be subject to a required minimum of 250 percent and a capital buffer of 235 percent, resulting in a proposed total requirement of 485 percent. Finally, the September notice indicates that the Federal Reserve intends to conduct a quantitative impact study of the BBA to inform and shape the final framework.

In its October 2017 Insurance EO Report, Treasury recommended that the group capital initiatives by the NAIC, the states, and the Federal Reserve should be harmonized, to the extent possible, to mitigate duplicative and unnecessary regulatory burdens for U.S. insurers.[41] Vice Chairman Quarles noted that Federal Reserve staff has been working closely with state regulators and the NAIC to help achieve consistency between the two approaches. Given the more limited number of firms currently under Federal Reserve supervision than those supervised by the U.S. states, any final BBA capital standard will likely not have to address some of the issues currently being considered by the U.S. states, e.g., international scalars, scope and purpose of the standard, and reinsurance captives.

[38] Federal Reserve, "Federal Reserve Board Invites Public Comment on Proposal to Establish Capital Requirements for Certain Insurance Companies Supervised by the Board," news release, September 6, 2019, https://www.federalreserve.gov/newsevents/pressreleases/bcreg20190906a.htm.

[39] Depository institution holding companies that are significantly engaged in insurance activities under the Federal Reserve's supervision currently consists of savings and loan holding companies only. The Federal Reserve intends to address the application of this approach to bank holding companies in the final rule.

[40] Because the Federal Reserve's current population of supervised insurance groups has no material international insurance operations, scalars have only been developed for domestic application. Federal Reserve, *Comparing Capital Requirements in Different Regulatory Frameworks* (2019), 1, https://www.federalreserve.gov/newsevents/pressreleases/files/bcreg20190906a1.pdf.

[41] Treasury, *Insurance EO Report*, 100.

3. NAIC Macro Prudential Initiative

In August 2017, the NAIC launched its Macro Prudential Initiative as part of the work of its Financial Stability Task Force (FSTF).[42] Under the Macro Prudential Initiative, the NAIC is undertaking a comprehensive review of state insurance regulators' "toolbox," assessing what existing data, metrics, and analyses are available to support macroprudential monitoring, and what enhancements or additions might be needed to serve this purpose.[43]

The FSTF established the Liquidity Assessment Subgroup in September 2017. After identifying existing data related to liquidity risk, the Subgroup published proposals to modify NAIC financial statement reporting forms (also known as blanks) to address data gaps and concerns.[44] Effective with the 2019 statutory life annual statements (to be filed in March 2020), state insurance regulators, through the NAIC, adopted a number of reporting changes requesting data that provide additional detail in product category reporting.[45] The new data include additional details on annuity reserves and deposit type liabilities, withdrawal amounts and characteristics, as well as additional granularity on L&H operations by lines of business. State insurance regulators performed a data call in 2019 to obtain such information based on the 2018 filings. The Subgroup formed an informal study group of state regulators, five insurance groups, and NAIC staff, which met for the first time in March 2019. This study group is exploring: (1) questions that the stress test should answer; (2) initial thoughts on liquidity stress test scenarios; (3) the time horizons for the liquidity stress test; and (4) which entities within the group should be included in the liquidity stress test.[46]

The FSTF referred to the Receivership and Insolvency Task Force certain requests for analysis of resolution and recovery concerns important to financial stability as part of the Macro Prudential Initiative.[47] The Receivership and Insolvency Task Force continues to work to address the issues identified by the FSTF. In an April 2019 update to the FSTF, the Receivership and Insolvency Task Force reported that current laws, regulations and guidance cover the recommendations of the Financial Stability Board's (FSB) "Key Attributes of Effective Resolution Regimes for

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[42] NAIC, *NAIC Financial Stability (EX) Task Force Macro Prudential Initiative (MPI): A Proposed Framework* (August 1, 2017), 2, https://www.naic.org/documents/cmte_ex_financial_stability_tf_macro_prudential_initiatives.pdf.

[43] For more discussion of the formation and goals of the Macro Prudential Initiative, *see* FIO, *2018 Annual Report*, 16-17.

[44] NAIC, *2017 Proceedings of the National Association of Insurance Commissioners: 2017 Fall National Meeting* (December 2-4, 2017), 4-21, https://www.naic.org/prod_serv/PRC-ZS-17-03_Combined.pdf.

[45] "Key Initiative: Macroprudential Initiative (MPI)," NAIC, last updated September 9, 2019, https://www.naic.org/cipr_topics/topic_macro.htm.

[46] NAIC, *Draft Minutes of the Financial Stability (EX) Task Force* (April 8, 2019), 1-2, https://naic-cms.org/sites/default/files/national_meeting/Materials.pdf.

[47] NAIC, *Draft Minutes of Financial Stability Task Force*, 2. *See also* NAIC, *2017 Proceedings*, 4-22; FIO, *2018 Annual Report*, 16-17.

Financial Institutions" and the IAIS's Insurance Core Principles (ICPs) and ComFrame. However, "few states have adopted the latest receivership laws, and several issues were identified: 1) the *Receiver's Handbook for Insurance Company Insolvencies* may need to be amended for circumstances where a bridge institution is needed; 2) continuity of essential services of non-regulated entities; and 3) variance of state receivership laws."[48]

4. Financial Stability Oversight Council Designations

The Dodd-Frank Act established the Council and charged it, among other functions, with: (1) identifying risks to the financial stability of the United States; (2) promoting market discipline; and (3) responding to emerging threats to the stability of the United States financial system.[49]

On October 17, 2018, the Council announced that it had unanimously approved the rescission of its previous determination that material financial distress at Prudential Financial, Inc. could pose a threat to U.S. financial stability and that Prudential shall be subject to supervision by the Federal Reserve and enhanced prudential standards.[50] The Council reevaluated the extent to which material financial distress at Prudential could be transmitted to other financial firms and markets and thereby pose a threat to U.S. financial stability through "three transmission channels: (1) the exposures of creditors, counterparties, investors, and other market participants to Prudential; (2) the liquidation of assets by Prudential, which could trigger a fall in asset price and thereby could significantly disrupt trading or funding in key markets or cause significant losses or funding problems for other firms with similar holdings; and (3) the inability or unwillingness of Prudential to provide a critical function or service relied upon by market participants and for which there are no ready substitutes."[51] In its reevaluation, the Council identified several factors in connection with each of the three transmission channels that "materially affect the Council's conclusions with respect to the extent to which Prudential's material financial distress could pose a threat to U.S. financial stability."[52]

On March 6, 2019, the Council unanimously voted to propose changes to its interpretive guidance regarding nonbank financial company designations.[53] Under the proposed guidance, the Council would prioritize an activities-based approach —rather than an entity-based approach—to identifying, assessing and mitigating potential risks to U.S. financial stability while

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[48] NAIC, *Draft Minutes of Financial Stability Task Force*, 2.

[49] 12 U.S.C. § 5322(a)(1).

[50] Treasury, "Financial Stability Oversight Council Announces Rescission of Nonbank Financial Company Designation," news release, October 17, 2018, https://home.treasury.gov/news/press-releases/sm525.

[51] Treasury, *Notice and Explanation of the Basis for the Financial Stability Oversight Council's Rescission of Its Determination Regarding Prudential Financial, Inc. (Prudential)* (October 16, 2018), 3-4, https://home.treasury.gov/system/files/261/Prudential-Financial-Inc-Rescission.pdf (*Prudential Rescission Notice*).

[52] Treasury, *Prudential Rescission Notice*, 7.

[53] Treasury, "Financial Stability Oversight Council Proposes Changes to Nonbank Designations Guidance," news release, March 6, 2019, https://home.treasury.gov/news/press-releases/sm621.

also enhancing the analytical rigor and transparency of the Council's process to determine whether to designate a nonbank financial company for supervision by the Federal Reserve.

The proposed guidance reflects two priorities: (1) identifying and addressing, in consultation with relevant financial regulatory authorities, potential risks and emerging threats on a system-wide basis, thereby reducing the potential for competitive distortions among companies and in markets that arise from entity-specific regulation and supervision, and (2) allowing relevant financial regulatory agencies, which generally possess greater information and expertise with respect to company, product, and market risks, to address potential risks, rather than subjecting the companies to new regulatory authorities. The Council would pursue an entity-specific determination only if a potential risk or threat cannot be addressed through an activities-based approach.

In addition, the proposed guidance would substantially transform the Council's existing nonbank financial company designation procedures.[54] The following are high-level descriptions of several of the proposed changes:

- In the event the Council considers a nonbank financial company for a potential determination that it will be subject to supervision by the Federal Reserve and prudential standards under section 113 of the Dodd-Frank Act, the proposed guidance includes a new proposal that the Council perform a cost-benefit analysis before making a determination.
- The proposed guidance provides that the Council will assess the likelihood of a nonbank financial company's material financial distress when evaluating the firm for a potential designation.
- The proposed guidance condenses the current three-stage process for a determination under section 113 into two stages, by eliminating the current stage 1.[55]
- The proposed guidance further enhances the new, two-stage determination process by making numerous procedural improvements, including several which are intended to facilitate the Council's transparency and engagement with companies and their primary regulators. Among other things, by making a company aware early in the review process of potential risks the Council has identified, the Council seeks to give the company more information and tools to mitigate those risks prior to any Council designation, thus providing a potential pre-designation "off-ramp."

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[54] Authority to Require Supervision and Regulation of Certain Nonbank Financial Companies, 84 Fed. Reg. 9028 (March 13, 2019), https://home.treasury.gov/system/files/261/Notice-of-Proposed-Interpretive-Guidance.pdf.

[55] The current stage 1 applies a set of uniform quantitative metrics to a broad group of nonbank financial companies in order to identify nonbank financial companies for further evaluation and to provide clarity for other nonbank financial companies that will likely will not be subject to evaluation for a potential designation.

- The proposed guidance includes procedures intended to clarify the post-designation "off-ramp." The proposed guidance indicates that, except where new material risks arise over time, if a company adequately addresses the potential risks identified in writing by the Council at the time of the final determination and in subsequent reevaluations, the Council should generally be expected to rescind the determination.[56]

The proposed guidance is designed to "enhance the Council's engagement with companies, regulators, and other stakeholders. By issuing clear and transparent guidance, the Council seeks to provide the public with sufficient information to understand the Council's concerns regarding risks to financial stability, while appropriately protection information submitted by companies and regulators to the Council."[57] The 60-day public comment period for the proposed guidance concluded on May 13, 2019.

B. International Developments

1. Development of an International Insurance Capital Standard for Insurance Groups

a) ICS Background

As insurance markets become increasingly global, it becomes more important for regulators across jurisdictions to find a common foundation that can assist with assessing the financial safety and soundness of insurance groups with cross-border operations. As U.S. insurance companies compete globally and increasingly look overseas for growth opportunities, the federal government's participation in various international forums is crucial to ensuring the U.S. insurance sector and U.S. companies remain internationally competitive, while ensuring that international standards do not inappropriately affect U.S. insurance companies or the domestic insurance market. It is important that the United States speak with the authority of the national government when addressing key international insurance matters during any international engagement.

It is important to note that international standards are not, in and of themselves, binding in the United States unless they are adopted as law through domestic processes at the state or federal level. It is critical that the United States engage with its counterparts through international forums. If standards developed in these forums are adopted by non-U.S. jurisdictions, they could have significant implications for U.S. insurers operating abroad and potentially for the domestic insurance regulatory regime. As U.S. insurers expand into foreign markets, they will have to

[56] 84 Fed. Reg. at 9029-9030.

[57] 84 Fed. Reg. at 9029.

navigate the supervisory regimes of other jurisdictions that may be influenced by international standards.[58]

In October 2013, the IAIS announced its plan to develop a risk-based global ICS, in response to a request by the FSB for the IAIS to create a comprehensive, group-wide supervisory and regulatory framework for Internationally Active Insurance Groups (IAIGs).[59] In 2014, the IAIS began to design this new regulatory framework, known as ComFrame, which would consist of both qualitative and quantitative supervisory requirements tailored to the complexity and international scope of IAIGs. As the quantitative component of ComFrame, the ICS in its final form will become a group-wide prescribed capital requirement that supervisors can leverage to assess an insurance group's financial health.

To date, there have been several significant milestones for the ICS project. First, the IAIS adopted ICS Version 1.0 for extended field testing in July 2017. ICS Version 1.0 identified two valuation approaches—the market-adjusted valuation (MAV) and Generally Accepted Accounting Principles with adjustments (GAAP Plus); established a standard method for calculating the ICS capital requirement; and indicated that other methods would be considered including the use of internal models in calculating the ICS capital requirement.[60]

Second, in November 2017, the IAIS announced that the next steps for the ICS project would have two phases: (1) a five-year monitoring phase beginning in 2020, followed by (2) an implementation phase.[61] During the first phase, the monitoring period, the ICS would not be used as a prescribed capital requirement, i.e., the ICS results would not be used as a basis for triggering supervisory action. Rather, the five-year monitoring period would be used for confidential reporting to group-wide supervisors and discussion in supervisory colleges. The IAIS stated that confidential reporting would be mandatory for all IAIGs during this period, and would involve the reporting of a reference ICS based on MAV with a single discounting approach, the standard method for calculating capital requirements, and converged criteria for qualifying capital resources.[62] A reference ICS solvency ratio would provide a basis for

[58] *See* Secretary Mnuchin International Forum Remarks.

[59] FSB, *Global Systemically Important Insurers (G-SIIs) and the Policy Measures that Will Apply to Them* (July 18, 2013), https://www.fsb.org/wp-content/uploads/r_130718.pdf.

[60] IAIS, *Risk-Based Global Insurance Capital Standard Version 1.0 for Extended Field Testing* (July 21, 2017), https://www.iaisweb.org/page/supervisory-material/insurance-capital-standard/file/67651/ics-version-10-for-extended-field-testing. *See also* FIO, *2018 Annual Report*, 20.

[61] IAIS, *Risk-Based Global Insurance Capital Standard Version 2.0: Public Consultation Document* (July 31, 2018), 16 (section 2.5), https://www.iaisweb.org/page/supervisory-material/insurance-capital-standard/file/76133/ics-version-20-public-consultation-document (*ICS Version 2.0 Consultation*).

[62] *See* IAIS, *Implementation of ICS Version 2.0* (November 2, 2017), 1. https://www.iaisweb.org/file/69796/implementation-of-ics-version-20. It is important to note that IAIS standards are not self-executing in the United States. The IAIS's use of the term "mandatory" applies only within the context

comparison across IAIGs and with GAAP Plus reported results and outcomes generated from internal models. The monitoring period would allow group-wide supervisors and host supervisors to discuss and assess the ICS as a capital benchmark, as well as to compare ICS results against existing group capital standards and calculations, or those under development. Finally, additional reporting of the ICS based on GAAP Plus valuation and internal model-based capital requirement calculations would be permitted at the option of the group-wide supervisor. In the second phase of implementation, the IAIS envisions the use of the ICS as a group-wide prescribed capital requirement in 2025.

As the third milestone, the IAIS agreed that it would assist in the collection and analysis of data toward the development of the Aggregation Method (AM), a methodology that leverages the domestic work being done in the United States, that is, the GCC by state regulators and the NAIC and the building block approach by the Federal Reserve. The AM presents an alternative approach to the ICS standard method for determining capital resources and capital requirements.[63] With completion of the second round of the AM data collection exercise in July 2019, recent discussions at the IAIS of the comparability assessment of AM against the ICS have moved forward. The IAIS intends to propose a definition of outcome equivalence as well as present an updated timeline and governance process for members to review at the next round of parent committee meetings in September 2019.

ICS Version 2.0, planned for adoption in November 2019, is intended to attain an *improved* level of comparability in comparison to ICS Version 1.0.[64] The IAIS's ultimate goal is a single ICS that includes a common valuation methodology by which one ICS achieves comparable, or substantially the same, outcomes across jurisdictions.[65] Because GAAP Plus will continue to be field tested for an additional two years through 2021, ICS Version 2.0 will still include two valuation approaches. Once field testing for GAAP Plus has been completed, it is expected that the differences between the two valuation methodologies will narrow significantly—in particular, with the implementation of certain accounting changes that will impact financial reporting based on either GAAP or International Financial Reporting Standards.

b) ICS Status

The IAIS has been undertaking a multi-year quantitative field-testing process with volunteer insurance groups. Five field-testing exercises have been conducted to date, in 2015 through 2019, with the final round completed in July 2019. Each quantitative ICS field-testing exercise

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of IAIS member commitments, and not the U.S. insurance regulatory regime. *See also* FIO, *2018 Annual Report*, 20.

[63] IAIS, *Implementation of ICS Version 2.0*.

[64] *See* "Insurance Capital Standard (ICS)," IAIS, https://www.iaisweb.org/page/supervisory-material/insurance-capital-standard.

[65] IAIS, *ICS Version 2.0 Consultation*.

has built upon the previous year's analyses (conducted by the IAIS) of data and feedback submitted by volunteer groups, including comments from IAIS public consultations. In 2019, 48 volunteer groups participated in the ICS field-testing exercise, including seven U.S. firms.

In addition to voluntary field-testing exercises, the IAIS has conducted three public ICS consultations, including one released on July 31, 2018, which solicited feedback on ICS Version 2.0.[66] Treasury encourages the IAIS to continue seeking public feedback on the development of the ICS. The comments received in the public consultations have been helpful for Team USA's efforts at the IAIS to develop positions that support an ICS that is more appropriate for the United States.

Aspects of the ICS that remain under development include the current construct and calibration of certain risks to be reflected in the ICS. In addition, IAIS members continue to negotiate the process and timing to assess whether the various approaches under consideration (including the use of internal models, GAAP Plus, and AM) produce outcomes equivalent to the ICS. The IAIS intends to make decisions concerning comparability and outcome equivalence by the end of the monitoring period.[67]

As a first step towards developing criteria for assessing comparability, the IAIS issued a survey to its members in late 2018, asking for their views on what constituted appropriate criteria for evaluating the various proposed appproaches against the ICS. However, significant work still remains ahead at the IAIS to address issues regarding comparability. Prior to the planned adoption in November 2019 of the ICS 2.0 for the monitoring period, IAIS members will continue to work on: (1) defining the meaning of "outcomes-equivalent"; (2) establishing the criteria and processes to evaluate comparability; (3) determining the expectations and use of the ICS by supervisors during the monitoring period; and (4) resolving significant technical design issues regarding the reference ICS.

While design issues and policy concerns are ongoing, recent IAIS work introduced geographical calibrations for several material risks within the ICS framework. Team USA aims to continue to move these efforts forward across other ICS risks. As part of the ICS work, FIO continues to advocate that the IAIS address the following issues:

- First, the IAIS should improve the design of the ICS so that it more appropriately reflects the unique business model of insurers as compared to other financial service providers. In particular, one area that has been identified is the ICS's market valuation approach and the negative effects it could have on the ability of insurance companies to provide long-term savings products, which are important to insurers and policyholders in the United States.
- Second, it is important that the IAIS create a defined structure and process for further work and revisions to the ICS during the monitoring period from 2020 to 2024. After it is adopted in 2019, the reference ICS will most likely need further development and

[66] *See, e.g.*, IAIS, *ICS Version 2.0 Consultation*.

[67] IAIS, *ICS Version 2.0 Consultation*.

revision, and the IAIS needs to develop and then implement a process that ensures appropriate confidentiality while allowing the IAIS, its members, and other important stakeholders to continue evaluating, revising, and improving the ICS over the next five years.

- Third, it is fundamentally important that the IAIS strengthen its efforts to develop a final ICS that is implementable in the United States. FIO is focused on working with other Team USA members, and the broader membership of the IAIS, to develop the criteria and the process by which the U.S. approach to group capital may be deemed "outcome equivalent" to the ICS, and pressing to have agreement at the IAIS, before the November 2019 adoption of the ICS, on a process for addressing outcome equivalence.
- Finally, getting the ICS right at the IAIS is more important than meeting any fixed schedule that mandates completion of the ICS at a specific point in time.

2. Activities-Based Approach and the Holistic Framework For Systemic Risk in the Insurance Sector

In November 2017, the FSB, in consultation with the IAIS and national authorities, welcomed and encouraged the IAIS to work on an activities-based approach, or ABA, to systemic risk in the insurance sector and noted that, once developed, the ABA may have significant implications not only for the assessment of systemic risk, but also for the identification of Global Systemically Important Insurers (G-SIIs) and G-SII policy measures.[68] In December 2017, the IAIS released its interim consultation paper on an activities-based approach to systemic risk.[69]

Building on this work, the IAIS released a second consultation paper in November 2018, *Holistic Framework for Systemic Risk in the Insurance Sector*.[70] The proposed framework for assessing and mitigating systemic risk in the insurance sector includes the following elements:

- **An enhanced set of supervisory policy measures** to help prevent insurance sector vulnerabilities from developing;

[68] FSB, *Review of the List of Global Systemically Important Insurers (G-SIIs)* (November 21, 2017), http://www.fsb.org/wp-content/uploads/P211117-2.pdf.

[69] IAIS, "IAIS Releases Interim Consultation Paper on an Activities-Based Approach to Systemic Risk," news release, December 8, 2017, https://www.iaisweb.org/page/news/press-releases//file/70446/iais-press-release-interim-public-consultation-on-an-activities-based-approach. *See also* FIO, *2018 Annual Report*, 18-19.

[70] IAIS, *Holistic Framework for Systemic Risk in the Insurance Sector: Public Consultation Document* (November 14, 2018), https://www.iaisweb.org/page/consultations/closed-consultations/2019/holistic-framework-for-systemic-risk-in-the-insurance-sector/file/77862/holistic-framework-for-systemic-risk-consultation-document (*Holistic Framework Public Consultation Document*).

- **A global monitoring exercise** to detect the possible build-up of systemic risk, including an annual global monitoring exercise to assess individual insurers and sector-wide trends with regard to specific activities and exposures;
- **Supervisory powers of intervention** that enable a prompt and appropriate response if a potential systemic risk is detected;
- **Mechanisms that help ensure the global consistent application of the proposed framework**, including a collective discussion at the IAIS on potential systemic risks and communication to the FSB on the outcome of the assessment; and
- **An assessment** by the IAIS of the consistent implementation of enhanced on-going supervisory policy measures.[71]

As part of the Holistic Framework, the IAIS released a short discussion of the proposed way in which the IAIS would develop a liquidity planning framework, with a longer-term initiative to explore developing a quantitative metric that supervisors can use to monitor liquidity risk.[72] In its discussion, the IAIS noted, among other things, the difference between liquidity and capital, the importance of liquidity planning and a contingency funding plan, considerations that should be taken into account when developing liquidity stress testing, and appropriate governance and reporting practices.[73] The IAIS noted that it proposed to develop an Application Paper on Liquidity Risk Management for consultation to complement development of the Holistic Framework.[74]

The IAIS also indicated that the potential implementation of the Holistic Framework should remove the need for an annual identification of G-SIIs by the FSB. The FSB has stated that, in November 2022, it will consider whether to discontinue or re-establish an annual identification of G-SIIs by the FSB in consultation with the IAIS and national authorities.

The IAIS published the proposed Holistic Framework for a two-month public comment period that ended on January 25, 2019.[75] The IAIS received 832 comments from interested parties, to which it responded in a 264-page compilation of comments.[76] The IAIS is scheduled to adopt the framework in November 2019.

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[71] IAIS, *Holistic Framework Public Consultation Document*, 5-6.

[72] IAIS, *Holistic Framework Public Consultation Document*, 62.

[73] IAIS, *Holistic Framework Public Consultation Document*, 62-72.

[74] IAIS, *Holistic Framework Public Consultation Document*, 28-29.

[75] "Public Consultation: Holistic Framework for Systemic Risk in the Insurance Sector," IAIS, last updated June 14, 2019, https://www.iaisweb.org/page/consultations/closed-consultations/2019/holistic-framework-for-systemic-risk-in-the-insurance-sector.

[76] IAIS, *Compiled Comments on Holistic Framework for Systemic Risk in the Insurance Sector 14-Nov-18 to 30-Jan-19* (June 2019), https://www.iaisweb.org/page/consultations/closed-consultations/2019/holistic-framework-for-

As part of the proposed Holistic Framework, the IAIS also published revisions to certain ICPs and ComFrame on June 14, 2019.[77] The IAIS proposed these ICP revisions in light of the comments received during the public consultation on the Holistic Framework. The changes to the ICPs cover the following thematic areas:

Enhancing the link of macroprudential monitoring to the supervisory framework:

- ICP 9 (Supervisory Review and Reporting) and ComFrame in ICP 9; and
- ICP 24 (Macroprudential Supervision).

Supervisory requirements on insurers:

- ICP 16 (Enterprise Risk Management for Solvency Purposes) and ComFrame in ICP 16; and
- ICP 20 (Public Disclosure).

Supervisory powers of intervention:

- ICP 10 (Preventive Measures, Corrective Measures and Sanctions).[78]

The consultation noted that materials on a fourth related thematic area—crisis management and planning—already had been subject to public consultation in July 2018 and were presented for information only.[79] The public consultation on these ICP revisions closed on August 15, 2019.

systemic-risk-in-the-insurance-sector/file/82537/public-consultation-comments-received-on-the-november-2018-holistic-framework-document.

[77] "Public Consultation: Revisions Related to the Holistic Framework for Systemic Risk in the Insurance Sector," IAIS, last updated June 15, 2019, https://www.iaisweb.org/page/consultations/closed-consultations/2019/revisions-related-to-holistic-framework-for-systemic-risk-in-the-insurance-sector.

[78] IAIS, *Cover Note for the Public Consultation on Supervisory Material Related to the Holistic Framework for Systemic Risk in the Insurance Sector* (June 14, 2019), 2, http://www.iaisweb.org/page/consultations/closed-consultations/2019/revisions-related-to-holistic-framework-for-systemic-risk-in-the-insurance-sector//file/82545/cover-note-on-the-public-consultation-related-to-holistic-framework (*Cover Note*).

[79] IAIS, *Cover Note*, 2 fn. 1.

III. EFFICIENT REGULATION AND GOVERNMENT PROCESSES

Section III addresses FIO's efforts to advance efficient regulation and government processes through coordination on insurance matters at the state and federal levels. It also discusses certain developments at two federal agencies: the U.S. Department of Housing and Urban Development (HUD) and the U.S. Securities and Exchange Commission (SEC). The section then turns to terrorism risk insurance, cyber insurance and cybersecurity, and concludes with discussions of the role of insurance in mitigating natural hazards and reinsurance for the NFIP.

A. Role of State and Federal Regulation

1. FIO Engagement with Federal Agencies and the States

FIO serves as a source of insurance expertise in the federal government, and as such continues to regularly consult with and advise multiple federal agencies and entities on insurance-related matters. For example, FIO has participated in the Treasury-led Federal Interagency Task Force on Long-Term Care Insurance, which also includes members from the Department of Health and Human Services, the Centers for Medicare & Medicaid Services, the Internal Revenue Service, the Office of Management and Budget, the Department of Labor, and Treasury's Office of Tax Policy.[80] FIO also has worked with the U.S. Department of Veterans Affairs on issues arising under the Servicemembers' Group Life Insurance Program and other life insurance programs for the benefit of servicemembers, veterans, and their families. Additionally, FIO has had discussions with the Federal Reserve about its stress testing of nonbank financial companies, as required by the Dodd-Frank Act.[81]

In addition, FIO participates in the MitFLG, a national coordinating structure to organize mitigation efforts across the federal government. FIO provided feedback on the MitFLG's National Mitigation Investment Strategy, a national strategy for advancing mitigation investment to reduce risks posed by natural hazards and increase the nation's resilience to natural hazards, as discussed further in Section III.A.2.c of this Report. FIO has also assisted FEMA on reinsurance and alternative risk transfer instruments in connection with the NFIP, as discussed below in Section III.A.2.d.

FIO has sought to lead regulatory coordination between the states and the federal government with respect to insurance regulation and the development of policy on insurance-related issues. For example, FIO regularly interacts with the states and the NAIC, through direct communications with state commissioners and their staff, and through participation at NAIC

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[80] *See* "Federal Interagency Task Force on Long-Term Care Insurance," Treasury, https://home.treasury.gov/policy-issues/economic-policy/economic-policy-reports-and-notices/federal-interagency-task-force-on-long-term-care-insurance. *See also* Section V.C of this Report.

[81] 12 U.S.C. § 5365(i)(1)(A).

meetings. FIO also coordinated closely with the NAIC in 2017, 2018, and 2019 to avoid duplicative federal-state data calls on terrorism risk insurance, as described in Section III.B of this Report.

In 2019, FIO began coordinating with other Treasury offices, the Federal Reserve, and the NAIC to prepare for the International Monetary Fund's Financial Sector Assessment Program (FSAP), which will be completed in the first half of 2020.[82] More generally, FIO continues to invite stakeholder input on federal-state coordination and other issues through FACI meetings, the ACSRM, and other stakeholder sessions.

2. Federal Agency Developments

a) HUD and the Disparate Impact Rule

In 2018, HUD issued an advance notice of public rulemaking seeking comment on possible amendments to the Fair Housing Act's disparate impact standard.[83] HUD subsequently published, on August 19, 2019, a proposed rule to "amend HUD's interpretation of the Fair Housing Act's disparate impact standard to better reflect" a 2015 U.S. Supreme Court ruling and "to provide clarification regarding the application of the standard to state laws governing the business of insurance."[84] In response to comments received on the advance notice of proposed rulemaking, in the proposed rule HUD emphasized that the "rule is not intended to infringe upon any [s]tate law for the purposes of regulating the business of insurance."[85] HUD therefore proposed to create a new paragraph in the rule to directly address application of the rule to the business of insurance, which would confirm that the "reverse preemption" provisions of the McCarran-Ferguson Act apply to the Fair Housing Act, and state insurance law would govern where the Fair Housing Act "invalidate[s], impair[s], or supersede[s]" the state law.[86] The preamble to the proposed rule stated that the new paragraph would not provide a "safe harbor" for insurance, but was intended to ensure that parties would not be put into a "'double bind of liability' where they could be subject to suit under disparate impact for actions" undertaken to maintain "good faith compliance" with another law.[87]

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[82] *See* "Financial Sector Assessment Program (FSAP)," International Monetary Fund, last updated July 24, 2019, https://www.imf.org/external/np/fsap/fssa.aspx.

[83] *See* FIO, *2018 Annual Report*, 24 (discussing Reconsideration of HUD's Implementation of the Fair Housing Act's Disparate Impact Standard, 83 Fed. Reg. 28560 (June 20, 2018), https://www.gpo.gov/fdsys/pkg/FR-2018-06-20/pdf/2018-13340.pdf).

[84] HUD's Implementation of the Fair Housing Act's Disparate Impact Standard, 84 Fed. Reg. 42854 (August 19, 2019), https://www.govinfo.gov/content/pkg/FR-2019-08-19/pdf/2019-17542.pdf.

[85] 84 Fed. Reg. at 42857.

[86] 84 Fed. Reg at 42863 (proposed new paragraph 24 CFR 100.500(e)).

[87] 84 Fed. Reg. at 42860.

b) SEC Regulation of Insurance Products

Variable annuities are complex products that generally must be registered with the SEC and are sold with lengthy prospectuses containing dense language not readily understood by retail investors.[88] The insurance industry has long advocated for both a user-friendly summary annuity prospectus, similar to the summary prospectus allowed for mutual funds, and a streamlined annual annuity report accessible online to new and existing annuity investors. In the Insurance EO Report, Treasury recommended that the SEC prioritize annuity-related disclosure reform by adopting a rule permitting a variable annuity summary prospectus and a streamlined prospectus update, while continuing to provide appropriate disclosure to investors.[89]

On October 30, 2018, the SEC proposed a comprehensive, modernized disclosure framework for variable annuity contracts and variable life insurance policies that would permit the use of summary prospectuses for variable contracts, while making additional information available to investors online.[90] In its proposal, the SEC explained that the variable contract summary prospectus is designed to be a succinct summary of the contract's key terms and benefits and most significant risks, making it easier to read and more understandable for investors. The SEC described the summary prospectus as the cornerstone of a "layered disclosure framework" tailored to the unique features of the product sold and alerting investors to the availability of more detailed information in the statutory prospectus and other locations.[91]

FIO commends the SEC for the quality and scope of its recent focus on insurance products, and encourages adoption of the new disclosure framework as soon as practicable.

c) Addressing Severe Weather and Other Natural Hazards: MitFLG and the National Mitigation Investment Strategy

Severe weather events are dangerous and costly. Millions of Americans were affected by wildfires, Hurricane Florence, Hurricane Michael, and other severe weather events in 2018.[92] In

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[88] *See* Treasury, *Insurance EO Report*, 111-112.

[89] Treasury, *Insurance EO Report*, 111-112. Treasury also recommended that the SEC adopt Rule 30e-3, which would allow mutual funds (including funds that underlie variable annuity and insurance products) to deliver shareholder reports on the Internet. The SEC adopted Rule 30e-3 on June 5, 2018. Optional Internet Availability of Investment Company Shareholder Reports, 83 Fed. Reg. 29158 (June 22, 2018), https://www.gpo.gov/fdsys/pkg/FR-2018-06-22/pdf/2018-12423.pdf.

[90] Updated Disclosure Requirements and Summary Prospectus for Variable Annuity and Variable Life Insurance Contracts, 83 Fed. Reg. 61730 (November 30, 2018), https://www.federalregister.gov/documents/2018/11/30/2018-24376/updated-disclosure-requirements-and-summary-prospectus-for-variable-annuity-and-variable-life. Comments on the proposed rules were due March 15, 2019.

[91] 83 Fed. Reg. at 61736.

[92] *See, e.g.*, Corelogic, *2018 Natural Hazard Report* (2019), available through https://www.corelogic.com/insights/natural-hazard-risk-summary-and-analysis.aspx.

2018 alone, in the United States, 14 separate weather events cost over $1 billion each, led to 247 known fatalities, and cumulatively cost approximately $91 billion.[93] Some argue the economic costs are even higher since rebuilding and recovery costs crowd out other productive investments.[94] Globally, insured losses from weather events in 2018 were the fourth highest for a single year.[95] Insurance is a critical financial resource for recovery from severe weather, providing direct benefits to policyholders.

The insurance industry also plays a key role in mitigation, that is, reducing the risk from severe weather and other natural hazards, while helping to improve resilience for more efficient, effective, and rapid recovery.

FIO has and will continue to emphasize the importance of insurance, both before and after disasters. FIO continues to support ongoing federal mitigation efforts, as well as efforts to improve the availability of insurance (which is a growing concern with respect to wildfires, for example)[96] and take-up of insurance.[97]

Treasury, through FIO, participates in the MitFLG, a national structure to coordinate mitigation efforts across the federal government and with state, local, tribal, and territorial representatives. The MitFLG focuses on integrating federal efforts to deliver the National Mitigation Framework's mitigation core capabilities and assess the effectiveness of mitigation capabilities

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[93] Adam B. Smith, "2018's Billion Dollar Disasters in Context," *NOAA Climate.gov*, February 7, 2019, https://www.climate.gov/news-features/blogs/beyond-data/2018s-billion-dollar-disasters-context. *See also* "Billion-Dollar Weather and Climate Disasters: Overview," NOAA National Centers for Environmental Information, https://www.ncdc.noaa.gov/billions/ (webpage tracking weather and climate events with the greatest economic impact between 1980 and 2019).

[94] Gary W. Yohe, "A $1 Trillion Economic Blow? The Cost of Extreme Weather in the U.S. is Worse Than We Thought," *Washington Post*, June 7, 2019, https://www.washingtonpost.com/weather/2019/06/07/trillion-economic-blow-cost-extreme-weather-us-is-worse-than-we-thought/.

[95] Swiss Re Institute, *sigma: Natural Catastrophes and Man-Made Disasters in 2018: "Secondary" Perils on the Frontline* (2019), 2, https://www.swissre.com/dam/jcr:c37eb0e4-c0b9-4a9f-9954-3d0bb4339bfd/sigma2_2019_en.pdf.

[96] *See, e.g.*, California Department of Insurance, "New Data Shows Insurance Is Becoming Harder to Find as a Result of Wildfires," news release, August 20, 2019, http://www.insurance.ca.gov/0400-news/0100-press-releases/2019/release063-2019.cfm. *See also* Marisa Lagos, "'Increasingly Unavailable and Unaffordable': Home Insurance Threatened Amid Wildfire Crisis," *KQED*, June 11, 2019, https://www.kqed.org/science/1943180/increasingly-unavailable-and-unaffordable-home-insurance-threatened-amid-wildfire-crisis.

[97] Homeowners' failure to obtain any insurance, or not enough insurance, remains an ongoing concern with respect to natural hazards from earthquakes to floods. *See, e.g.*, Missouri Department of Insurance, "New Report Shows the New Madrid Fault Area of the State on the Verge of an Earthquake Insurance Market Collapse," news release, July 8, 2019, https://insurance.mo.gov/news/newsitem/uuid/d6c5a8ec-8da9-40f9-9885-9b43ec94c38c; Matt Sheehan, "'Vast Majority' of Midwest Flood Damage to Go Uninsured: A.M. Best," *Reinsurance News*, April 5, 2019, https://www.reinsurancene.ws/vast-majority-of-midwest-flood-damage-to-go-uninsured-a-m-best/.

as they are developed and deployed across the nation.[98] Among other initiatives, MitFLG has developed a National Mitigation Investment Strategy.[99]

The National Mitigation Investment Strategy is a single national strategy for advancing mitigation investment to reduce risks posed by severe weather and natural hazards such as floods, hurricanes, tornados, wildfires, and earthquakes. The strategy provides an "opportunity for national scale coordination around mitigation investment and disaster resilience priorities."[100] To that end, the strategy outlines a series of high-level recommendations centered on three goals:

- Show how mitigation investments reduce risk;
- Coordinate mitigation investments to reduce risk, and
- Make mitigation investment standard practice.

The strategy's recommendations include "Use and Expand Financial Products and Approaches to Reduce and Transfer Risk," including incentives to encourage those in hazard-prone areas to purchase insurance.[101]

FIO plans to continue to work with MitFLG to implement the National Mitigation Investment Strategy, and to continue to coordinate with state insurance regulators and legislators in their efforts to improve national resilience to catastrophes,[102] including seeking input through FACI. (For more on FACI, see Section III.A.4 of this Report.)

d) Reinsurance for the National Flood Insurance Program

The NFIP is a federal flood insurance and risk management program managed by FEMA.[103] For several years, FEMA has used reinsurance to manage NFIP exposure through risk transfer to private reinsurers and the capital markets, and to promote private sector participation in

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[98] "National Mitigation Framework," FEMA, last updated August 2, 2019, https://www.fema.gov/national-mitigation-framework.

[99] MitFLG, *National Mitigation Investment Strategy* (2019), https://www.fema.gov/media-library-data/1565706308412-19739d7deeca639415cc76c681cee531/NationalMitigationInvestmentStrategy.pdf.

[100] "National Mitigation Investment Strategy," FEMA, last updated August 13, 2019, https://www.fema.gov/national-mitigation-investment-strategy.

[101] MitFLG, *National Mitigation Investment Strategy*, 20-21.

[102] Alabama, for example, enacted a law in 2019 requiring homeowners' insurers to offer an endorsement to upgrade roofs to an IBHS FORTIFIED standard if the policyholder incurs damage covered by the policy requiring the roof to be replaced. Ala. Code § 27-31D-2.1 (Act 2019-240, HB 283, 2019 Regular Session). In addition, the NAIC has a working group focused on catastrophe insurance-related issues. *See* "Catastrophe Insurance (C) Working Group: 2019 Charges," NAIC, https://naic-cms.org/cmte_c_catastrophe.htm.

[103] *See* "The National Flood Insurance Program," FEMA, last updated July 26, 2019, https://www.fema.gov/national-flood-insurance-program.

flood-risk management.[104] FIO has provided FEMA with technical insurance expertise about reinsurance and alternative risk instruments, beginning with FEMA's pilot reinsurance program in 2016 and continuing through its April 2019 capital markets placement.[105] Figure 1 summarizes the NFIP's reinsurance program since its 2016 pilot program.

As in prior years, the 2019 traditional reinsurance agreement for the NFIP covers a proportional or "pro rata" share of losses in excess of $4 billion, with the proportionate share varying by tranche (layer). The coverage is provided on a per occurrence, or event, basis (rather than an annual aggregate basis), meaning that one flood must cause at least $4 billion in losses to trigger reinsurance coverage; losses from multiple smaller floods cannot be added together to reach the $4 billion threshold. A panel (group) of 28 reinsurers provides the 2019 traditional reinsurance coverage.

In 2019, FEMA also transferred a portion of its risk to the capital markets, as it had in 2018, through catastrophe bonds, a form of alternative risk transfer. (For more on alternative risk transfer, see Section VI.B.2 of this Report.)

[104] "National Flood Insurance Program's (NFIP) Reinsurance Program," FEMA, last updated July 11, 2019, https://www.fema.gov/nfip-reinsurance-program.

[105] *See, e.g.*, FIO, *2018 Annual Report,* 6.

Figure 1: NFIP 2017-2019 Reinsurance Program

	2017	2018	2019

Traditional Reinsurance	• $1.042 billion
	• 25 reinsurers
	• Premium: $150 million
	
	• Reinsurers cover proportionate share of losses above $4 billion:
	  o 26% of losses between $4B-$8B
	  o No coverage for losses above $8B
	
	• Reinsurers paid $1.042 billion to cover losses from Hurricane Harvey
		• $1.46 billion
		• 28 reinsurers
		• Premium: $235 million
		
		• Reinsurers cover proportionate share of losses above $4 billion:
		  o 18.6% of losses between $4B-$6B
		  o 54.3% of losses between $6B-$8B
		  o No coverage for losses above $8B
		
		• No reinsurance recoveries
			• $1.32 billion
			• 28 reinsurers
			• Premium: $186 million
			
			• Reinsurers cover proportionate share of losses above $4 billion:
			  o 14.0% of losses between $4B-$6B
			  o 25.6% of losses between $6B-$8B
			  o 26.6% of losses between $8B-$10B
			  o No coverage for losses above $10B
			
			• No reinsurance recoveries as of July 31, 2019

Catastrophe Bonds	None	• $500 million
		• 3 year indemnification of losses
		• Premium: $62 million for first year
		
		• Agreement structured to cover:
		  o 3.5% of losses between $5B-$10B
		  o 13% of losses between $7.5B-$10B
			• $300 million
			• 3 year indemnification of losses
			• Premium: $32 million for first year
			
			• Agreement structured to cover:
			  o 2.5% of losses between $6B-$8B
			  o 12.5% of losses between $8B-$10B

Source: "National Flood Insurance Program's (NFIP) Reinsurance Program," FEMA

The NFIP is subject to reauthorization by Congress, and has received several short-term extensions over the past two years. As of July 31, 2019, the next statutory deadline for reauthorization was September 30, 2019.[106]

[106] *See* National Flood Insurance Program Extension Act, Pub. L. No. 116-19 (2019) (reauthorizing the NFIP through September 30, 2019). *See also* "National Flood Insurance Program: Reauthorization," FEMA, last updated June 11, 2019, https://www.fema.gov/national-flood-insurance-program/national-flood-insurance-program-reauthorization-guidance.

3. State Developments

a) Insurer Investments in Affiliates

Given that an insurer's investment portfolio funds its ability to meet policyholder obligations, those investments are regulated by the state insurance regulators to ensure solvency. There are two NAIC model laws that provide guidance for the oversight of insurer investments—a Defined Limits model, and a Defined Standards model.[107] The Defined Limits model imposes certain limits on amounts or relative proportions of various assets in which insurers may invest to ensure adequate diversification and risk mitigation. The Defined Standards model is more principles-based, applying a "prudent person" rule approach that allows for a certain amount of discretion among investments, provided that an insurer can demonstrate adherence to a sound investment policy. There is little difference between the guidance for life & health (L&H) insurer laws versus P&C insurer laws in both models. The NAIC also has mechanisms in place for evaluating credit risk of investment vehicles.

All states have some form of investment laws in place; there are, however, variances in the specific content of those laws. Specifically, limits on certain investments may be present in some states' laws, and lacking in other states, or one state's laws may be vaguer in some respects than another state's laws.

There is also a considerable body of work in statutory accounting principles regarding the accounting treatment for various types of investments, including their classification as affiliated investments. States generally incorporate statutory accounting principles by reference in their insurance laws, causing insurers to adhere to them. Changes in statutory accounting principles may then be more effective than amendments to model laws.

In April 2019, Greg Lindberg—the owner of Eli Global LLC, which in turn owns Southland National Insurance Company, Colorado Bankers Life Insurance Company, and Bankers Life Insurance Company—was charged with bribery.[108] The charges followed allegations in February 2019 that Lindberg took advantage of perceived loopholes in state laws on investments in affiliated entities to fund his other ventures.[109] According to the *Wall Street Journal*,

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[107] *See* Investments of Insurers Model Act (Defined Limits Version) (NAIC 2017), https://www.naic.org/store/free/MDL-280.pdf?17; Investments of Insurers Model Act (Defined Standards Version) (NAIC 2001), https://www.naic.org/store/free/MDL-283.pdf.

[108] U.S. Department of Justice, "The Founder and Chairman of a Multinational Investment Company, a Company Consultant, and Two North Carolina Political Figures are Charged with Public Corruption and Bribery," news release, April 2, 2019, https://www.justice.gov/opa/pr/founder-and-chairman-multinational-investment-company-company-consultant-and-two-north.

[109] Mark Maremont and Leslie Scism, "Financier Who Amassed Insurance Firms Diverted $2 Billion Into His Private Empire," *The Wall Street Journal*, February 28, 2019, https://www.wsj.com/articles/financier-who-amassed-insurance-firms-diverted-2-billion-into-his-private-empire-11551367856.

Lindberg allegedly used some $2 billion of his insurance companies' assets to fund acquisitions of other companies and personal assets through complex investment vehicles that purportedly were not affiliated with his other ventures.[110] The *Wall Street Journal*'s investigation concluded that many of these investments were among affiliated entities. In June 2019, the North Carolina insurance regulator took control of the insurers with the consent of Lindberg and the insurers' boards of directors to commence an orderly rehabilitation process.[111]

In response to the issues raised by Lindberg's dealings, in March 2019, the NAIC proposed numerous changes to statutory accounting principles to address perceived regulatory loopholes, and following its April 2019 Spring National Meeting released them for public consultation. Among other things, the proposals would require regulators to consider "the substance of the agreement and the parties whose actions or performance materially impact the insurance reporting entity under the transaction" in determining if a transaction involves related parties.[112] The proposal also states that "the mere inclusion of a non-related intermediary" should not be used as the basis for concluding that a transaction need not be identified and reported under related-party disclosure rules.[113] Specifically, changes were made to Statements of Statutory Accounting Principles (SSAP) 25, 26R, 32, and 43R, with the majority of them made to SSAP 25—Affiliates and Other Related Parties. As noted above, changes in statutory accounting principles may be a more effective mechanism than amendments to model laws.

b) Changes in NAIC Accreditation Requirements

The NAIC Accreditation Program was established to develop and maintain uniform baseline standards in all states for the purpose of promoting effective insurance company financial solvency regulation.[114] Standards listed as accreditation requirements are more likely to be adopted in all fifty states and the U.S. territories. Thus, the Accreditation Program is the primary tool through which the NAIC can achieve (not just encourage) uniformity in insurance state regulation.

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[110] Maremont and Scism, "Financier Who Amassed Insurance Firms Diverted $2 Billion Into His Private Empire."

[111] Leslie Scism and Mark Maremont, "North Carolina Regulators Seize Control of Life Insurers Owned by Greg Lindberg," *The Wall Street Journal*, June 27, 2019, https://www.wsj.com/articles/north-carolina-regulators-seize-control-of-life-insurers-owned-by-greg-lindberg-11561661303.

[112] *See* NAIC Statutory Accounting Principles Working Group, *August 2019 Meeting Materials*, 13, https://naic-cms.org/sites/default/files/national_meeting/0%20-%20Combined%20Hearing%208-19%20SAPWG.pdf.

[113] NAIC Statutory Accounting Principles Working Group, *August 2019 Meeting Materials*, 13.

[114] "Accreditation," NAIC, last updated December 7, 2018, https://www.naic.org/cipr_topics/topic_accreditation.htm.

The standard by which the NAIC reviews whether an individual state meets the accreditation standard is that the state pass the NAIC model law or a law that is "substantively similar," meaning that it includes the significant elements identified by the NAIC.[115]

The NAIC regularly evaluates the "adequacy and appropriateness of accreditation standards," and introduces new requirements as needed—usually introducing updates every year, with changes effective on January 1 of a future year.[116] State legislatures routinely introduce and enact new insurance laws in order to meet NAIC accreditation requirements.

NAIC accreditation requirements effective January 1, 2019 include:[117]

- **2011 Revisions to the Credit for Reinsurance Model Law (Model 785) and Credit for Reinsurance Model Regulation (Model 786).** Relates to certified reinsurer provisions, including updating three significant elements: (1) concentration risk, (2) catastrophe recoverables deferral, and (3) passporting. The NAIC subsequently adopted additional revisions to the model law to conform to the terms of the covered agreements, as discussed in Section IV.B of this Report. The NAIC reports that all states, and most territories, had adopted a version of the model prior to the current 2019 version, but does not specify which states have adopted the 2011 revisions.[118]

New NAIC accreditation requirements effective January 1, 2020 include:

- **Corporate Governance Annual Disclosure Model Act (Model 305) and Corporate Governance Annual Disclosure Model Regulation (Model 306).** Requires an insurer or group of insurers to provide an annual confidential disclosure of its corporate governance practices to its domestic regulator and/or lead state. To date, at least 27 states and territories have enacted this model law (or a substantially similar law).[119]
- **2014 Revisions to the Insurance Holding Company System Regulatory Act (Model 440**). Provides authority to a designated state to act as a group-wide supervisor for an IAIG and for risk retention groups in a holding company that meets the definition of an IAIG. Also includes provisions that may impact any state with a domestic insurer within an IAIG. To date, at least 32 states and territories have

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[115] *See* NAIC, *Financial Regulation Standards and Accreditation Program* (2019), 19, https://www.naic.org/documents/cmte_f_frsa_pamphlet.pdf.

[116] "Accreditation," NAIC.

[117] "Financial Regulation Standards and Accreditation (F) Committee," NAIC, https://naic-cms.org/cmte_f.htm.

[118] *See* Credit for Reinsurance Model Law (NAIC 2019), https://www.naic.org/store/free/MDL-785.pdf; Credit for Reinsurance Model Regulation (NAIC 2019), https://www.naic.org/store/free/MDL-786.pdf.

[119] *See* Corporate Governance Annual Disclosure Model Act (NAIC 2014), https://www.naic.org/store/free/MDL-305.pdf; Corporate Governance Annual Disclosure Model Regulation (NAIC 2014), https://www.naic.org/store/free/MDL-306.pdf.

enacted the current version of the model (or a substantially similar law), including the 2014 revisions.[120]

- **2014 Revisions to Annual Financial Reporting Regulation (Model 205).** Incorporates an internal audit function requirement for large insurers. International standards recognize the importance of an internal audit function in ICP 8 (Risk Management and Internal Controls). To date, at least 26 states and territories have enacted the current version of the model (or a substantially similar law), including the 2014 revisions.[121]
- **2009 Revisions to the Standard Valuation Law (Model 820).** Authorizes a principle-based reserving (PBR) methodology for life, annuity, and accident and health contracts. To date, at least 50 states and territories have enacted the current version of the model (or a substantially similar law), including the 2009 revisions.[122]

4. Federal Advisory Committee on Insurance

FACI was established in 2011 to provide FIO with non-binding advice and recommendations and otherwise assist FIO in carrying out its duties and authorities. FACI includes a cross-section of members who represent the views of state and non-government persons having an interest in FIO's duties and authorities, including state insurance regulators, industry experts, and consumer advocates.[123]

FACI held five public meetings in 2018 and the first half of 2019. Meetings in 2018 primarily focused on information sharing on items such as LTCI, cyber risk, natural catastrophes and mitigation, InsurTech, and public sector risk and risk transfer.[124]

In 2019, FACI agreed to re-establish subcommittees to facilitate the committee's work, with the goal of facilitating FACI's ability to better provide advice and recommendations to FIO on insurance issues that FACI deems most important to FIO's activities and mandate. FACI created the following three subcommittees, each of which then selected discrete topics of focus related to FIO's current priorities:

- **Availability of Insurance Products Subcommittee** focuses on the availability of insurance products from a consumer perspective. In 2019, the subcommittee began

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[120] *See* Insurance Holding Company System Regulatory Act (NAIC 2015), https://www.naic.org/store/free/MDL-440.pdf.

[121] *See* Annual Financial Reporting Model Regulation (NAIC 2015), https://www.naic.org/store/free/MDL-205.pdf.

[122] *See* Standard Valuation Law (NAIC 2010), https://www.naic.org/store/free/MDL-820.pdf.

[123] "FACI Members," Treasury, last updated September 11, 2019, https://www.treasury.gov/initiatives/fio/Pages/faci_members.aspx. *See also Charter: Federal Advisory Committee on Insurance*, § 12 (June 11, 2019), https://www.treasury.gov/initiatives/fio/Documents/2019FACI_Charter.pdf.

[124] Webcasts, minutes, and presentation materials from all FACI meetings are available on the FACI website. "Initiatives: Federal Advisory Committee on Insurance (FACI)," Treasury, last updated August 28, 2019, https://www.treasury.gov/initiatives/fio/Pages/faci.aspx.

work on two workstreams: (1) InsurTech and big data issues, and (2) retirement security and LTCI products.

- **FIO's International Work Subcommittee** focuses on: (1) the development of the ICS and its impact on U.S. insurers, as well as the ICS monitoring process, (2) strengthening U.S. access to international markets and ensuring a level playing field for U.S. companies to compete internationally, and (3) the IAIS Holistic Framework and the Council's activities-based approach.
- **Addressing the Protection Gap Through Public-Private Partnerships and Other Mechanisms Subcommittee** intends to examine a variety of P&C protection gaps. The subcommittee's 2019 work involved defining and setting parameters to define the protection gap, and estimate the size of the overall protection gap in the United States. The subcommittee also sought to understand why protection gaps exist and determine how the government and industry can best address protection gaps. Following this level-setting exercise, the subcommittee plans to examine specific risks more closely to develop its recommendations.

The three subcommittees plan to publicly summarize their work, beginning with the September 2019 public meeting. As the subcommittees complete their work on the 2019 workstreams and move into their 2020 projects, FACI is also expected to provide FIO with its non-binding advice and recommendations on those topics.

B. Terrorism Risk Insurance Program

The September 11, 2001 terrorist attacks resulted in an insurance industry loss of about $46 billion (in 2018 dollars),[125] which at the time was the largest insurance industry loss in history. Following those attacks, insurers and reinsurers largely withdrew from the terrorism risk insurance market, threatening planned construction, property acquisition, business projects, and other economic activity.[126] In response, TRIA was enacted,[127] which created TRIP within Treasury.[128] TRIP was established primarily to incentivize the private market to offer insurance for terrorism risk, while providing a transitional period for the private market to resume pricing

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[125] *See* FIO, *2019 TRIP Small Insurer Report*, 4.

[126] TRIA § 101(a)(5). Because the provisions of TRIA appear in a note (15 U.S.C. § 6701 note), instead of references to sections of the U.S. Code, this Report identifies TRIA references by the sections of the Act.

[127] Terrorism Risk Insurance Act of 2002, Pub. L. No. 107-297, 116 Stat. 2322 (2002).

[128] For purposes of this Report, TRIP refers to the program as it is administered through current Treasury regulations. *See* Terrorism Risk Insurance Program, 31 CFR pt. 50 (2019).

terrorism risk and build capacity to absorb future insurance losses.[129] Under the TRIP Reauthorization Act, TRIP has been extended through December 31, 2020.[130]

1. Data Collection and the 2019 Data Call

Under the TRIP Reauthorization Act, Treasury is required to collect terrorism risk insurance information annually from insurers in order to analyze the overall effectiveness of TRIP.[131] Beginning with the 2018 data call, Treasury coordinated with state insurance regulators and the NAIC to develop a consolidated data call (with the same information reported to Treasury as well as to state regulators), in order to reduce the burden on participating insurers.[132]

FIO conducted a voluntary TRIP data call in 2016. The 2017, 2018, and 2019 data calls were mandatory, subject to a number of limited reporting exemptions for certain insurers: (1) on the basis of their small volume of TRIP-eligible lines premium writings; or (2) because they were classified as captive insurers that wrote policies in TRIP-eligible lines of insurance, but did not provide any terrorism risk insurance subject to TRIP.[133] FIO collects certain data elements through third-party workers' compensation rating bureaus to minimize the burden on reporting insurers, and uses multiple reporting templates based on classification of the insurer's size and operations.[134]

Through its coordination with state regulators and the NAIC, FIO has developed a consolidated data collection approach that relies in substantial part upon the data templates originally developed by Treasury, with further revisions based upon the experience from prior data collection and the input of state regulators. FIO estimates that an extremely high proportion of insurers required to participate in the 2017, 2018, and 2019 TRIP data calls provided the requested data.[135]

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[129] TRIA § 101(b).

[130] Terrorism Risk Insurance Program Reauthorization Act, Pub. L. No. 114-1, 129 Stat. 3 (2015).

[131] TRIP Reauthorization Act § 111 (TRIA § 104(h)).

[132] Terrorism Risk Insurance Program 2018 Data Call, 82 Fed. Reg. 56328 (November 28, 2017), https://www.gpo.gov/fdsys/pkg/FR-2017-11-28/pdf/2017-25402.pdf.

[133] *See* Terrorism Risk Insurance Program 2019 Data Call, 83 Fed. Reg. 56152 (November 9, 2018), https://www.govinfo.gov/content/pkg/FR-2018-11-09/pdf/2018-24546.pdf.

[134] FIO, *2019 TRIP Small Insurer Report*, 12.

[135] For example, the non-small insurer response rate in the 2019 TRIP data call was at least 99.8 percent, and the small insurer response rate was at least 87.3 percent. *See* FIO, *2019 TRIP Small Insurer Report*, 14.

2. Terrorism Risk Insurance Program Small Insurer Report

The TRIP Reauthorization Act requires Treasury to submit reports in 2017 and 2019 to Congress concerning the competitiveness of small insurers in the terrorism risk insurance marketplace.[136] FIO relied upon information from the 2017, 2018, and 2019 TRIP data calls, as well as comments and information submitted by interested parties, to produce the required report on the competitiveness of small insurers in the terrorism risk insurance marketplace, which Treasury submitted to Congress on June 28, 2019.[137]

In the 2019 TRIP Small Insurer Report, FIO concluded that small insurers are significant participants in the market for terrorism risk insurance in the United States. FIO found that although the premiums received by small insurers in the TRIP-eligible lines of insurance, and their policyholders' surplus, have been relatively consistent over the past decade, their share of the terrorism risk insurance market has slightly declined over the past decade compared to larger insurers. FIO also examined differences between small insurers and other market participants. Small insurers charge less, on a percentage basis, than larger insurers for terrorism risk insurance, and small insurers are more likely to charge no premium for such coverage. Terrorism risk insurance take-up rates by the policyholders of small insurers are lower than the take-up rate by policyholders of non-small insurers. Small insurers participate in the market for cyber insurance (including cyber terrorism insurance that is included in TRIP-eligible lines). Small insurers also have smaller, but still significant exposure to nuclear, biological, chemical, and radiological (NBCR) terrorism risk in the property and liability lines as compared to other categories of insurers that participate in TRIP.

FIO also examined in the 2019 TRIP Small Insurer Report the program's mandatory availability requirement, and determined that it potentially causes small insurers, in some instances, to offer and write terrorism risk insurance where they might not do so otherwise. The financial backstop provided by TRIP mitigates the economic impact of this requirement. If the federal backstop becomes insufficient because of changes in market conditions or TRIP mechanics, however, it is possible that the mandatory availability requirement could cause small insurers to withdraw from certain markets, which could reduce the overall availability of insurance in the TRIP-eligible lines of insurance in such areas. Information to date, however, does not indicate that reductions in TRIP support since 2015 have led to such withdrawals.

FIO found that, in some circumstances, the Program Trigger requirement could prevent small insurers who have met their individual insurer deductibles from receiving the federal share of compensation.[138] Treasury's data calls indicate that some small insurers do not purchase sufficient private reinsurance to address this issue completely, even though small insurers as a

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[136] TRIP Reauthorization Act § 112 (TRIA § 108(h)). The TRIP Reauthorization Act also requires Treasury to submit to Congress a report on the effectiveness of TRIP in 2016, 2018, and 2020, which will be discussed in greater detail in next year's annual report. TRIP Reauthorization Act § 111 (TRIA § 104(h)(2)).

[137] FIO, *2019 TRIP Small Insurer Report*.

[138] The Program Trigger is the minimum amount of insurance industry aggregate insured losses resulting from certified act(s) of terrorism that must occur in a calendar year before any federal payments can be made under TRIP. *See* FIO, *2019 Small Insurer Report*.

class proportionally cede more of their premium for the purchase of reinsurance than larger insurers.

FIO also observed that the potential risk faced by small insurers of unreimbursed losses is most significant in connection with the workers' compensation line of insurance. Small insurers have a larger share of this market than other insurance lines, which is not subject to limits of liability and poses significant aggregation risks. Because the price that can be charged by insurers for this line is highly regulated by the U.S. states, insurers writing workers' compensation insurance may find it difficult to afford reinsurance that will cover their underwritten risks, particularly for NBCR-related losses. Although small insurers have increased their reinsurance purchases covering terrorism over the years covered by Treasury's data, their reinsurance protection for terrorism-related risks arising from NBCR events is much more limited than for conventional acts of terrorism.

3. Advisory Committee on Risk-Sharing Mechanisms

The ACRSM is a federal advisory committee established by the TRIP Reauthorization Act. It is statutorily required to provide FIO with advice, recommendations, and encouragement with respect to the creation and development of nongovernmental risk-sharing mechanisms to protect against losses arising from acts of terrorism.[139] The ACRSM is comprised of nine members who serve as representatives of insurers, reinsurers, and capital markets participants. To facilitate its exploration of the potential for increasing private participation in the terrorism risk insurance market, the ACRSM created five subcommittees: Direct Insurance, Reinsurance, Capital Markets, Exploration of Catastrophic Risks in Other Markets, and Consumer Interests.[140]

Since its formation in 2015, the Committee has held three public meetings to gather information from industry participants, focusing on the direct insurance market, the insurance of catastrophic risks in other (non-terrorism) markets, and capital markets. Each session also addressed consumer interests relevant to the meeting's core topic.[141] In August 2019, the Committee held a meeting to address its priorities for 2019 respecting the role of nongovernmental mechanisms in supporting the terrorism risk insurance market. The Committee determined, consistent with the statements of the Secretary respecting its mandate,[142] to hold additional meetings in Fall 2019 to

[139] TRIP Reauthorization Act § 110.

[140] ACRSM, *Summary of Public Meeting* (March 31, 2017), 14-15, https://www.treasury.gov/initiatives/fio/acrsm/Documents/Minutes_March_2017_ACRSM.pdf.

[141] Meeting agendas and minutes are available through the ACRSM website. "Advisory Committee on Risk-Sharing Mechanisms (ACRSM)," Treasury, last updated September 17, 2019, https://www.treasury.gov/initiatives/fio/acrsm/Pages/default.aspx.

[142] In the Insurance EO Report, the Secretary encouraged the ACRSM, in light of the importance of TRIP, and the upcoming consideration of any further TRIP reauthorization, "to continue its efforts and develop recommendations for FIO," which "should focus on how to increase private market participation in the terrorism insurance marketplace, with the goal of providing enhanced taxpayer protection in a way that does not result in market dislocations for the consumers and providers of terrorism risk insurance." Treasury, *Insurance EO Report*, 115.

discuss the format and content of potential recommendations to FIO, with the goal of developing written recommendations to FIO by Spring 2020.

4. TRIP Reauthorization

TRIP is currently scheduled to expire on December 31, 2020. In anticipation of efforts to reauthorize TRIP and to conduct meaningful engagement on the subject, at the end of last year, Treasury identified six issues and topic areas that would likely be of interest to stakeholders in the reauthorization discussions:

- The length of any reauthorization;
- Potential changes in the mechanics of TRIP (that is, the various sharing percentages between the private and public sectors);
- Any changes to the Program Trigger (which will be $200 million per calendar year as of 2020);
- Changes to TRIP relating to terrorism risk insurance for NBCR exposures;
- Changes to TRIP relating to cyber coverage (in 2016, Treasury generally advised in guidance that cyber terrorism coverage can be within the scope of TRIP, assuming it is written in lines of insurance subject to TRIP, although no specific provisions in either TRIA or the TRIP regulations currently address cyber coverage subject to TRIP); and
- Whether any changes to TRIP toward some type of pre-funded mechanism should be considered.

FIO and Treasury leadership met with a large number of stakeholders and interested parties in 2018 and 2019, including representatives from policyholder interests, direct insurers participating in TRIP, commercial reinsurers that support direct insurance exposure to terrorism risk, state insurance regulators and the NAIC, insurance brokers, capital markets participants, insurance rating agencies, and think tanks or public policy associations. Treasury has evaluated the views and analysis expressed during these meetings, which have been very helpful in the development of its views on TRIP reauthorization, which process is ongoing.

The Senate Banking Committee held a hearing on TRIP reauthorization on June 18, 2019.[143] As of July 31, 2019, no legislation seeking to reauthorize TRIP has been considered by Congress.

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[143] *The Reauthorization of the Terrorism Risk Insurance Program*, Before the Senate Committee on Banking, Housing, and Urban Affairs, 116th Cong. (June 18, 2019), https://www.banking.senate.gov/hearings/the-reauthorization-of-the-terrorism-risk-insurance-program.

C. Cyber Insurance and Insurance Industry Cybersecurity

FIO continues to monitor developments related to the cyber insurance market and insurance industry cybersecurity, as discussed below.[144] The separate but related topic of data privacy is addressed in the discussion of InsurTech in Section V.D of this Report.

1. The Cyber Insurance Market

Cyber risks are evolving rapidly and are an increasingly costly threat to businesses. A growing reliance on technology—including Internet of Things (IoT) devices, cloud computing, artificial intelligence (AI), and big data—increases both cyber risks and costs. Responding to and recovering from a cyber incident involves a variety of costs, including outlays for detection, remediation, business interruption, and notification. In 2019, the average cost of a data breach was projected to be $8.19 million, a 130 percent increase in the past 14 years.[145]

Cyber insurance typically takes one of three forms: (1) "package" coverage where cyber risk coverage is provided within a policy that also covers non-cyber losses, such as a cyber coverage endorsement on a general liability policy; (2) "stand-alone" cyber insurance products which only provide coverage for specified cyber risks; and (3) "non-affirmative" or "silent" cyber risk coverage where the policy does not expressly grant or exclude cyber coverage.

The market for standard cyber coverage, i.e., package and stand-alone policies combined, is growing. U.S. direct premiums written for cyber risk coverage were approximately $2.03 billion in 2018, a 10 percent increase over 2017's $1.84 billion, as shown in Figure 2.[146] This year-over-year growth rate is lower than in previous years, and cyber premiums still account for less than one percent of total U.S. premiums.[147] Globally, insurers wrote under $4 billion in

[144] *See, e.g.*, FIO, *2018 Annual Report*, 28-32.

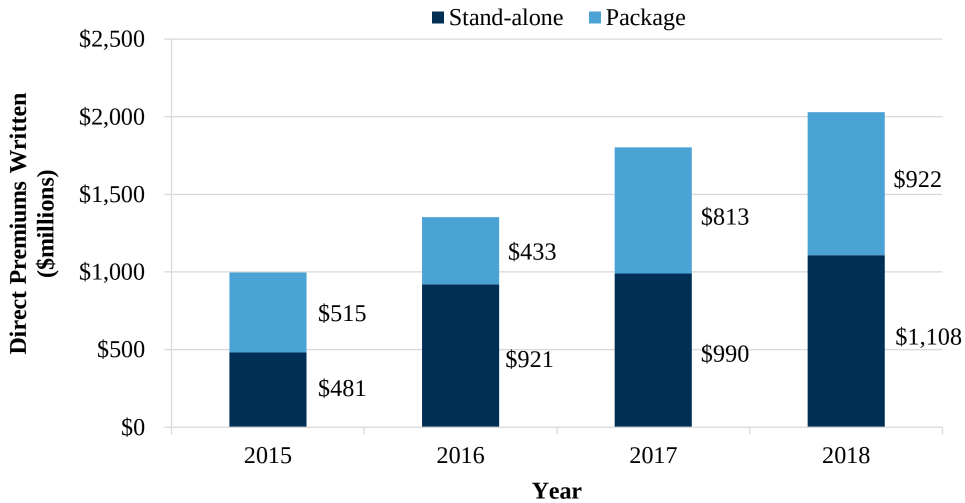
[145] IBM Security and Ponemon Institute, *2019 Cost of a Data Breach Study: Global Overview* (2019), 10, https://www.ibm.com/security/data-breach.

[146] *See* Aon, *US Cyber Market Update: 2018 US Cyber Insurance Profits and Performance* (June 2019), 3, http://thoughtleadership.aon.com/Documents/201906-us-cyber-market-update.pdf; A.M. Best, *Best's Market Segment Report: Cyber Insurers are Profitable Today, but Wary of Tomorrow's Risks* (2019), 5, http://www3.ambest.com/bestweekpdfs/sr507453119175full.pdf (citing data from NAIC's Cybersecurity and Identity Theft Coverage Supplement). Since 2018, Treasury has collected data on cyber premiums in TRIP-eligible lines of insurance. Figure 2 is based on data from state regulators. Insurers have reported larger cyber premiums to Treasury than they have to state regulators, possibly because they include premiums from affiliated surplus lines insurers that are not included in state data. *See* FIO, *Report on the Effectiveness of the Terrorism Risk Insurance Program* (2018), 54-55, https://www.treasury.gov/initiatives/fio/reports-and-notices/Documents/2018_TRIP_Effectiveness_Report.pdf. *See also*, FIO, *2019 TRIP Small Insurer Report*, 31-33. For more on TRIP, *see* Section III.B of this Report.

[147] Judy Greenwald, "Cyber Insurance Growing, Still Fraction of Industry Revenue," *Business Insurance*, July 25, 2019, https://www.businessinsurance.com/article/20190725/NEWS06/912329806/Cyber-insurance-growing-still-fraction-of-industry-revenue.

commercial cyber insurance premiums in 2018, accounting for 0.5 percent of total direct premiums written.[148]

Figure 2: U.S. Cyber Direct Premiums Written ($ millions)



Source: S&P Global Market Intelligence (S&P Global)

Cyber insurance is one tool available for policyholders to manage their cyber risk by transferring some of it to insurers. Insurers also may offer cyber risk management or other services to their policyholders that may help them reduce their risks.[149] For example, a broker has partnered with multiple insurers to evaluate and identify effective cyber risk solutions, noting that cyber insurers "have responded to the most costly, catastrophic cyber events of the past decade, and have extensive experience engaging with cybersecurity vendors and products."[150]

The amount of potential "non-affirmative coverage" currently is not readily quantifiable, but is of significant concern to insurers, reinsurers, and policymakers alike.[151] The Bank of England's

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[148] Premium includes affirmative cyber policies written on a stand-alone or package basis, and exclude so-called "silent" or non-affirmative policies providing cyber risk coverage. *See* The Geneva Association, *Advancing Accumulation Risk Management in Cyber Insurance* (2018), 8, https://www.genevaassociation.org/sites/default/files/research-topics-document-type/pdf_public/report_advancing_accumulation_risk_management_in_cyber_insurance_0.pdf.

[149] *See, e.g.*, FIO, *2018 Annual Report*, 29.

[150] "Cyber Catalyst by Marsh," Marsh, https://www.marsh.com/us/campaigns/cyber-catalyst-by-marsh.html. *See also* Leslie Scism, "Insurers Creating a Consumer Ratings Service for Cybersecurity Industry," *The Wall Street Journal*, March 26, 2019, http://webreprints.djreprints.com/4556681505978.html.

[151] *See, e.g.*, Judy Greenwald, "Threat of Silent Cyber Grows Significantly: Willis Re," *Business Insurance*, September 17, 2018, https://www.businessinsurance.com/article/20180917/NEWS06/912324037/Threat-of-silent-cyber-grows-significantly-Willis-Re-survey- (citing survey of insurers reflecting growing concern about losses affecting policies not specifically designed to cover cyber risk).

Prudential Regulatory Authority addressed the issue of non-affirmative cyber risk in January 2019 by requiring insurers in the United Kingdom to develop action plans to address non-affirmative cyber risk.[152] In response, Lloyd's of London announced that all Lloyd's underwriters would be required to affirmatively state whether first-party property damage policies include or exclude cyber coverage.[153] AIG and Allianz announced in November 2018 a similar goal of making all of their cyber insurance coverage explicit.[154] Modeling firms also are attempting to enhance industry modeling of "silent" cyber incidents.[155]

As the cyber insurance market grows, its shape has evolved. In 2018, 528 U.S. insurers reported writing cyber insurance, an increase of 12 percent from 2017 (471 insurers), and an increase of 71 percent from 2015 (309 insurers).[156] However, the stand-alone U.S. cyber insurance market is growing increasingly concentrated, with the top 10 cyber writers holding a combined market share of 69.5 percent in 2018 (up from 68.2 percent in 2017).[157] Approximately 40 percent of direct premiums written are ceded to reinsurers.[158] Captive insurers are also playing a growing role in cyber risk transfer.[159] While there reportedly is interest in cyber insurance-linked securities (ILS), a cyber ILS market has yet to develop.[160]

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[152] Letter from Anna Sweeney, Director, Insurance Supervision, Bank of England Prudential Regulation Authority, to Chief Executives of specialist general insurance firms regulated by the PRA (January 30, 2019), https://www.bankofengland.co.uk/-/media/boe/files/prudential-regulation/letter/2019/cyber-underwriting-risk-follow-up-survey-results.

[153] Matt Sheehan, "New Lloyd's Mandate to Require Clarity on Silent Cyber Coverage," *Reinsurance News*, July 4, 2019, https://www.reinsurancene.ws/new-lloyds-mandate-to-require-clarity-on-silent-cyber-coverage/.

[154] Ben Dyson, "AIG Aiming to Eradicate 'Silent' Cyberrisk From Its Books," *S&P Global Market Intelligence*, November 21, 2018, https://platform.mi.spglobal.com/web/client?auth=inherit#news/article?id=48335463; Charlie Wood, "Allianz to Address Silent Cyber with Updated Policy Wordings," *Reinsurance News*, November 30, 2018, https://www.reinsurancene.ws/allianz-to-address-silent-cyber-with-updated-policy-wordings/.

[155] *See* "AIR Worldwide and Capsicum Re Collaborate to Enhance Silent Cyber Models," *Insurance Journal*, September 4, 2018, https://www.insurancejournal.com/news/international/2018/09/04/500037.htm.

[156] A.M. Best, *Cyber Insurers are Profitable*, 5.

[157] A.M. Best, *Cyber Insurers are Profitable*, 11.

[158] A.M. Best, *Cyber Insurers are Profitable*, 7.

[159] *See, e.g.*, Matthew Lerner, "Captives Gain Traction as Cyber Cover Option," *Business Insurance*, August 5, 2018, https://www.businessinsurance.com/article/20180805/NEWS06/912323129/Captive-insurers-gain-traction-as-cyber-coverage-option; Luke Gallin, ""Continued, Accelerated Cyber Risk Growth Expected in the Captive Market: Aon," *Reinsurance News*, July 3, 2019, https://www.reinsurancene.ws/continued-accelerated-cyber-risk-growth-expected-in-the-captive-market-aon/ ("It's estimated that more than a third of all captives will be underwriting cyber risk in five years' time.")

[160] Kate Smith, "Stumbling Blocks: What's Stopping the Development of a Cyber ILS Market?" *Best's Review*, June 2019, http://news.ambest.com/articlecontent.aspx?refnum=285597. For more on ILS and other forms of alternative risk transfer, *see* Section VI.B.2 of this Report.

Several factors affect cyber insurance take-up rates.[161] Publicity about prominent cyber incidents, and the adoption of data protection laws and regulations within the United States and the EU, can be incentives to purchase cyber insurance. More conservative underwriting practices, cyber policy exclusions, and improvements in policy standardization have likely encouraged insurers' participation in the market. On the other hand, small and medium-sized enterprises, and individual consumers, are more likely to not have as much (or any) cyber coverage for a variety of reasons, including: they find premiums too expensive, believe they are not at risk, or have determined their cyber risk is manageable without insurance.[162] In the longer term, coverage disputes currently in court also may affect perceptions of cyber insurance's value.[163]

The average cyber policy limit reportedly decreased from $3.2 million in the middle of 2018 to $2.8 million at the end of 2018.[164] The causes of this decrease are unclear. Policyholders may be attempting to limit premium costs by purchasing smaller limits. Insurers may be reacting to loss ratios, which deteriorated in 2018 as compared to 2017.[165] Alternatively, insurers may be writing lower limits because of concerns about the limitations in existing cyber risk models or concerns about the potential accumulation or aggregation risk from a large-scale or systemic cyber event.[166]

In 2018 and 2019, FIO participated in several efforts to better understand the cyber insurance market and address ongoing concerns about cyber risk. For example, in 2018, FIO staff led the cyber insurance workstream of the EU-U.S. Insurance Project, which, in October 2018, released a paper outlining market developments and challenges and highlighting current supervisory practices for assessing cyber underwriting, as discussed further in Section IV.C.1 of this Report.

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[161] *See, e.g.*, Marsh, *More Cyber Insurance Buyers as Awareness Grows* (2019), 1, https://www.marsh.com/us/insights/research/cyber-insurance-trends-report-2018.html (reporting that the number of Marsh U.S. clients buying cyber insurance doubled from 19 percent in 2014 to 38 percent in 2018).

[162] *See* Insurance Information Institute and J.D. Power, *Small Business Big Risk: Lack of Cyber Insurance is a Serious Threat* (2018), 4, https://www.iii.org/sites/default/files/docs/pdf/small_business_big_risk_101218.pdf; The Council of Insurance Agents & Brokers, *Cyber Insurance Market Watch Survey* (2019), 6, https://www.ciab.com/download/16876/. *See also* "Businesses Believe Cyber Insurance Covers More Than it Does: Survey," *Insurance Journal*, July 31, 2019, https://www.insurancejournal.com/news/national/2019/07/31/534394.htm.

[163] *See* Adam Satariano and Nicole Perlroth, "Big Companies Thought Insurance Covered a Cyberattack. They May Be Wrong," *The New York Times*, April 15, 2019, https://www.nytimes.com/2019/04/15/technology/cyberinsurance-notpetya-attack.html.

[164] The Council of Insurance Agents & Brokers, *Cyber Insurance Market Watch Survey*, 4.

[165] Aon, *US Cyber Market Update* 5, 7. Individual insurer loss ratios varied significantly (from 4.8 percent to 184.4 percent), likely due to the wide variety in policy terms and limits across the industry.

[166] *See generally* Elizabeth Blosfield, "Data Deficit Remains Key Challenge for Cyber Insurance Underwriters," *Insurance Journal*, June 18, 2019, https://www.insurancejournal.com/news/national/2019/06/18/529663.htm; The Geneva Association, *Advancing Accumulation Risk Management*.

2. Insurance Industry Cybersecurity

As is generally the case for financial institutions, insurers are potential targets for cyber incidents.[167] In July 2019, for example, an insurance and financial company notified customers that several employees had fallen victim to a phishing scheme earlier in the summer that may have exposed customers' personal information.[168] According to one study, even though cyber breach levels are "close to or lower than the cross-industry average," the financial services sector has among the highest cyber crime costs.[169]

Not all cyber incidents are due to criminal activity, however. For example, one of the largest U.S. title insurers inadvertently exposed millions of sensitive records through a website vulnerability, although its internal investigation subsequently showed that unauthorized access was limited.[170]

Cybersecurity risks can also arise through third-party vendors. According to one study, 61 percent of U.S. survey respondents in 2018 experienced a data breach caused by one of their vendors or other third parties, an increase from 56 percent in 2017.[171] Some state insurance regulators expressly require insurers to review their cybersecurity risk from third-party vendors.[172]

The insurance industry generally has recognized its cybersecurity vulnerabilities and has taken steps to improve its defenses. One study found that, between 2017 and 2018, the number of

[167] *See, e.g.*, Accenture, "Cost of Cybercrime Continues to Rise for Financial Services Firms, According to Report from Accenture and Ponemon Institute," news release, July 16, 2019, https://newsroom.accenture.com/news/cost-of-cybercrime-continues-to-rise-for-financial-services-firms-according-to-report-from-accenture-and-ponemon-institute.htm. *See also* FIO, *2018 Annual Report*, 30 (describing why financial firms are attractive targets).

[168] Matt Olberding, "Lincoln-Based Ameritas Discloses Data Breach," *Lincoln Journal Star*, July 31, 2019, https://journalstar.com/business/local/lincoln-based-ameritas-discloses-data-breach/article_d0ac4d30-7e26-59ad-8fed-7ffebb2d0835.html.

[169] Accenture, "Cost of Cybercrime Continues to Rise."

[170] First American Title Insurance Company, "First American Reports Completion of Investigation into Customer Impact of Information Security Incident," news release, July 16, 2019, https://www.firstam.com/incidentupdate/update20190716.html.

[171] Ponemon Institute LLC, *Data Risk in the Third-Party Ecosystem* (November 2018), 3. *See also* Ponemon Institute and Opus, "Opus & Ponemon Institute Announce Results of 2018 Third-Party Data Risk Study: 59% of Companies Experienced a Third-Party Data Breach, Yet Only 16% Say They Effectively Mitigate Third-Party Risks," news release, November 15, 2018, https://www.marketwatch.com/press-release/opus-ponemon-institute-announce-results-of-2018-third-party-data-risk-study-59-of-companies-experienced-a-third-party-data-breach-yet-only-16-say-they-effectively-mitigate-third-party-risks-2018-11-15.

[172] NYDFS, 23 N.Y. Comp. Codes R. & Regs. Tit 23 § 500.11 (March 1, 2017), https://www.dfs.ny.gov/docs/legal/regulations/adoptions/dfsrf500txt.pdf (describing the requirement for a "Third Party Service Provider Security Policy"); Insurance Data Security Model Law (NAIC 2017), https://www.naic.org/store/free/MDL-668.pdf (including numerous provisions related to Third-Party Service Providers).

cyber capabilities mastered by insurers almost doubled, and successful breaches of insurers declined from 30 percent in 2017 to 22 percent in 2018.[173] Insurers also continue to share cybersecurity information through a variety of formal and informal mechanisms.[174]

Federal Cybersecurity Efforts: At the federal level, Treasury serves as the interface for matters involving cyber threats and cybersecurity for organizations in the financial services sector, including insurers.[175] Treasury works with numerous organizations within the public and private sectors to protect the nation's critical financial services infrastructure. Treasury is also expanding its ability to provide cybersecurity resources to small financial institutions around the country. In February 2019, in partnership with the NAIC and the South Carolina Department of Insurance, Treasury successfully held the first of several planned cyber tabletop exercises for small and regional insurers. A second exercise was held in September 2019 in partnership with the NAIC and the Missouri and Kansas Departments of Insurance. Through this initiative, Treasury has leveraged its expertise in conducting cyber tabletop exercises to provide small and regional insurers with access to a crucial cybersecurity resource. Treasury is training NAIC and state insurance regulatory staff on how to conduct such exercises, which could result in numerous small and regional insurers participating in a cyber tabletop exercise in the future.

Some federal efforts, which do not specifically target the insurance industry, may also provide incentives for cybersecurity improvements within the industry. For example, the SEC has stated that all public companies should consider cyber threats when implementing internal accounting controls.[176]

State Cybersecurity Efforts: Insurance regulators and legislators also continue to act at the state level on insurance industry cybersecurity. As of July 31, 2019, seven states—Alabama, Connecticut, Delaware, Michigan, Mississippi, Ohio, and South Carolina—had adopted the NAIC's Insurance Data Security Model Law or a similar law.[177] The NAIC model law was

[173] Accenture, "Seizing Cyber Resilience Mastery in Financial Services," news release, September 11, 2018, https://www.accenture.com/us-en/insights/financial-services/2018-state-of-cyber-resilience.

[174] *See, e.g.*, FIO, *2018 Annual Report*, 30-31 (discussing, among other things, the Financial Services-Information Sharing and Analysis Center and the Insurance Risk Council).

[175] FIO, *2018 Annual Report*, 31.

[176] SEC, "SEC Investigative Report: Public Companies Should Consider Cyber Threats When Implementing Internal Controls," news release, October 16, 2018, https://www.sec.gov/news/press-release/2018-236.

[177] *See* Insurance Data Security Model Law (NAIC 2017); Alabama Insurance Data Security Law, Ala. St. §§ 10A-20-6.16, 27-21A-23 (as amended by Alabama Senate Bill 54); Connecticut Public Act No. 19-117, § 230 (2019); 18 Del. Code § 8601 et seq.; Michigan Public Act 690 of 2018; Mississippi Laws 2019, S.B. No. 2831; Ohio Rev. Code § 3965.01 et seq.; 2018 S.C. Act No. 171.

based on New York's cybersecurity regulation. The New York regulation became fully effective on March 1, 2019, after a two-year implementation period.[178]

Treasury encouraged the prompt adoption of the NAIC model law by the states, but noted that if the adoption and implementation of the model law by the states does not result in uniform data security regulations, Congress may need to act.[179] Already there are indications of variations. For example, the NAIC Model Law requires notification of a breach within 72 hours, but the Ohio and Delaware versions of the law have changed this requirement to three business days while Michigan allows for 10 days. Michigan and Connecticut also have changed the threshold for certain exemptions under the NAIC Model Law, which exempts those with fewer than 10 employees from the information security program requirement. Michigan raises the threshold to 25 employees while Connecticut has raised it to 20 employees (until 2021, when the threshold lowers to 10 employees). Commentators have varying views about the significance of these variations, particularly given the relatively small number of states that have enacted the law.[180] FIO will continue to monitor the states' adoption of the model law and its implementation.

International Cybersecurity Efforts: At the international level, FIO has worked with regulators and policymakers to draw attention to cybersecurity for the insurance industry, and to the financial sector more broadly.

FIO staff led the insurer cybersecurity workstream of the EU-U.S. Insurance Project in 2018 (discussed in Section IV.C.1 of this Report), which published a paper in 2018 outlining legislative and supervisory frameworks in the EU and the United States, and describing "selected initiatives and resources addressing insurance industry cybersecurity risk."[181]

FIO staff also participated in the development of the IAIS's *Application Paper on Supervision of Insurer Cybersecurity*, published in November 2018.[182] This application paper is intended to

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[178] 23 NYCRR § 500.11. *See also* "Cybersecurity Resource Center," New York State Department of Financial Services, https://www.dfs.ny.gov/industry_guidance/cybersecurity.

[179] Treasury, *Insurance EO Report*, 117.

[180] *See, e.g.*, Harriet Pearson, Timothy Tobin & Morgan Perna, "Cybersecurity Standards for the Insurance Sector—A New Patchwork Quilt in the US?" *LexBlog*, May 13, 2019, https://www.lexblog.com/2019/05/13/cybersecurity-standards-for-the-insurance-sector-a-new-patchwork-quilt-in-the-us/; Joseph J. Lazzarotti, "Licensed by Your State's Insurance Commissioner? Comprehensive Data Security Requirements Are Headed Your Way," *JacksonLewis*, August 9, 2019, https://www.workplaceprivacyreport.com/2019/08/articles/consumer-privacy/licensed-by-your-states-insurance-commissioner-comprehensive-data-security-requirements-are-headed-your-way/.

[181] EU-U.S. Insurance Dialogue Project, *Insurance Industry Cybersecurity Issues Paper* (2018), 1, https://eiopa.europa.eu/Publications/Other%20Documents/181031%20EU-US%20Project%20Cybersecurity%20Paper_publication.pdf.

[182] IAIS, *Application Paper on Supervision of Insurer Cybersecurity* (2018), https://www.iaisweb.org/page/supervisory-material/application-papers//file/77763/application-paper-on-supervision-of-insurer-cybersecurity.

"provide further guidance to supervisors seeking to develop or enhance their approach to supervising the cyber risk, cybersecurity, and cyber resilience of insurers"[183] and builds on work of other international bodies, including the *G7 Fundamental Elements for Cyber Security for the Financial Sector*,[184] the *G7 Fundamental Elements for Effective Assessment of Cybersecurity for the Financial Sector*,[185] and the CPMI-IOSCO's *Guidance on Cyber Resilience for Financial Market Infrastructures*.[186] The application paper is principles-based and encourages supervisors to consider steps to develop and implement standards, tools, and metrics for protecting the confidentiality, integrity, and accessibility of systems and customer data of insurers under their jurisdiction. The paper also recognizes stakeholders' shared interest "in protecting the financial system, individual institutions, and policyholders from cybersecurity risks, while avoiding regulatory fragmentation and overlap."[187]

In addition, FIO staff participated in the multinational working group that drafted the FSB's *Cyber Lexicon*.[188] Published in November 2018, the *Cyber Lexicon* is intended to improve standardization with respect to cyber risk terminology, by defining approximately 50 core terms relating to cybersecurity and cyber resilience in the financial sector.[189] The *Lexicon* is intended to support the financial sector cyber resilience work of the FSB, standard-setting bodies, other authorities, and private sector participants, such as financial institutions and international standards organizations.[190]

With respect to the financial sector more broadly, in May 2019, the FSB published a progress report on its "work on developing effective practices for financial institutions' response to, and recovery from, a cyber incident."[191]

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183 IAIS, *Application Paper on Supervision of Insurer Cybersecurity*, 4-5.

184 *G7 Fundamental Elements of Cybersecurity for the Financial Sector* (October 2016), https://www.ecb.europa.eu/paym/pol/shared/pdf/G7_Fundamental_Elements_Oct_2016.pdf?69e99441d6f2f131719a9cada3ca56a5.

185 *G7 Fundamental Elements for Effective Assessment of Cybersecurity in the Financial Sector* (October 2017), http://www.mef.gov.it/inevidenza/documenti/PRA_BCV_4728453_v_1_G7_Fundamental.pdf.

186 Committee on Payments and Market Infrastructures and Board of the International Organization of Securities Commissions, *Guidance on Cyber Resilience for Financial Market Infrastructures* (2016), https://www.bis.org/cpmi/publ/d146.pdf.

187 IAIS, *Application Paper on Supervision of Insurer Cybersecurity*, 57.

188 A Federal Reserve official chaired the FSB working group for this project. *See* FIO, *2018 Annual Report*, 56. In addition to FIO's participation through the IAIS's Financial Crime Task Force, Treasury served on the working group through staff from its Office of Cybersecurity and Critical Infrastructure Protection and Homeland Security. For more on the FSB, *see* Section IV.D of this Report.

189 FSB, *Cyber Lexicon* (2018), https://www.fsb.org/wp-content/uploads/P121118-1. *See also* FIO, *2018 Annual Report*, 30, 56.

190 FSB, "FSB Publishes Cyber Lexicon," news release, November 12, 2018, https://www.fsb.org/2018/11/fsb-publishes-cyber-lexicon/.

191 FSB, *Cyber Incident Response and Recovery: Progress Report to the G20 Finance Ministers and Central Bank Governors Meeting in Fukuoka, 8-9 June 2019* (2019), https://www.fsb.org/wp-content/uploads/P280519-1.pdf.

IV. INTERNATIONAL ENGAGEMENT

Section IV addresses structural changes at the IAIS, describes the 2020-2024 Strategic Plan for the IAIS, outlines the progress on development of ICPs and ComFrame, and notes other reporting by FIO on its work to increase transparency at the IAIS. The section then highlights other international work, focused on financial crime. Next, it discusses the U.S.-EU and U.S.-UK covered agreements, presenting background information before outlining progress by the states and others towards their implementation. The section proceeds to outline the work of two insurance dialogue projects: the EU-U.S. Insurance Project and the U.S.-UK Insurance Project. It briefly summarizes insurance-related work at the FSB and OECD. The section concludes by describing the United States' bilateral dialogue with India on insurance issues.

A. IAIS

1. Structural Changes at the IAIS and FIO's Role

FIO represents the United States at the IAIS.[192] The U.S. members of the IAIS are FIO, the Federal Reserve, the NAIC, and the state and territory insurance regulators who represent the individual sovereign jurisdictions within the United States. The U.S. members of the IAIS are informally known, collectively, as Team USA (as noted above).

The IAIS is a voluntary, member-driven non-profit organization of insurance supervisors. With over 210 Members accounting for 97 percent of worldwide premium volume, the IAIS is the international standard-setting body responsible for developing and supporting the implementation of principles, standards, and guidance for the supervision of the insurance sector.[193] The IAIS's mission is "to promote effective and globally consistent supervision of the insurance industry in order to develop and maintain fair, safe and stable insurance markets for the benefit and protection of policyholders and to contribute to global financial stability."[194]

In November 2018, the General Meeting of Members, which governs the IAIS, approved changes to the composition of the Executive Committee in support of the IAIS five-year strategic plan (discussed in Section IV.A.2 of this Report). The Executive Committee continues to provide strategic direction, appoint the Secretary General, manage the IAIS consistent with

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[192] 31 U.S.C. § 313(c)(1)(E).

[193] IAIS, *IAIS Annual Report 2017* (2018), 8, https://www.iaisweb.org/page/about-the-iais/annual-report/file/77857/iais-ar-2017-digital-pdf-def-dp. *See also* IAIS, *IAIS Organisation Members* (September 20, 2019), https://www.iaisweb.org/list/iaismembers.

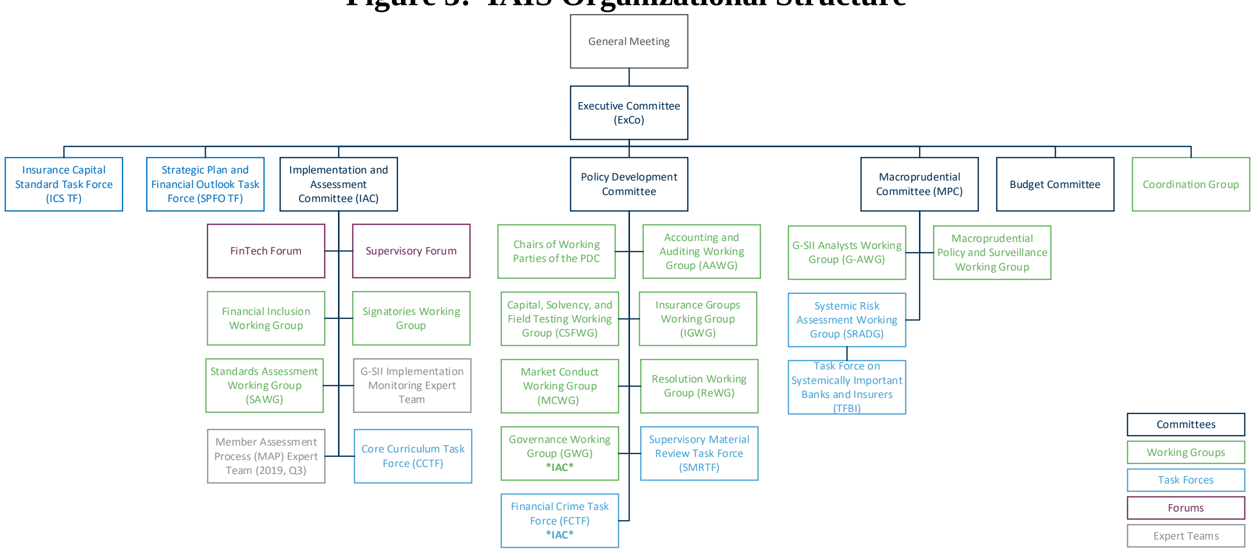
[194] IAIS, *IAIS Annual Report 2017*, 10.

specific duties in the bylaws, and make decisions necessary to achieve the IAIS mission.[195] The General Meeting amended the by-laws in 2018 to change the Executive Committee by:

- Introducing voting members that represent Standing Jurisdictions, which ensures representation from the major insurance markets;
- Increasing the number of seats for some regions based on the market size and number of members in the region to maintain geographic diversity;
- Including non-supervisory members; and
- Increasing central bank members of the IAIS, recognizing the technical expertise that central bank members bring to the IAIS deliberations.[196]

As a result of these changes, FIO became a permanent member of the IAIS Executive Committee, an important step towards ensuring that the U.S. insurance regulatory system, which oversees the largest single-country insurance market in the world, is appropriately represented at the IAIS. As Secretary Mnuchin observed: "This governance change should help us advance the best interests of the U.S. insurance sector, as all members of Team USA will now have a voice at the most senior levels of the IAIS. Treasury will continue to work with the IAIS on these governance issues and appropriate geographic representation for the United States at the IAIS."[197] Figure 3 shows the current IAIS structure, as modified in 2018.

Figure 3: IAIS Organizational Structure



Source: FIO. *See also* "IAIS Organisational Structure," https://www.iaisweb.org/page/about-the-iais/organisational-structure

[195] IAIS, *IAIS Annual Report 2017*, 8.

[196] IAIS, *Newsletter* (November/December 2018), 9-10, https://www.iaisweb.org/page/news/newsletter-archive/file/78223/iais-newsletter-november-december-2018.

[197] Secretary Mnuchin International Forum Remarks.

Throughout 2018 and 2019, FIO has continued to fulfill its statutory role representing the United States in the IAIS in various IAIS committees, subcommittees, working groups, and task forces. FIO continues to be engaged in the development of ICS Version 2.0 through the Insurance Capital Standard Task Force and the Capital, Solvency & Field Testing Working Group, as discussed in Section II.B.1 of this Report. In addition, a FIO staff member chairs the IAIS Resolution Working Group, and represents the IAIS at relevant FSB bodies such as the Resolution Steering Group and the FSB Cross-Border Crisis Management Group for Insurers (iCBCM). Another member of FIO's staff chairs the IAIS Financial Crime Task Force (FCTF) and, in that capacity, chairs the IAIS delegation to the Financial Action Task Force (FATF), as discussed further in Section IV.A.4 of this Report. In addition, a FIO staff member chairs the Systemically Important Banks and Insurers Task Force, and is vice chair of the Systemic Risk Assessment Drafting Group. FIO staff also participate in the IAIS's: Policy Development Committee; Macroprudential Committee; Coordination Group; and Implementation and Assessment Committee, as well as Governance Working Group; G-SII Analysts Working Group; Insurance Groups Working Group; Macroprudential Policy & Surveillance Working Group; Strategic Plan and Financial Outlook Task Force; Standards Assessment Working Group; and Supervisory Materials Review Task Force.

In all of its IAIS-related (and other international) work, FIO advocates for U.S. interests and for the United States' state-based system of insurance regulation. FIO will also continue to prioritize close coordination and collaboration with the other members of Team USA, as well as facilitating formal and informal opportunities for U.S. stakeholders to engage with FIO about matters before the IAIS and other international forums.

2. IAIS 2020-2024 Strategic Plan

In June 2019, the IAIS announced its new strategic direction through its 2020-2024 Strategic Plan.[198] The 2020-2024 Strategic Plan recognizes that the IAIS will be moving toward different priorities in the next five years as it largely completes its package of post–financial crisis reforms.[199] The Strategic Plan sets out High Level Goals and Strategies to respond to trends and developments that have "the potential to reshape the business of insurance in the coming years."[200] The IAIS condensed and reframed its prior High Level Goals so that the IAIS core

[198] IAIS, "IAIS Embarks on a New Strategic Direction: Global Standard-Setting Body Approves Its 2020-2024 Strategic Plan and Financial Outlook," news release, June 14, 2019, https://www.iaisweb.org/page/news/press-releases/file/82553/press-release-iais-embarks-on-new-strategic-direction.

[199] IAIS, *The IAIS Strategic Plan 2020-2024* (June 2019), 3, https://www.iaisweb.org/page/about-the-iais/strategic-plan/file/82533/2020-2024-strategic-plan.

[200] IAIS, *Strategic Plan*, 3, 5.

functions can evolve to respond to these trends and developments.[201] The 2020-2024 Strategic Plan sets out five new High Level Goals:

- **Assessing and Responding to Market Developments:** "The IAIS assesses global market trends and developments in, or relevant to, the insurance sector and responds to issues that present opportunities, challenges, and risks relevant to our Mission."
- **Standard Setting:** "The IAIS sets and maintains globally recognized standards for insurance supervision that are effective and proportionate."
- **Supporting Supervisory Practices:** "The IAIS supports its Members by sharing good supervisory practices and facilitating understanding of supervisory issues."
- **Supporting Observance of Standards:** "The IAIS assesses and promotes observance of its supervisory material."
- **Effective Operations and Transparency**: "The IAIS operates effectively, efficiently and transparently in delivering its Mission and in communicating with stakeholders."[202]

The Strategic Plan also notes that it "does not set out a significant increase in the scale of IAIS activities but rather a shift in focus in line with the" High Level Goals and new strategic themes.[203] It also explains that the governance structure changes to the Committee structure and composition (discussed in Section IV.A.1 of this Report) "were introduced in anticipation of the strategic direction" in the Strategic Plan, and in support of the High Level Goals.[204] FIO will continue to engage with the IAIS and advocate for U.S. interests as the IAIS begins its efforts to implement the Strategic Plan.

3. Insurance Core Principles and ComFrame

In 2018, the IAIS released for public consultations revisions to the ICPs and ComFrame as part of its ongoing development of supervisory materials by theme across the three tiers of standard

[201] *Compare* IAIS, *IAIS Mission and 2015-2019 Strategic Goals*, https://www.iaisweb.org/file/62748/iais-mission-and-2015-19-strategic-goals-amended-12-november-2015 (identifying seven High Level Goals: (1) Assessing and Responding to Insurance Sector Vulnerabilities; (2) The IAIS as the Global Standard Setter for Insurance; (3) Contributing to Financial Stability in the Insurance Sector; (4) Enhancing Effective Supervision; (5) Enhancing Implementation and Observance of ICPs; (6) Effective Stakeholder Outreach and External Interaction; and (7) Effective and Efficient Organisation and Operations).

[202] IAIS, *Strategic Plan*, 6, 9-16.

[203] IAIS, *Strategic Plan*, 18.

[204] IAIS, *Strategic Plan*, 18. *See also* FIO, *2018 Annual Report*, 36-37 (describing IAIS structural changes); Section IV.A.1 of this Report (discussing Executive Committee changes, including the addition of FIO to the IAIS Executive Committee).

setting—ICPs, ComFrame, and G-SII policy measures.[205] The IAIS also revised relevant ICPs and ComFrame sections to accommodate, and comport with, the Holistic Framework (discussed further in Section II.B.2 of this Report). Specifically, between July 2018 and July 2019, the IAIS released the following ICPs, ComFrame, and related materials for public consultation:

- ICS Version 2.0, as part of ComFrame, released on July 31, 2018 (see also Section II.B.1 of this Report);
- Overall ComFrame, released on July 31, 2018;[206]
- Revisions related to the Holistic Framework, released on June 14, 2019, including revisions to:
  - ICP 9 (Supervisory Review and Reporting) and ComFrame in ICP 9,
  - ICP 10 (Preventive Measures, Corrective Measures and Sanctions),
  - ICP 16 (Enterprise Risk Management for Solvency Purposes) and ComFrame in ICP 16,
  - ICP 20 (Public Disclosure), and
  - ICP 24 (Macroprudential Supervision);[207]
- Various additional supervisory materials released on June 14, 2019, including
  - Draft revised IAIS Glossary;
  - Draft ComFrame Assessment Methodology;
  - Changes in the Introduction to ICPs and ICP 7 (Corporate Governance) made for consistency with ComFrame; and
  - Draft Revised ICP 22 (Anti-Money Laundering and Combatting the Financing of Terrorism).[208]

Noteworthy among these consultations were the revisions to ICP 22, its first revision since 2013, which was updated to improve usefulness to supervisors and enhance consistency with FATF Recommendations (see also Section IV.A.4 of this Report). In addition, the introduction of

[205] For more information on past revisions to ICPs and ComFrame, *see* FIO, *2018 Annual Report*, 39-40.

[206] "Public Consultation: Overall ComFrame," IAIS, last updated June 14, 2019, https://www.iaisweb.org/page/consultations/closed-consultations/2018/overall-comframe. *See also* IAIS, *Cover Note for Draft Overall ComFrame Released for Public Consultation on 31 July 2018*, https://www.iaisweb.org/page/consultations/closed-consultations/2018/overall-comframe/file/76108/draft-overall-comframe-for-public-consultation.

[207] "Public Consultation: Revisions related to the Holistic Framework for Systemic Risk in the Insurance Sector," IAIS, last updated June 15, 2019, https://www.iaisweb.org/page/consultations/closed-consultations/2019/revisions-related-to-holistic-framework-for-systemic-risk-in-the-insurance-sector.

[208] "Public Consultation: IAIS Supervisory Material," IAIS, last updated June 14, 2019, https://www.iaisweb.org/page/consultations/closed-consultations/2019/iais-supervisory-material.

recovery planning requirements for IAIGs in the ComFrame material in ICP 16 was entirely new material.

The IAIS currently intends to adopt the revised ICPs and ComFrame (including ICS Version 2.0) at the Annual General Meeting in November 2019. It should be noted that while ICS Version 2.0 is ultimately a part of ComFrame, it has not yet been integrated into ComFrame and will be adopted as a stand-alone document. The adoption of ComFrame will mark a major milestone for the IAIS. ComFrame was last adopted in 2014, and in many cases, the material was skeletal. The 2019 version is expected to be fully developed and, together with the ICPs, will present a complete framework for supervision of IAIGs.

4. Financial Crime: FCTF and FATF

Some international insurance work spans organizations, as in the area of financial crime. FIO's work on financial crime includes chairing the IAIS FCTF. In the capacity of chair of the FCTF, a member of FIO's staff also chairs the IAIS Observer Organization delegation to the FATF.

FATF is an inter-governmental body established in 1989 and has the objectives of setting standards and promoting effective implementation of legal, regulatory, and operational measures to combat money laundering, terrorist financing, and certain other threats.[209] In its capacity as an IAIS observer, FIO participated in recent work of a FATF drafting group culminating in the October 2018 publication of FATF's *Risk-based Approach Guidance for the Life Insurance Sector*.[210] The FATF guidance: highlights that the money laundering and terrorist financing risk assessment should reflect the nature, size, and complexity of the business; stresses the importance of the involvement of senior management; and aims to support the design and implementation of the risk-based approach for the life insurance sector.

At the IAIS, FCTF's work in recent years has focused primarily on insurance industry cybersecurity.[211] For example, in August 2016, the IAIS released its *Issues Paper on Cyber Risk to the Insurance Sector*,[212] which was developed by the FCTF under FIO leadership. The *Issues Paper* recommended that the IAIS follow up on that work by developing an Application Paper "further exploring cyber risk . . . and proposing supervisory practices for the insurance sector."

[209] *See* "Who We Are," FATF, http://www.fatf-gafi.org/about/.

[210] FATF, *Risk-Based Approach Guidance for the Life Insurance Sector* (2018), http://www.fatf-gafi.org/publications/fatfrecommendations/documents/rba-life-insurance.html.

[211] *See, e.g.*, FIO, *2018 Annual Report*, 32.

[212] IAIS, *Issues Paper on Cyber Risk to the Insurance Sector* (2016), https://www.iaisweb.org/file/61857/issues-paper-on-cyber-risk-to-the-insurance-sector.

That project was assigned to the FCTF and, following a public comment period,[213] the IAIS published its *Application Paper on Supervision of Insurer Cybersecurity* in November 2018.[214]

Upon completion and publication of the new FATF *Guidance* in 2018, the FCTF began its work on reviewing and updating ICP 22 (Anti-Money Laundering and Combatting the Financing of Terrorism).[215] On June 28, 2019, the IAIS held a telephonic public information session addressing supervisory materials, including ICP 22, which was released as a draft in advance of the call.[216] During the call, the FCTF Chair introduced the proposed revisions and explained the general approach to this work taken by the FCTF, including enhancing emphasis on and contextualization of the "risk based approach" to supervision of anti-money laundering and countering the financing of terrorism consistent with FATF standards. Following receipt of written comments in August 2019, the FCTF intends to further consider the draft revisions to ICP 22, which is planned for finalization and publication in connection with the IAIS General Meeting in November 2019.[217]

5. Increasing Transparency at the IAIS

In November 2018, Treasury and the Federal Reserve jointly published a report on their efforts to increase transparency at IAIS meetings.[218] The Transparency Report explained that, although the IAIS has taken initial steps to improve stakeholder transparency, Treasury and the Federal Reserve support further increasing transparency and stakeholder input into IAIS decisionmaking. It noted that Team USA work collaboratively to develop their positions with input from U.S. stakeholders and advocate for international standards that are in the best interests of the United States. The Transparency Report also recognized that any international standards adopted by the IAIS are not binding or operational in the United States unless implemented through the relevant state or federal legislative or administrative process, as appropriate.

FIO continues its work to increase transparency at the IAIS. FIO staff helped to develop the IAIS Strategic Plan, discussed in Section IV.A.2 of this Report, which includes "Transparency"

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[213] "Public Consultation: Application Paper on Supervision of Insurer Cybersecurity," IAIS, last updated November 8, 2018, https://www.iaisweb.org/page/consultations/closed-consultations/2018/application-paper-on-cyber-security.

[214] For more on this Application Paper, *see* Section III.C.2 of this Report.

[215] IAIS, *Newsletter* (October 2018), 6, https://www.iaisweb.org/page/news/newsletter-archive/file/77466/iais-newsletter-october-2018; IAIS, *Newsletter* (January 2019), 8, https://www.iaisweb.org/page/news/newsletter/file/79801/iais-newsletter-january-2019.

[216] "Public Consultation: IAIS Supervisory Material," IAIS, last updated June 14, 2019, https://www.iaisweb.org/page/consultations/closed-consultations/2019/iais-supervisory-material; IAIS, *Revisions to the IAIS Supervisory Material (redline)* (June 2019), 207-220; https://www.iaisweb.org/page/consultations/closed-consultations/2019/iais-supervisory-material/file/82746/revisions-to-the-iais-supervisory-material-redline1.

[217] Consistent with IAIS practice, in connection with finalization of the updated ICPs, the FCTF will provide public feedback regarding resolution of comments received.

[218] Treasury and Federal Reserve, *Transparency Report*, 1.

as one of its five High-Level Goals. In addition, as described in Section I.B.2 of this Report, in May 2019 FIO hosted a stakeholder meeting on IAIS work with other members of Team USA. FIO will continue to work with its Team USA colleagues to expand opportunities for robust engagement with U.S. stakeholders to inform international policy priorities in connection with insurance. Treasury will continue to provide formal and informal opportunities for U.S. stakeholders to engage with U.S. members of the IAIS on issues arising before the IAIS.

B. Covered Agreements with the European Union and with the United Kingdom

1. Background and Agreement with the European Union

In September 2017, Secretary Mnuchin and the United States Trade Representative, Ambassador Robert E. Lighthizer, together with EU officials, signed the Bilateral Agreement between the United States of America and the European Union on Prudential Measures Regarding Insurance and Reinsurance, generally known in the United States as the U.S.-EU Covered Agreement.[219] A covered agreement is an international bilateral or multilateral agreement on insurance or reinsurance that "relates to the recognition of prudential measures" and that "achieves a level of protection for insurance or reinsurance consumers that is substantially equivalent to the level of protection achieved" under U.S. state-based regulation.[220] The U.S.-EU Covered Agreement was the first covered agreement ever entered into by the United States, pursuant to the FIO Act, and it is the only such agreement currently in force.[221]

The U.S.-EU Covered Agreement addresses three areas of prudential insurance supervision: group supervision; reinsurance, including reinsurance collateral; and exchange of information between supervisory authorities. As discussed in detail in FIO's 2018 Annual Report,[222] the agreement is an important achievement, which resolves on a national basis longstanding

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[219] Treasury, "Treasury, USTR Sign Covered Agreement on Prudential Insurance and Reinsurance Measures with the European Union," news release, September 26, 2017, https://home.treasury.gov/news/press-releases/sm0164. For the agreement text, *see* "Bilateral Agreement between the United States of America and the European Union on Prudential Measures Regarding Insurance and Reinsurance," https://www.state.gov/18-404/. Background information and a collection of related documents are also accessible on Treasury's website. "Initiatives: U.S. and EU Covered Agreement," Treasury, last updated November 13, 2017, https://www.treasury.gov/initiatives/fio/Pages/EU_Covered_Agreement.aspx.

[220] FIO Act, 31 U.S.C. § 313(r)(2).

[221] Pursuant to Article 8 thereof, the U.S.-EU Covered Agreement entered into force on April 4, 2018. *See Notice Concerning the Entry into Force of the Bilateral Agreement between the European Union and the United States of America on Prudential Measures Regarding Insurance and Reinsurance*, 2018 O.J. (L 91), https://eur-lex.europa.eu/legal-content/EN/TXT/?toc=OJ%3AL%3A2018%3A091%3ATOC&uri=uriserv%3AOJ.L_.2018.091.01.0001.01.ENG. In anticipation of Brexit, the United States and the United Kingdom signed a covered agreement in December 2018, which largely mirrors the U.S.-EU Covered Agreement, but it has not entered into force. *See* discussion in Section IV.B.2 of this Report.

[222] *See* FIO, *2018 Annual Report*, 41-55.

concerns arising both from the prudential approach concerning credit for reinsurance of U.S. states to insurers that cede business to EU reinsurers,[223] and from the prudential approach of EU member states to U.S. insurance groups conducting business in the EU.[224] The agreement addresses these matters while protecting consumers and affirming the U.S. system of insurance regulation, including the role of state insurance regulators as the primary supervisors of the business of insurance in the United States.[225] As stated by Secretary Mnuchin at the time of signing: "By providing regulatory clarity and reducing regulatory burden, the Agreement enables American companies to be more competitive in the EU, enhances opportunities for U.S. insurers and reinsurers at home and abroad, and furthers the administration's goal of sustained economic growth."[226]

Under the agreement, the EU agrees, among other things, not to apply aspects of its prudential approach to solvency regulation to U.S. insurers and reinsurers operating in the EU. Instead, the agreement establishes specific conditions whereby both the EU and the United States will respect the group supervision of the home country as to group capital, governance, and reporting. Among other benefits, a U.S. insurer will now be able to operate in the EU without subjecting its U.S. parent to costly worldwide group capital requirements, which may otherwise have been applicable under EU law, and U.S. reinsurers will not be required to establish a local EU presence in order to assume business from EU ceding insurers.[227]

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[223] "Credit for reinsurance" describes the degree to which, under U.S. statutory insurance accounting, ceding insurers are permitted to recognize transfers of risk to reinsurers as reductions of policy liabilities or as assets, thereby freeing up regulatory capital to support new and existing business. FIO, *The Breadth and Scope of the Global Reinsurance Market and the Critical Role Such Market Plays in Supporting Insurance in the United States* (2014), 11, https://www.treasury.gov/initiatives/fio/reports-and-notices/Documents/FIO%20-Reinsurance%20Report.pdf (*Reinsurance Report*).

[224] *See generally* FIO, *2018 Annual Report*, 41-45, and materials cited therein.

[225] Treasury and USTR advised Congress in 2015 that achievement of a covered agreement with the EU would "further confirm that the existing U.S. insurance regulatory system serves the goals of insurance sector oversight, policyholder protection, and national and global financial stability." Letter from Anne Wall, Assistant Secretary for Legislative Affairs, Department of the Treasury and Mike Harney, Assistant U.S. Trade Representative for Congressional Affairs, USTR, to Senator Richard Shelby, *et al.* (November 20, 2015), https://www.treasury.gov/initiatives/fio/reports-and-notices/Documents/Covered%20Agreement%20Letters%20to%20Congress.pdf.

[226] Treasury, "Treasury, USTR Sign Covered Agreement on Prudential Insurance and Reinsurance Measures with the European Union," news release, September 26, 2017. *See also* Treasury, "Joint Statement on Upcoming Signature of the Bilateral Agreement between the European Union and the United States of America on Prudential Measures Regarding Insurance and Reinsurance," news release, September 22, 2017, https://home.treasury.gov/news/press-releases/sm0163.

[227] Reinsurance is the subject of Article 3 of the U.S.-EU Covered Agreement. Group Supervision is addressed in Article 4 of the U.S.-EU Covered Agreement.

2. Agreement with the United Kingdom

In last year's Annual Report, FIO highlighted the importance of maintaining continuity on prudential insurance matters with the United Kingdom as it prepared to exit the EU, including with respect to the matters addressed by the U.S.-EU Covered Agreement.[228] As the UK is one of the world's largest insurance markets, and as its insurers and reinsurers are important sources of capacity in the United States, there are clear benefits to both the United States and the UK for proactively preparing for effects of the UK's withdrawal from the EU on its bilateral insurance relationships with the United States.[229]

Accordingly, building on the success of the U.S.-EU Covered Agreement negotiations, and to maintain regulatory certainty and market continuity, in 2018 the United States and the UK negotiated a covered agreement.[230] This agreement was submitted to Congress on December 11, 2018[231] and signed by Secretary Mnuchin, Ambassador Lighthizer, and the UK Ambassador to the United States on December 18, 2018.[232] Consistent with steps taken when the United States signed the U.S.-EU Covered Agreement in 2017, the United States also published a U.S. policy statement regarding implementation of the U.S.-UK Covered Agreement.[233] Upon conclusion of the negotiations, Treasury and USTR summarized the undertaking with the United Kingdom as follows:

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228 *See* FIO, *2018 Annual Report*, 53-55.

229 FIO, *2018 Annual Report*, 55. *See also* Treasury, *Insurance EO Report*, 140 ("Given the benefits associated with the U.S.-EU Covered Agreement … should the [UK] withdraw from the EU, the United States should consider whether it would be mutually beneficial for the United States and the UK to enter into negotiations on prudential insurance and reinsurance matters, similar to those addressed by the U.S.-EU Covered Agreement.").

230 Bilateral Agreement between the United States of America and the United Kingdom on Prudential Measures Regarding Insurance and Reinsurance (December 18, 2018), https://home.treasury.gov/system/files/136/20181218-US-UK-Covered-Agreement.pdf.

231 Letters from Steven T. Mnuchin, Secretary of the Treasury and Robert E. Lighthizer, United States Trade Representative, to Chair and to the Ranking Member of the four committees of jurisdiction (December 11, 2018), https://home.treasury.gov/system/files/136/US-UK_Covered_Agreement-Final-Hill-12-11-18.pdf (transmitting final legal text of the covered agreement between the United States and the United Kingdom).

232 Treasury, "Treasury, USTR Sign Bilateral Agreement with the United Kingdom on Prudential Measures Regarding Insurance and Reinsurance," news release, December 19, 2018, https://home.treasury.gov/index.php/news/press-releases/sm580; Treasury, "Joint Statement on Signing the Bilateral Agreement on Prudential Measures Regarding Insurance and Reinsurance," news release, December 19, 2018, https://home.treasury.gov/news/press-releases/sm579. As noted in the December 11 letters, Treasury and USTR first notified Congress of their intent to enter into negotiations with the United Kingdom on October 6, 2018. *See also* Letters from Secretary Mnuchin and Ambassador Lighthizer to Chair and to the Ranking Member of the four committees of jurisdiction (November 6, 2018) (confirming commencement of negotiations with the United Kingdom).

233 *Statement of the United States on the Covered Agreement with the United Kingdom* (December 18, 2018), https://home.treasury.gov/system/files/136/US_Policy_Statement_US-UK18%20December%202018.pdf.

> The U.S.-UK Covered Agreement is an important step in providing regulatory certainty and market continuity as the United Kingdom prepares to leave the European Union in March 2019, as well as in making U.S. companies more competitive in domestic and foreign markets and making regulations more efficient, effective, and appropriately tailored. The U.S.-UK Covered Agreement also benefits the U.S. economy and consumers by affirming the U.S. state-based system of insurance regulation and increasing growth opportunities for U.S. insurers.[234]

The agreement with the UK is based upon the provisions of the U.S.-EU Covered Agreement, and incorporates the respective timeframes of the U.S.-EU Covered Agreement. For example, the U.S.-UK Covered Agreement "shall apply" per Article 10 on the later of its date of entry into force or 60 months from 22 September, 2017 (i.e., 22 September 2022) -- which is 60 months after the date that the U.S.-EU Covered Agreement was signed (and is therefore the same date on which the U.S.-EU Covered Agreement shall apply under Article 10 of that agreement). Similarly, provided that the U.S.-UK Covered Agreement has entered into force, the relevant dates under that agreement concerning, for example: (1) U.S. reinsurance collateral elimination; (2) the commencement and conclusion of preemption analysis by FIO; and (3) group supervision provisions, all occur on the same dates as they do for the analogous provisions under the U.S.-EU Covered Agreement.[235]

In the same way, provided that the U.S.-UK Covered Agreement enters into force, all of the benefits received by the United States and its insurance sector under the U.S.-EU Covered Agreement, and the related obligations of the EU, will continue to be in place as between the United States and the UK as the provisions and respective timeframes would have applied under the agreement with the EU. The U.S.-UK Covered Agreement also contains an additional provision that the Parties shall consult with the Agreement's "Joint Committee" within 90 days of entry into force.[236]

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[234] Treasury, "Treasury, USTR Finalize Bilateral Agreement with the UK on Prudential Measures Regarding Insurance and Reinsurance," news release, December 11, 2018, https://home.treasury.gov/news/press-releases/sm570.

[235] To take another example, under Article 10, Paragraph 2(e) of the U.S.-UK Covered Agreement, even if U.S. insurance and reinsurance groups with operation in the UK are not yet subject to a group capital assessment in the United States (as described in Article 4 Paragraph (h) of the U.S.-UK Covered Agreement), the UK will not impose a group capital requirement at the level of the worldwide parent undertaking of the insurance or reinsurance group, with regard to such U.S. group, during the period from the date of entry into force of the U.S.-UK Covered Agreement until November 7, 2022. The latter date (November 7, 2022) is 60 months from the date on which the U.S.-EU Covered Agreement became provisionally applicable. *Compare* U.S.-EU Covered Agreement, Article 10, Paragraph 2(e) of the ("from the date of provisional application … and for 60 months thereafter"). The U.S.-EU Covered Agreement became provisionally applicable on November 7, 2017. *See* FIO, *2018 Annual Report*, 48.

[236] U.S.-UK Covered Agreement, Article 7, Paragraph 7.

The statutory Congressional "layover" period for the U.S.-UK Covered Agreement concluded 90 days following the December 11, 2018 transmittal to Congress of the final text of the agreement.[237] As of August 31, 2019, the UK has not yet left the EU. Accordingly, the U.S.-UK Covered Agreement has not yet entered into force.

3. Progress of the States

Because the business of insurance in the United States is principally regulated by the U.S. states, successful implementation of these covered agreements on a uniform national basis contemplates action by each of the states to conform relevant laws to the provisions of the agreements, particularly regarding the conditions for elimination of collateral requirements applicable to EU reinsurers accepting business from U.S. ceding insurers (and, similarly, applicable in the case of cessions to UK reinsurers once the U.S.-UK Covered Agreement enters into force). If that does not occur within the implementation periods set out in the agreements,[238] state insurance measures that are inconsistent with the reinsurance provisions of the agreement may be preempted by the covered agreement in accordance with the FIO Act.[239]

In last year's Annual Report, FIO noted that after the U.S.-EU Covered Agreement was signed, the states, through the NAIC, had made considerable progress toward setting the stage for state implementation.[240] Progress discussed included commencement by the NAIC of a transparent process to develop revisions to its Credit for Reinsurance Model Law (#785) and Regulation (#786) and the NAIC's continued work on a GCC.[241]

That progress by the NAIC and the U.S. states has continued over the last year and with respect to reinsurance collateral has moved to the next phase of implementation. Work on the model law and regulation, which is led by the NAIC's Financial Condition Committee and its Reinsurance Task Force, began after a public hearing held by the NAIC in February 2018 and the Executive Committee's formal approval in April 2018 to commence the project. On June 25, 2019, the NAIC adopted revisions to its Credit for Reinsurance Model Law and Regulations intended to

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[237] *See* 31 U.S.C. § 314(c) (submission and layover provisions).

[238] Under Article 9, Paragraph 4 of the U.S.-EU Covered Agreement, the United States is obligated to begin evaluating state laws for potential preemption not later than the first day of the month, 42 months after the date the agreement was signed, i.e., by March 1, 2021. The United States "shall complete any necessary preemption determination" not later than the first day of the month, 60 months after signature (September 1, 2022). *See also* U.S.-EU Covered Agreement, Article 10, Paragraph 2(d).

[239] Subject to certain procedures, including providing notice and an opportunity for public comment, a state insurance measure shall be preempted by a covered agreement if the FIO Director determines that it results in less favorable treatment of a non-United States insurer domiciled in a foreign jurisdiction that is subject to a covered agreement than a United States insurer domiciled, licensed, or otherwise admitted in that state, and is inconsistent with the covered agreement. 31 U.S.C. § 313(f).

[240] *See* FIO, *2018 Annual Report*, 44-51.

[241] FIO, *2018 Annual Report*, 45-48.

"make the models consistent with provisions of covered agreements with the European Union and United Kingdom with respect to reinsurance collateral requirements."[242] Upon this approval of the revisions to the NAIC Credit for Reinsurance Model Law (#785) and Regulation (#786),[243] NAIC President and Maine Insurance Superintendent Eric Cioppa stated, "I encourage my colleagues to work with their state legislatures to pass these updates quickly."[244]

In view of the obligation of the United States under the U.S.-EU Covered Agreement to encourage each U.S. state to promptly implement revisions to credit for reinsurance laws and regulation consistent with Article 3 of the agreement,[245] on July 12, 2019, the FIO Director addressed the National Council of Insurance Legislators (NCOIL) at their Summer National Meeting, during which he emphasized the need for prompt action.[246] At that meeting, NCOIL's Joint State-Federal Relations & International Insurance Issues Committee passed a resolution stating: "NCOIL renews its strong support for the Reinsurance Models and urges all States to adopt the Models, as amended."[247]

Similarly, in August 2019, at least four relevant NAIC committees and task forces confirmed support for the model revisions and emphasized the importance of timely state-by-state action to adopt the revised credit for reinsurance model law and regulations. For example:

- The NAIC Reinsurance Task Force adopted the minutes of its May 15, 2019 meeting. At the May 15, 2019 meeting, the Task Force adopted the credit for reinsurance model law and regulation revisions, and addressed the importance for states to

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242 NAIC, "NAIC Updates to Credit for Reinsurance Model Law and Regulation," news release, June 25, 2019, https://www.naic.org/Releases/2019_docs/credit_reinsurance_model.htm.

243 The revised models, in redlined text, are currently available in materials posted by the NAIC: Reinsurance Task Force: Credit for Reinsurance Model Law - Redlined (NAIC July 15, 2019), https://naic-cms.org/sites/default/files/inline-files/MO785%20redlined%206-25-19.pdf; Credit for Reinsurance Model Regulation—Redlined (NAIC July 15, 2019), https://naic-cms.org/sites/default/files/inline-files/MO786%20redlined%206-25-19.pdf. The NAIC maintains a compendium of its model laws and regulations on its website: "NAIC Model Laws, Regulations, Guidelines and Other Resources," NAIC, https://www.naic.org/prod_serv_model_laws.htm.

244 "NAIC Updates to Credit for Reinsurance Model Law and Regulation," news release.

245 U.S.-EU Covered Agreement, Article 9, Paragraph 3(b).

246 NCOIL, "2019 NCOIL Summer Meeting in Newport Beach a Success," news release, July 15, 2019, http://ncoil.org/2019/07/15/2019-ncoil-summer-meeting-in-newport-beach-a-success/.

247 NCOIL, "Resolution in Continued Support of the National Association of Insurance Commissioners (NAIC) Credit for Reinsurance Model Law and Regulation," http://ncoil.org/wp-content/uploads/2019/07/reinsurance-resolution-newport-beach.pdf. *See also NCOIL Joint State-Federal Relations and International Insurance Issues Committee, Newport Beach, California, Draft Minutes* (July 11, 2019), http://ncoil.org/wp-content/uploads/2019/07/Joint-Cmte-Minutes-Newport-Beach-FINAL.pdf (noting adoption of the resolution).

implement the model law and regulation revisions as soon as possible. The Task Force also discussed the model revisions as an accreditation standard.[248]

- The NAIC Financial Regulation & Accreditation Committee encouraged states to begin immediate and uniform adoption of the revisions, without regard to the timing of inclusion of the new revisions to models #785 and #786 as accreditation standards.[249]
- The Financial Condition Committee adopted the minutes of its May 28, 2019 meeting at which it had adopted the credit for reinsurance model law and regulation revisions; and adopted the report of the meeting of the Reinsurance Task Force described above.[250]
- The NAIC Executive Committee and Plenary, meeting in joint session, adopted the minutes of their June 25, 2019 joint session at which they had adopted the credit for reinsurance model law and regulation revisions.[251]

Additionally, progress by the U.S. states on the GCC, through the NAIC, continues to be an area of importance to the ultimate success of the U.S.-EU Covered Agreement. Under the U.S.-EU Covered Agreement, if U.S. insurance supervisors do not develop and implement a group capital assessment applicable to U.S. groups with EU insurance or reinsurance operations, EU regulators would not be barred from imposing Solvency II group capital requirements on such groups.[252] As further discussed in Section II.A.1 of this Report, in May 2019 the NAIC began field testing the aggregation-based GCC that it has been developing since 2017.

[248] NAIC, *Reinsurance (E) Task Force Draft Minutes* (August 9, 2019), https://www.naic.org/meetings1908/cmte_e_reinsurance_2019_summer_nm_minutes.pdf. *See also* NAIC, *Reinsurance (E) Task Force Meeting Summary Report* (August 4, 2019), https://www.naic.org/meetings1908/cmte_e_reinsurance_2019_summer_nm_summary.pdf.

[249] NAIC, *Financial Regulation Standards and Accreditation (F) Committee Draft Minutes* (August 8, 2019), https://www.naic.org/meetings1908/f_cmte.pdf. *See also* NAIC, *Financial Regulation Standards and Accreditation (F) Committee Meeting Summary Report* (August 3, 2019), https://www.naic.org/meetings1908/cmte_f_2019_summer_nm_summary.pdf.

[250] NAIC, *Financial Condition (E) Committee Meeting Draft Minutes* (August 6, 2019), https://www.naic.org/meetings1908/e_cmte.pdf. *See also* NAIC, *Financial Condition (E) Committee Meeting Summary Report* (August 5, 2019), https://www.naic.org/meetings1908/cmte_e_2019_summer_nm_summary.pdf.

[251] NAIC, *Executive (EX) Committee and Plenary Draft Minutes* (August 20, 2019), https://www.naic.org/meetings1908/cmte_ex_plenary_2019_summer_nm_minutes.pdf. *See also* NAIC, *Executive (EX) Committee and Plenary Meeting Summary Report* (August 6, 2019), https://www.naic.org/meetings1908/cmte_ex_plenary_2019_summer_nm_summary.pdf.

[252] *See* FIO, *2018 Annual Report*, 47; U.S.-EU Covered Agreement, Article 10.

4. The Path Forward on U.S. Implementation

Completion of the work of the states, through the NAIC, to develop revised models to conform with the U.S.-EU Covered Agreement is a key milestone in the U.S. implementation of the agreement. However, important steps remain to be taken by U.S. state legislatures and insurance supervisors in order to achieve full U.S. compliance in accordance with the agreement's timeline, and thereby maintain the benefits of the agreement for both sides. As Secretary Mnuchin stated in a speech in May, "successful implementation of the U.S.-EU covered agreement contemplates action by each of the states to conform relevant laws to the provisions of the agreement."[253]

In order to ensure that the benefits obtained by the United States under the U.S.-EU Covered Agreement are realized for the long term, FIO will continue to encourage timely progress by the U.S. states on the steps that are necessary to ensure the United States complies with its obligations under the agreement. As the U.S. states move forward with implementation, FIO intends to remain a helpful resource to the states.

In the coming months, FIO will be focusing on its obligations—consistent with the timing under the agreement—to ensure that each state conforms its laws to the terms of the agreement, and that any "state insurance measures," that is "[s]tate law[s], regulation[s], administrative ruling[s], bulletin[s], guideline[s], or practice[s] relating to or affecting prudential measures applicable to insurance or reinsurance," in accordance with the definition of "state insurance measure" in the FIO Act, are not inconsistent with the U.S.-EU Covered Agreement. For example, FIO will be looking to each state not only to amend its laws and regulations to conform to the U.S.-EU Covered Agreement, but to administer its laws and regulations in a manner that conforms to Article 3 of the U.S.-EU Covered Agreement concerning reinsurance. Under the agreement, not later than September 1, 2022, the United States shall complete any necessary preemption determination, which FIO will undertake—in accordance with the statutory provisions set forth in 31 U.S.C. § 313(f) [254]— with respect to any state insurance measure that is inconsistent with the agreement and results in less favorable treatment of an EU reinsurer than a U.S. reinsurer.[255]

FIO will be monitoring the implementation progress of the U.S. states, on a state-by-state basis. In the coming months, FIO will be asking both the NAIC and NCOIL to assist in this aspect by providing FIO with real-time status information on the state law and regulation amendment process. This information will assist FIO in meeting the U.S. commitment to encourage the

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[253] Secretary Mnuchin International Forum Remarks.

[254] *See* note 239 above. Among other requirements concerning preemption, the FIO Act includes provisions for consultation, notice, and hearing concerning a potential inconsistency, and for the FIO Director to consider whether the inconsistency still exists, prior to a preemption determination becoming final. 31 U.S.C. § 313(f)(2). In addition, under 31 U.S.C. § 313(n)(1), the FIO Director is required to make a report to Congress not later than September 30 of each year, identifying preemption steps that have been taken.

[255] U.S.-EU Covered Agreement, Article 9, Paragraph 4. This paragraph also calls on the United States to prioritize under its preemption evaluation the insurance measures of those states with the highest volume of gross ceded reinsurance.

states to act expeditiously, allowing FIO to prioritize federal steps, and maintaining FIO's ability to keep the covered agreement counterparties up to date on developments in the United States.

Following full implementation and application of the U.S.-EU Covered Agreement on a timely basis, the United States is committed to ensuring the ongoing fulfillment of its commitments under the agreement, including by closely monitoring state insurance measures to ensure a measure is not inconsistent with the agreement. For example, this means monitoring to ensure that the obligations under Article 3 (reinsurance) are carried out by each state in practice and as an ongoing matter, including with respect to ensuring that supervisory practices related to a measure are not inconsistent with the agreement. To facilitate this monitoring, FIO will engage affirmatively on a regular basis with state insurance regulators and their representatives, and FIO and USTR will closely consult with state insurance regulators and their representatives if a case arises in which a covered agreement counterparty suggests that a state insurance measure is inconsistent with the agreement. FIO and USTR intend to work cooperatively with the U.S. states and their representatives in this process.

5. Engagement with the European Union

Article 7 of the U.S.-EU Covered Agreement establishes a "Joint Committee" and calls for it to meet at least once within 180 days after the earlier of the date of entry into force or provisional application of the agreement, and to meet at least once a year thereafter. The United States and the EU held the first meeting of the Joint Committee on March 6, 2018, in Brussels, shortly before the agreement came into force.[256] The Joint Committee met again, in Washington, on April 2, 2019.[257] In addition to officials from Treasury and USTR, U.S. participants at the second meeting included two U.S. state insurance commissioners (who are also senior NAIC officers). For the European Union, attendees included representatives of the EU's Directorate-General for Financial Stability, Financial Services and Capital Markets Union (DG-FSMA), the EU delegation to the United States, and the European Union Insurance and Occupational Pensions Authority (EIOPA). Pursuant to the U.S.-EU Covered Agreement, the Joint Committee "provide[s] the Parties with a forum for consultation and to exchange information on the administration of the Agreement and its proper implementation."[258] Accordingly, at the April 2019 meeting, the U.S. and EU participants provided updates on each party's implementation with respect to reinsurance, group supervision, and exchange of information.

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[256] Treasury, "First Joint Committee Meeting Under the Bilateral Agreement between the European Union and The United States of America on Prudential Measures Regarding Insurance and Reinsurance," news release, March 27, 2018, https://home.treasury.gov/news/press-releases/sm0334.

[257] Treasury, "Second Joint Committee Meeting Under the Bilateral Agreement between the United States of America and the European Union on Prudential Measures Regarding Insurance and Reinsurance," news release, April 12, 2019, https://home.treasury.gov/news/press-releases/sm652. A representative from the U.S. Federal Reserve also participated in this Joint Committee meeting.

[258] U.S.-EU Covered Agreement, Article 7.

Under Article 10 of the agreement, the EU is obligated to ensure that within two years from signature, i.e., September 22, 2019, its member states have revised applicable laws to implement the provisions of Article 3, Paragraph 3. These provisions permit U.S. reinsurers to assume business from EU ceding insurers without establishing a "local presence" in the EU, as otherwise could be required by an EU member state when an assuming reinsurer is not from either an EU member state or a supervisory jurisdiction deemed equivalent pursuant to the Solvency II Directive.[259] No EU member states are enforcing such provisions any longer as regards business ceded to U.S. reinsurers.[260] Further, Treasury and USTR were advised at the April 2019 Joint Committee meeting that it would now be unlawful under EU law for an EU member state to enforce such restrictions against U.S. reinsurers.

At the April 2019 Joint Committee meeting, both sides acknowledged progress to date on implementation, reconfirmed their commitments to full and timely implementation with respect to all provisions of the agreement, and also reaffirmed their commitment to continuous review of progress on the U.S.-EU Covered Agreement and close coordination between the two sides. To this end, Treasury appreciates EIOPA's announcement in April 2018 that monitoring and ensuring consistent implementation by EU member states is among its "priorities,"[261] and welcomes its recommitment and progress report as of April 2019.[262]

6. Certain Jurisdictions that are not Party to a Covered Agreement

The revised Credit for Reinsurance Model Law (#785) and Regulation (#786) adopted by the NAIC in June 2019 incorporate a two-part structure for collateral elimination requirements in the case of applicable reinsurers from non-U.S. "reciprocal jurisdictions," defined as either: (1) a non-U.S. jurisdiction that has entered into a covered agreement with the United States; or (2) an NAIC qualified jurisdiction[263] which is not party to a covered agreement but meets certain additional specified requirements intended to be aligned with the U.S.-EU Covered

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[259] U.S.-EU Covered Agreement, Article 10, Paragraph 2(g).

[260] *See* FIO, *2018 Annual Report*, 50-51.

[261] EIOPA, *Supervisory Convergence Plan 2018-2019* (2018), 3, https://eiopa.europa.eu/Publications/Reports/Supervisory%20Convergence%20Plan%202018-2019.pdf.

[262] EIOPA, *Report on Supervisory Activities in 2018* (2019), https://eiopa.europa.eu/Publications/Reports/EIOPA_2018_SupervisoryActivities_April2019.pdf.

[263] A "qualified jurisdiction" is one which the states, through the NAIC, have determined meets certain standards concerning prudential supervision and other matters, such that U.S. insurers ceding risk to NAIC "certified reinsurers" from such qualified jurisdiction may be permitted to recognize full credit for reinsurance while the reinsurer posts a specified reduced percentage of reinsurance collateral. A jurisdiction may be added to the qualified jurisdiction list maintained by the NAIC based on evaluations performed by NAIC committees and staff. It is up to individual states, however, to determine whether to treat a jurisdiction as "qualified." *See generally* NAIC, *Process for Developing and Maintaining the NAIC List of Qualified Jurisdictions* (2014), https://naic-cms.org/sites/default/files/inline-files/committees_e_reinsurance_related_qualified_jurisdictions_final_130827.pdf.

Agreement.[264] At present, the NAIC qualified jurisdictions other than those from the EU (including the UK) are Bermuda, Switzerland, and Japan. The new model law and regulation revisions anticipate analysis by the states (facilitated by the NAIC) to determine whether these qualified jurisdictions meet the conditions in the revised models (which are based in large measure on the U.S.-EU Covered Agreement) for designation as "reciprocal jurisdictions" and, if so, whether reinsurers from those jurisdictions meet the conditions for designation as reciprocal reinsurers (also based on the terms of U.S.-EU Covered Agreement). If these provisions are adopted as law by the states, such designation would permit U.S. ceding insurers to receive full credit for cessions to this category of reciprocal reinsurer without necessity for collateral, thereby putting such reciprocal reinsurers on the same footing as regards state law reinsurance collateral requirements, as reciprocal reinsurers from jurisdictions which are party to a covered agreement with the United States.

FIO has long advocated for development and uniform implementation of collateral reform in the United States that is risk-based, rather than geographically-based.[265] Accordingly, in addition to its attention to adoption and implementation of the revised models with respect to the U.S.-EU Covered Agreement and U.S.-UK Covered Agreement, FIO intends to closely monitor state efforts to introduce collateral elimination on a wider and more uniform basis for reinsurers from jurisdictions which are not a party to a covered agreement but are eligible for classification by the NAIC as reciprocal jurisdictions. As such designation of a reciprocal jurisdiction is a new procedure, FIO has not expressed a view as to the effect of that designation in terms of benefits for U.S. insurers and reinsurers.[266]

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[264] Section 2.F(1)(a)(ii) of the approved revisions to the Credit for Reinsurance Model Law also defines a type of "reciprocal jurisdiction" within the United States as well, i.e., a U.S. state which meets the requirements for accreditation under the NAIC financial standards and accreditation program. For more on NAIC accreditation, *see* Section III.A.3.b of this Report.

[265] FIO, *How to Modernize and Improve the System of Insurance Regulation in the United States*, 37 (2013), https://www.treasury.gov/initiatives/fio/reports-and-notices/Documents/How%20to%20Modernize%20and%20Improve%20the%20System%20of%20Insurance%20Regulation%20in%20the%20United%20States.pdf.

[266] Expression of these reservations should not be read to imply doubts concerning the ability of the states under these revisions of law to effectively exercise prudential supervision and policyholder protection.

C. Insurance Dialogue Projects

1. EU-U.S. Insurance Project

FIO is continuing its work with the EU-U.S. Insurance Project, a collaborative effort among U.S. and EU insurance authorities to increase mutual understanding, enhance cooperation, and promote business opportunity, consumer protection, and effective supervision.[267] In addition to FIO, current members of the EU-U.S. Insurance Project include: the NAIC, state insurance commissioners, the Federal Reserve, EIOPA, ACPR/ Banque de France, BaFin, the Central Bank of Ireland, the De Nederlandsche Bank, the European Commission, and the Prudential Regulation Authority.

Beginning in 2017, the EU-U.S. Insurance Project focused on three topics: (1) insurer cybersecurity and the cyber risk insurance market; (2) the use and implications of big data in insurance underwriting; and (3) insurance-related intracompany transactions.[268] In October 2018, the EU-U.S. Insurance Project published papers on each of these three topics.[269] These papers served as a foundation for panel discussions at the EU-U.S. Insurance Project's sixth public event, a forum in Luxembourg on November 10, 2018.[270]

In 2019, the EU-U.S. Insurance Project continues to regularly discuss insurer cybersecurity, the cyber insurance market, and big data issues. The insurer cybersecurity workstream, for example, is discussing the development of a template for a supervisor exercise to help improve cooperation and coordination of cross-border response in the event of an international cyber incident. One possible outcome of this workstream could be a cybersecurity exercise, but one is not currently scheduled. The cyber insurance market workstream is examining non-affirmative cyber exposure and the potential for catastrophic losses; the challenges of reinsuring cyber risk; and the availability of cyber insurance data, including lessons learned from cyber data reporting

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[267] *See* EU-U.S. Dialogue Project, *EU-US Dialogue Project: The Way Forward, Objectives and Initiatives for the Future* (December 2012), https://www.treasury.gov/initiatives/fio/EU-US%20Insurance%20Project/Documents/eu_us_dialogue_wayforward_2012.pdf.

[268] For a more detailed description of 2018 target outcomes and deliverables, *see* EU-U.S. Dialogue Project, *EU-US Insurance Dialogue Project: New Initiatives for 2017-2019; Focus Areas for 2018* (2018), https://www.treasury.gov/initiatives/fio/EU-US%20Insurance%20Project/Documents/EU-US_Initiatives_2017-2019.pdf.

[269] EU-U.S. Insurance Dialogue Project, *Insurance Industry Cybersecurity Issues Paper* (2018), https://eiopa.europa.eu/Publications/Other%20Documents/181031%20EU-US%20Project%20Cybersecurity%20Paper_publication.pdf; EU-U.S. Insurance Dialogue Project, *The Cyber Insurance Market* (2018), https://eiopa.europa.eu/Publications/Other%20Documents/181031%20EU-US%20Project%20Cyber%20Insurance%20White%20Paper_publication.pdf; EU-U.S. Insurance Dialogue Project, *Big Data Issues Paper* (2018), https://eiopa.europa.eu/Publications/Other%20Documents/181031_EU%20US%20Big%20Data%20%20Issue%20Paper_Publication.pdf; EU-U.S. Insurance Dialogue Project, *Supervision of Intro-Group Transactions (IGTs)* (2018), https://eiopa.europa.eu/Publications/Other%20Documents/181031_EU%20US%20Project%20on%20IGTs_Key%20messages_publication.pdf.

[270] "Event—Public Forum: EU-U.S. Insurance Project," EIOPA, https://eiopa.europa.eu/Pages/Events/PUBLIC-FORUM-EU-US-INSURANCE-PROJECT.aspx.

in the United States and the potential for similar initiatives in the EU. The big data workstream is looking at third party vendor and other issues. The EU-U.S. Insurance Project also anticipates holding a seventh public event in Washington D.C. in early 2020.

2. U.S.-UK Insurance Project

Building on the EU-US Insurance Project and in light of the United Kingdom's withdrawal from the EU, FIO is starting a U.S.-UK Insurance Project with U.S. and UK insurance authorities that will, among other things, explore commonalities and differences between U.S. and UK insurance supervision. In view of the critical role that these markets serve for commercial and individual policyholders, officials in both jurisdictions have a shared interest in maintaining continuity with respect to insurance supervisory matters as the UK prepares to depart from the EU. To begin the dialogue, FIO has led introductory calls with the U.S. and UK authorities and has discussed how the work would mirror the EU-U.S. Insurance Project.

D. Financial Stability Board

The G-20 established the FSB in 2009 as its financial regulatory reform implementation organization, tasked with promoting the implementation of effective regulatory, supervisory, and other financial sector policies and coordinating the work of international standard-setting bodies, including the IAIS, "as they work toward developing strong regulatory, supervisory and other financial sector policies."[271] The FSB's membership consists of 68 institutions from 25 jurisdictions and ten international organizations and standard-setting bodies, including the IAIS.[272] Treasury, the Federal Reserve, and the SEC are the FSB's U.S. members.[273] Treasury's Office of International Affairs represents Treasury at the FSB. The current FSB Chair—as of December 2018—is the Federal Reserve Governor and Vice Chair for Supervision, Randal K. Quarles. FIO coordinates with the U.S. members on insurance matters discussed at the FSB.

In November 2018, the FSB welcomed the publication by the IAIS of the Holistic Framework.[274] The FSB also noted that in light of the progress that the IAIS has made on the Holistic Framework, the FSB, in consultation with the IAIS and national authorities, decided not to engage in an identification of G-SIIs in 2018.[275] Following the completion of the Holistic

[271] *See* Treasury, *Insurance EO Report*, 57-59, 130; "History of the FSB," FSB, http://www.fsb.org/history-of-the-fsb/; "About the FSB," FSB, http://www.fsb.org/about/#history.

[272] FSB, *5th Annual Report: 1 April 2017 – 31 March 2018* (2018), 1, 38, http://www.fsb.org/wp-content/uploads/P011218.pdf.

[273] FSB, *5th Annual Report*, 37; "Randal K. Quarles," FSB, http://www.fsb.org/profile/randal-k-quarles/.

[274] FSB, "FSB Welcomes IAIS Proposed Insurance Systemic Risk Framework and Decides Not to Engage in an Identification of G-SIIs in 2018," news release, November 14, 2018, https://www.fsb.org/2018/11/fsb-welcomes-iais-proposed-insurance-systemic-risk-framework-and-decides-not-to-engage-in-an-identification-of-g-siis-in-2018/.

[275] FSB, "FSB Welcomes IAIS Proposed Insurance Systemic Risk Framework."

Framework's development in November 2019, the FSB will assess the IAIS's recommendation to suspend G-SII identifications from 2020. In November 2022, the FSB will revisit the decision to publish an annual identification of G-SIIs based on the initial years of implementation of the Holistic Framework.[276]

E. OECD

Internationally, FIO also participates in the IPPC at the OECD. The OECD is a multilateral organization that serves as a source of advice on various policymaking and implementation matters, and collects and publishes statistical data and analyses on various topics. The U.S. delegation to the IPPC is made up of representatives from the U.S. Departments of Commerce and Labor, FIO, and state insurance regulators.

In early 2019, Yoshi Kawai of the Japan Financial Services Agency—the former founding and longstanding Secretary General of the IAIS—became the chair of the IPPC. At the December 2018 meeting, the U.S. Department of Labor's Assistant Secretary for the Employee Benefits Security Administration, Preston Rutledge, was elected to be a member of the bureau of the Working Party on Private Pensions, which works in coordination with the IPPC. Over the next few years, the IPPC is expected to continue to address issues relating to LTCI, reinsurance, best practices for insurance regulation, international insurance standards, and terrorism insurance. All of these issues touch on significant U.S. policy initiatives currently being led by Treasury, and it is important that FIO take an active leadership role in the international work on insurance matters at the OECD.

F. Bilateral Dialogue with India

FIO participates in the U.S.-India Financial Regulatory Dialogue, an annual meeting between U.S. Treasury and financial services regulators and their Indian counterparts to share information and perspectives on key regulatory issues. The 2019 meeting was held in Washington, D.C. on August 26-27. At this meeting, FIO and IRDAI signed an MOU that identifies the following shared goals: engaging in international standard-setting activities; promoting financial stability; sharing experiences on various regulatory functions; providing mutual assistance, such as by participating in training activities; and promoting other matters of interest to FIO and IRDAI. The MOU's purpose is to provide a framework for cooperation and coordination, including for the exchange, handling, protection, and return of information and, when appropriate, investigative assistance with respect to each office's oversight and other lawful responsibilities. The MOU also contains certain protective provisions for confidential information shared or exchanged between the offices and sets forth procedures for making or responding to requests for assistance by one party to the other. The MOU is significant in establishing and maintaining a constructive and mutually beneficial working relationship between FIO and IRDAI. FIO will work with IRDAI and stakeholders on next steps for implementation of the MOU.

[276] FSB, "FSB Welcomes IAIS Proposed Insurance Systemic Risk Framework."

V. ECONOMIC GROWTH AND INFORMED CHOICES

This Section V provides an update on regulatory developments at the federal and state levels relating to the standards of care for retail sales of insurance and other financial products. The section then reviews regulatory developments in retirement income and LTCI, as well as the state of the LTCI industry. The section concludes with a discussion of InsurTech, including an overview of the InsurTech market, a discussion of innovation and its impact on the insurance industry, and a description of key regulatory issues relating to InsurTech.

A. Standards of Conduct

Throughout 2018 and continuing into 2019, policymakers and multiple stakeholders continued to focus on the appropriate standard of care for the sale of retail investment products in the wake of a court decision vacating the Department of Labor's fiduciary rule in its entirety.[277]

On April 18, 2018, the SEC proposed a comprehensive package of rulemakings and interpretations to govern the standards of conduct applicable to broker-dealers and investment advisers that provide retail investment advice.[278] On June 5, 2019, after receiving thousands of public comments on the proposed package, the SEC adopted Regulation Best Interest (Regulation BI), which establishes a new standard of conduct for a broker-dealer when making a recommendation to a retail customer of any securities transaction or investment strategy involving securities—including, importantly, retirement plan rollover recommendations. The SEC also adopted: (i) a rule requiring that each broker-dealer and investment adviser send its retail clients and file with the SEC a "Client Relationship Summary" providing information about the broker-dealer or adviser; (ii) interpretive guidance on the fiduciary obligations of an investment adviser in serving its clients; and (iii) interpretive guidance concerning the ability of a broker-dealer to provide advice that is "solely incidental" to its transaction execution services without being required to register as an investment adviser.[279]

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[277] *Chamber of Commerce of the United States of America v. United States Department of Labor*, 885 F.3d 360 (5th Cir. 2018).

[278] Regulation Best Interest; Proposed Rule, 83 Fed. Reg. 21574 (May 9, 2018), https://www.gpo.gov/fdsys/pkg/FR-2018-05-09/pdf/2018-08582.pdf (proposing SEC Interpretation Regarding Standard of Conduct for Investment Advisers); Proposed Commission Interpretation Regarding Standard of Conduct for Investment Advisers; Request for Comment on Enhancing Investment Adviser Regulation, 83 Fed. Reg. 21203 (May 9, 2018), https://www.federalregister.gov/documents/2018/05/09/2018-08679/proposed-commission-interpretation-regarding-standard-of-conduct-for-investment-advisers-request-for; Form CRS Relationship Summary; Amendments to Form ADV, Required Disclosures in Retail Communications and Restrictions on the Use of Certain Names or Titles; Proposed Rule, 83 Fed. Reg. 21416 (May 9, 2018), https://www.gpo.gov/fdsys/pkg/FR-2018-05-09/pdf/2018-08583.pdf. *See also* FIO, *2018 Annual Report*, 57 (describing SEC proposals).

[279] Regulation Best Interest: The Broker-Dealer Standard of Conduct, 84 Fed. Reg. 33318 (July 12, 2019), https://www.federalregister.gov/documents/2019/07/12/2019-12164/regulation-best-interest-the-broker-dealer-standard-of-conduct.

In the insurance context, Regulation BI applies to broker-dealer firms and their sales representatives making recommendations to retail customers of any transaction or investment strategy involving variable annuities, variable life insurance, and other insurance products that are registered as securities with the SEC.

Although Regulation BI does not specifically define the term "best interest," it provides that broker-dealers and their registered representatives have a duty to act in the best interest of the client without putting their own interests ahead of those of the client. In announcing Regulation BI, the SEC stated that the new standard of conduct "substantially enhances the broker-dealer standard of conduct beyond existing suitability obligations" and draws from key fiduciary principles that cannot be satisfied through disclosure alone.[280] A broker-dealer can meet the standard by satisfying specified duties of: disclosure (providing full and fair written disclosure concerning its relationship with the customer, materials fees and costs, and conflicts of interest); care (exercising reasonable diligence, care, and skill); and conflict management (establishing, maintaining, and enforcing written policies and procedures reasonably designed to identify and disclose material facts about conflicts of interest, and in instances where disclosure is insufficient, to mitigate or, in certain instances, eliminate the conflict. Broker-dealers must fully comply with Regulation BI by June 30, 2020.

The response of state insurance regulators to the SEC's package of rulemakings and interpretations presents a key regulatory coordination challenge for the U.S. states. Regulation BI applies to insurance products registered as securities; it does not apply to unregistered products such as fixed annuities.[281] Accordingly, the states will decide the standard of conduct for insurance producers when recommending a fixed annuity to their customers.

In November 2017, partly in response to regulatory developments at the federal level, the NAIC's Annuity Suitability Working Group began work on revisions to the Suitability in Annuity Transactions Model Regulation with the goal of creating greater uniformity across the states. The NAIC has stated that a high degree of harmonization across regulatory platforms would be beneficial to consumers and the industry, and that it hopes to continue a productive dialogue with the SEC, the Department of Labor, and other financial regulators as updates to the

[280] SEC, "SEC Adopts Rules and Interpretations to Enhance Protections and Preserve Choice for Retail Investors in Their Relationships With Financial Professionals," news release, June 5, 2019, https://www.sec.gov/news/press-release/2019-89. The SEC sought to create a "fiduciary-like" standard that maintains the availability of the traditional commission-based broker-dealer business model. *See* 84 Fed. Reg. at 33330.

[281] The return on a variable annuity is based on the performance of underlying investment funds; by contrast, the return on a fixed annuity is based on a credited rate of interest (which may or may not depend on changes in a market index), subject to a minimum guarantee. The market for fixed annuities, and fixed indexed annuities in particular, has outpaced the variable annuity market in recent years. According to LIMRA data, new sales of variable annuities totaled $100 billion in 2018, while fixed annuity sales reached $133.5 billion (including $70 billion of indexed annuities).

respective standards of conduct governing the sale of annuity products are considered.[282] Following the SEC's proposal of Regulation BI in April 2018, the working group has focused on similarities and differences between the model regulation and Regulation BI, including whether the Model Regulation should define the term "best interest." At the NAIC's Summer National Meeting in August 2019, the working group expressed its intent to present a revised draft of the model regulation to its parent committee prior to or at the Fall National Meeting.[283]

On July 18, 2018, the New York Department of Financial Services (NYDFS) finalized Regulation 187, which imposes a best interest standard on the sale of both annuity and life insurance products in New York.[284] The regulation places a duty on the producer (or, where there is no producer, the life insurer) to ensure that a recommendation of an annuity or life insurance policy furthers the consumer's needs and objectives when taking into consideration *only* the interests of the consumer and without regard to the producer's or insurer's financial compensation or incentives. The regulation became effective for annuity contracts on August 1, 2019, and will become effective for life insurance products on February 1, 2020. It is unclear whether and to what extent other states may follow New York's lead with respect to a best interest standard. However, given the sharply different views across the states on the appropriate standard of care, and notwithstanding the efforts of the NAIC's working group, uniform adoption of a single standard appears unlikely.

B. Retirement Income

Congress has introduced two retirement security bills, the Setting Every Community Up for Retirement Enhancement (SECURE) Act of 2019 and the Retirement Enhancement and Savings Act of 2019 (RESA).[285] The SECURE Act and RESA contain substantially similar provisions to amend the Internal Revenue Code and the Employee Retirement Income Security Act of 1974 (ERISA) to modify requirements for tax-favored retirement savings accounts and employer-provided pension plans.

On August 4, 2019, the NAIC's Life Insurance and Annuity Committee voted to form a new working group to implement the committee's charge to explore ways to promote retirement

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[282] *See* "Annuity Suitability & Best Interest Standard," NAIC, last updated March 5, 2019, https://www.naic.org/cipr_topics/topic_annuity_suitability.htm.

[283] NAIC, *Meeting Summary Report*, *Annuity Suitability Working Group* (August 3, 2019), https://naic.org/meetings1908/cmte_a_aswg_2019_summer_nm_summary.pdf.

[284] NYDFS, 11 N.Y. Comp. Codes R. & Regs. Tit. 11, § 224 (July 17, 2018), https://www.dfs.ny.gov/docs/insurance/r_finala/2018/rf187a1txt.pdf.

[285] Setting Every Community Up for Retirement Enhancement Act of 2019, H.R. 1994, 116th Cong. (2019), https://www.congress.gov/bill/116th-congress/house-bill/1994; Retirement Enhancement and Savings Act of 2019, S. 972, H.R. 1007, 116th Cong. (2019), https://www.congress.gov/bill/116th-congress/senate-bill/972.

security consistent with the NAIC's Retirement Security Initiative.[286] The Retirement Security Initiative focuses on three major areas: Education, Consumer Protection, and Innovation.[287]

C. Long-Term Care Insurance

In recent years, Treasury and FIO have commented on the growing social need for long-term care and the sharp contraction of the private LTCI market.[288] As of year-end 2018, an estimated 4.7 million individual LTCI coverages were in force,[289] with LTCI policies paying $10.3 billion in claims to approximately 303,000 individuals during the year.[290] Despite these contributions, the market for traditional, stand-alone LTCI policies continued to decline in 2018, as annualized premiums for new sales totaled $169 million, eight percent lower than in 2017; and the estimated number of Americans purchasing new policies (57,000) dropped 15 percent from the prior year.[291] The number of insurers offering LTCI remained at an historical low (less than a dozen compared to more than 100 in the early 2000s).

As new sales of stand-alone LTCI policies continue to decline, some insurance distributors and consumers have turned to "combination" products, which combine a traditional life insurance policy (or less frequently, an annuity) with a long-term care benefit. After three consecutive years of premium growth, sales of individual life combination products slowed slightly in 2018, generating $4.3 billion in premiums, two percent lower than in 2017. However, new policy counts increased two percent year-over-year, with over 400,000 policies sold. Measured by new lives insured, combination products now represent more than 87 percent of the market for individual LTCI solutions.[292]

The financial performance of in-force LTCI policies remains a key issue for the insurance industry, investors, regulators, and policyholders. During 2018, LTCI carriers continued to increase their reserves (which are funds set aside to pay future claims), update the actuarial

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[286] NAIC, *Life Insurance and Annuity (A) Committee: Meeting Summary Report* (August 4, 2019), https://naic.org/meetings1908/cmte_a_2019_summer_nm_summary.pdf.

[287] *See* "Retirement Security," NAIC, last updated January 14, 2019, https://www.naic.org/cipr_topics/topic_retirement_security.htm.

[288] *See, e.g.*, Treasury, *Annual Report on the Insurance Industry* (2017), 83-88, https://www.treasury.gov/initiatives/fio/reports-and-notices/Documents/2017_FIO_Annual_Report.pdf *(2017 Annual Report*) Treasury, *Insurance EO Report*, 143; FIO, *2018 Annual Report*, 59-61.

[289] LIMRA, *U.S. Individual Long-Term Care Insurance (2018 Annual Review)* (April 25, 2019), 7.

[290] American Association for Long-Term Care Insurance, "Long Term Care Insurance Industry Paid $10.3 Billion in Claims in 2018," news release, January 14, 2019, http://www.aaltci.org/news/long-term-care-insurance-association-news/long-term-care-insurance-industry-paid-10-3-billion-in-claims-in-2018.

[291] LIMRA, *U.S. Individual Long-Term Care Insurance (2018 Annual Review)*, 3. According to LIMRA data, during the five-year period from 2014 through 2018, annualized new premiums for stand-alone LTCI decreased by 60 percent, while the annual number of newly-issued policies decreased by 67 percent.

[292] LIMRA, *U.S. Individual Life Combination Products (2018 Annual Review)* (July 10, 2019), 2, 10.

assumptions behind their reserves, and provide more detailed disclosures of their reserving methodologies.[293] One rating agency estimates that, because LTCI is a long-duration liability, most insurers will not reach their peak reserves for in-force business for another 10-15 years.[294] Accordingly, uncertainty about the profitability of in-force business will persist, and ultimately will depend largely on the accuracy of actuarial assumptions. This uncertainty, combined with negative trends in claims experience caused by increased longevity and other factors,[295] as well as ongoing questions regarding the ability to obtain regulatory approvals of premium rate increases, has led several major public companies to exit the LTCI market, creating a drain in capital.[296] Concerns over the financial solvency of certain insurers, and the potential impact of insolvencies on state insurance guaranty associations, are also an important consideration for this market.[297]

State insurance regulators and the NAIC are actively reviewing a range of LTCI issues and potential policy changes to help stabilize and potentially grow the private market. The NAIC has

[293] *See, e.g.*, GE, "GE Provides Update on Insurance Review; $6.2B After-Tax GAAP Charge in 4Q'17," news release, January 16, 2018, https://www.ge.com/investor-relations/sites/default/files/pressrelease%20insurance%20011618_1_0.pdf ($9.5 billion GAAP charge and estimated statutory capital contributions of $15 billion over seven years relating to closed block of LTCI reinsurance); Genworth Financial, "Genworth Financial Announces Fourth Quarter 2018 Results," news release, February 5, 2019, http://investor.genworth.com/investors/news-releases/archive/archive/2019/Genworth-Financial-Announces-Fourth-Quarter-2018-Results/default.aspx (largest issuer of in-force LTCI policies announces $327 million reserve increase based on annual review of assumptions and methodologies).

[294] S&P Global Ratings, *Following the Trail of U.S. Insurers' Long-Term Care Assumptions* (2019), 1, https://www.spratings.com/documents/20184/908539/LifeINSHT_Jan2419_Article4.pdf/2f9c6736-6f26-36ae-d32e-3f2d8c265818.

[295] The annual statutory loss ratio (the dollar amount of claims divided by premiums) rose from 55 percent in 2009 to almost 100 percent in 2017. S&P Global, *Following the Trail*.

[296] MetLife discontinued the sale of new LTCI coverage in 2010; Prudential followed suit in 2012; Unum stopped selling new individual LTCI policies in 2009 and new group LTCI policies in 2012; and John Hancock discontinued new LTCI sales in 2016. By 2018, none of the top five LTCI writers were owned by a public company; only one was organized as a stock company, and the other four were either mutual or fraternal insurers. By contrast, in 2009, six of the top ten LTCI writers were owned by public companies.

[297] For example, a Pennsylvania-domiciled LTCI insurer is operating under a corrective action plan with the Pennsylvania Department of Insurance. The insurer reported a net loss of $500 million in 2018, including a $359 million addition of premium deficiency reserves for the year, resulting in a negative $470 million capital and surplus position as of December 31, 2018. Tim Zawacki, "LTC Insurer Faces Corrective Action Plan After Posting Large Surplus Deficit," *S&P Global Market Intelligence*, April 8, 2019, https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/51012284. This development follows the court-ordered liquidation of two LTCI subsidiaries of Penn Treaty Corporation in March 2017, resulting in state guaranty association liabilities of approximately $3 billion to be paid out over decades. *See* National Organization of Life and Health Insurance Guaranty Associations, "Guaranty System to Provide Safety Net for Policyholders of Penn Treaty/American Network Insurance Companies," news release, March 1, 2017, https://www.nolhga.com/resource/file/NOLHGAPennTreatyPressReleaseFINAL.pdf. When an insurer is liquidated, certain remaining claims are paid by the state guaranty association system and funded by assessments on solvent insurers in the relevant states.

identified LTCI as the organization's top priority for 2019, and formed an Executive Task Force on LTCI to focus on "developing a consistent national approach for reviewing long-term care insurance rates that result[s] in actuarially appropriate increases being granted by the states in a timely manner, and eliminates cross-state rate subsidization."[298] The task force is also responsible for identifying options to provide choices for consumers regarding modifications to LTCI contract benefits where policies are no longer affordable due to rate increases. At the 2019 Summer National Meeting, the task force organized workstreams on six different topics. The first workstream is a multistate review of rate review practices, which is the centerpiece of the task force and will focus on different actuarial methodologies used by the states. The second workstream will explore alternatives for protecting policyholders from caps on state guaranty association coverage and potential inequities arising from the states' inconsistent approaches to premium rate increase requests. The third workstream will focus on ensuring that policyholders understand their options when faced with a rate increase. The fourth workstream will evaluate the interaction between rate increase issues and reserving issues. The fifth workstream will address non-actuarial variances among the states when reviewing rate increases. The sixth workstream will consider whether the task force needs additional data to support its work. The task force intends to deliver a report on these issues to the NAIC Executive Committee by the 2020 Fall National Meeting.[299]

State legislators and policymakers are also considering and implementing new approaches to the challenges of financing long-term care. In May 2019, Washington State signed into law the Long Term Care Trust Act.[300] The Act provides an employment-based lifetime LTCI benefit of $36,500, indexed annually for inflation. The insurance covers services such as personal aides providing care at home, outfitting a home with a wheelchair ramp or similar support, adult day care, nursing home care, and residential options including an adult family home or assisted living facility. Beneficiaries can also use the benefit to provide financial support to family caregivers. Beginning in 2025, workers will be able to access their benefits after paying (via payroll withholding) into the program for ten years with no more than a five year break (or use alternative vesting by paying into the program for three of the last six years). Benefits will be funded by a payroll tax on employees of 58 cents per $100 of wages beginning January 1, 2022. The program is optional for self-employed workers. In a separate state initiative, Minnesota is reviewing two LTCI reform ideas: (1) a product targeted at middle-income consumers that begins as a traditional term life insurance policy but automatically converts the death benefit into LTCI at retirement age; and (2) creating a package of home care benefits—such as home-

[298] "Long-Term Care Insurance (EX) Task Force," NAIC, https://naic-cms.org/cmte_ex_ltci_tf.htm.

[299] Hailey Ross, "NAIC Looks to Model Laws to Smooth Out LTC Rate Inconsistency Across States," *S&P Global Market Intelligence*, August 7, 2019, https://platform.mi.spglobal.com/web/client?auth=inherit#news/article?id=53355050.

[300] *See* Dena Bunis, "Washington State Enacts Public Long-Term Care Insurance," *AARP*, May 14, 2019, https://www.aarp.org/politics-society/advocacy/info-2019/washington-long-term-care-law.html; *see also* "Long Term Care Trust Act Factsheet," Washingtonians for a Responsible Future, https://www.agingwashington.org/files/2019/02/2019-Long-Term-Care-Trust-Act-Factsheet.pdf.

delivered meals, housekeeping, some personal care services, and caregiver respite—and allowing the package to be offered on an added premium basis in Medigap and Medicare Advantage so it is complementary to Medicare.[301] Other states are actively considering a range of new approaches to the challenges of financing long-term care.

As provided in the Insurance EO Report, Treasury has convened an inter-agency task force led by Treasury's Office of Economic Policy and including FIO, tax experts within Treasury, and representatives of the Department of Health and Human Services, the Centers for Medicare & Medicaid Services, the Internal Revenue Service, the Department of Labor, and the Office of Management and Budget.[302] The purpose of the task force is to develop policies to complement reforms at the state level relating to the regulation of LTCI.[303] The task force was organized in 2018 and has been reviewing various proposals to reform federal laws and regulations relating to regulation of LTCI, including the ten federal policy options presented to Congress for its consideration by the NAIC in April 2017.[304] The task force has consulted with a range of stakeholders, including trade groups, insurance companies and insurance product distributors, consumer and other advocacy groups, actuaries, academics, legal experts, state insurance regulators and the NAIC, and others with relevant knowledge. As part of its stakeholder engagement, the task force held a public meeting on July 25, 2019, and invited the public to submit written comments by August 30, 2019. The task force has also reviewed data, research, and published materials from private and public sources. The task force currently expects to issue a written report with its findings and recommendations in late 2019 or early 2020.

FIO will continue to monitor efforts at the federal and state levels (including the NAIC) to strengthen the private LTCI market while continuing to protect consumers, and will encourage federal and state policymakers to work with industry, consumer groups, and other stakeholders to more effectively regulate LTCI. For example, FIO will continue to monitor the extent to which the NAIC and the U.S. states are able to develop a consistent national approach for reviewing LTCI rates that results in actuarially-appropriate increases being granted by the states in a timely manner, and eliminates cross-state subsidization.

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[301] *See* Howard Gleckman, "Minnesota Considers Two New Ways To Pay For Long-Term Care," *Forbes*, December 18, 2018, https://www.forbes.com/sites/howardgleckman/2018/12/14/minnesota-considers-two-new-ways-to-pay-for-long-term-care/.

[302] "Federal Interagency Task Force on Long-Term Care Insurance," Treasury, https://home.treasury.gov/policy-issues/economic-policy/economic-policy-reports-and-notices/federal-interagency-task-force-on-long-term-care-insurance.

[303] *See* Treasury, *Insurance EO Report*, 144.

[304] NAIC, *Long-Term Care Innovation (B) Subgroup: Federal Policy Options to Present to Congress* (April 2017), https://www.naic.org/documents/cmte_b_senior_issues_related_ltc_federal_policy_issues.pdf.

D. InsurTech

"InsurTech," the insurance analogue to "Fintech," can be defined as the innovative use of technology in connection with insurance. InsurTech encompasses diverse technological developments, including: AI and other forms of machine learning; "big data"—that is, the ability to gather large volumes of data, often from multiple sources, and produce new kinds of observations, measurements, and predictions with such data;[305] blockchain (distributed ledger technology); cloud infrastructure; drones; IoT; smartphone apps; and peer-to-peer, usage-based, and on-demand insurance. While advances in insurance industry technology have matured more slowly than in other areas of financial services, there has been increasing momentum over the last few years. For example, by one count there are now approximately 1,500 InsurTech startups operating globally, with over $9 billion in disclosed capital commitments to InsurTech investments over the past five years.[306]

FIO has been monitoring and reporting on InsurTech issues for several years, including identifying areas of potential competitive or regulatory concern for regulators, policymakers, the private sector, and consumers.[307] In addition, Treasury's FACI (discussed in Section III.A.4 of this Report) has addressed InsurTech-related topics at several meetings, such as the May 2018 meeting discussing blockchain initiatives and InsurTech accelerators.[308]

More recently, FIO engaged in extensive stakeholder outreach and analysis of InsurTech. This new initiative was preceded by Treasury's Fintech EO Report, which concluded that lawmakers, policymakers, and regulators should:

> take coordinated steps to encourage the development of innovative insurance products and practices in the United States. Domestically, this includes consideration of improving product speed to market, creating increased regulatory flexibility, and harmonizing inconsistent laws and regulations. Treasury's Federal Insurance Office … should work closely with state insurance regulators, the NAIC, and federal agencies on InsurTech issues. [309]

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[305] *See, e.g.*, FIO, *Report on Protection of Insurance Consumers and Access to Insurance* (2016), 5, https://www.treasury.gov/initiatives/fio/reports-and-notices/Documents/2016_FIO_Consumer_Report.pdf.

[306] Jackson Mueller, *InsurTech Rising: A Profile of the InsurTech Landscape* (2018), 3, https://assets1b.milkeninstitute.org/assets/Publication/Viewpoint/PDF/InsurTech-Rising-12.4.18.pdf.

[307] *See, e.g.*, FIO, *2017 Annual Report*, 63-70; FIO, *2018 Annual Report*, 61-64.

[308] Open Meeting of the Federal Advisory Committee on Insurance, 83 Fed. Reg. 19140 (May 1, 2018), https://www.federalregister.gov/documents/2018/05/01/2018-09217/open-meeting-of-the-federal-advisory-committee-on-insurance. *See also* "Federal Advisory Committee on Insurance (FACI)," Treasury, last updated August 28, 2019, https://www.treasury.gov/initiatives/fio/Pages/faci.aspx.

[309] Treasury, *Fintech EO Report*, 144.

In the spring and summer of 2019, FIO discussed InsurTech issues with over three dozen insurance industry stakeholders, including insurers, reinsurers, InsurTech startups, tech companies, accelerators/incubators, trade associations, academics, consumer groups, consultants, and lawyers. While various policymakers are examining InsurTech issues,[310] FIO, through its role as the source of insurance expertise in the federal government, can provide a national perspective on these important issues. To that end, this Report provides a summary and analysis of FIO's recent InsurTech outreach and InsurTech-related work, organized around three topics: (1) market overview, (2) innovation and its impact, and (3) regulatory frameworks and reforms. Increasing amounts of data and digitalization also present issues relating to cyber insurance and cybersecurity; those issues are separately addressed in Section III.C of this Report.

1. Market Overview

InsurTech has gained prominence in the past ten years, as investment in the insurance sector specifically targeted towards technology has risen.[311] InsurTech startups have received significant investments and significant attention, with some viewing "InsurTech" as synonymous with "startup."

InsurTech startups generally fall into one of three categories: (1) "full stack," (2) managing general agents (MGAs), or (3) technology service providers (TSPs).[312] A full stack company is a fully-licensed insurer that underwrites its own policies, assumes the risk, and typically also manages the claims process. An MGA, in contrast, may be the sole company to directly interact with a customer, but partners with an insurer that will assume the risk and ultimate liability for any claims. MGAs may work with a single insurer, serving as an "agent" platform for that insurer, or they may provide customers with a choice of insurers and thus serve as a "broker" platform. TSPs can provide a variety of services throughout the insurance value chain, which typically includes the elements shown in Figure 4.

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[310] *See, e.g.*, U.S. Government Accountability Office, *Insurance Markets: Benefits and Challenges Presented by Innovative Uses of Technology* (2019), https://www.gao.gov/assets/700/699561.pdf; House Committee on Financial Services, "Committee Passes Bills to Promote Innovation, Strengthen the Financial System and Protect Consumers, Small Businesses and Investors," news release, May 9, 2019, https://financialservices.house.gov/news/documentsingle.aspx?DocumentID=403739 (noting the passage of resolutions to establish the Task Force on Financial Technology and the Task Force on Artificial Intelligence); "InsurTech, Innovation & Technology," NAIC, https://www.naic.org/index_innovation_technology.htm.

[311] *See, e.g.*, Mueller, *InsurTech Rising*, 3 (noting that startups' "growth and proliferation . . . began to accelerate in 2010, largely driven by an increase in venture capital funding").

[312] *See, e.g.*, Mueller, *InsurTech Rising*, 5-6.

Figure 4: Insurance Value Chain

Source: FIO

InsurTech startups are involved in product offerings throughout the insurance industry, including auto insurance, life insurance, homeowners and renters insurance, title insurance, commercial insurance, travel insurance, and specialty products. Stakeholders noted, however, that most InsurTech deals focus on personal lines, rather than commercial lines.[313] In addition, funding for innovation in life and annuity products generally lags behind that in P&C products.[314]

Sufficient capital is available for InsurTech startups and innovation investment. Figure 5 shows global InsurTech investment between 2012 and 2018. The second quarter of 2019 saw the announcement of 69 InsurTech deals with a total value of $1.41 billion—the fourth straight quarter with over $1 billion in InsurTech funding.[315]

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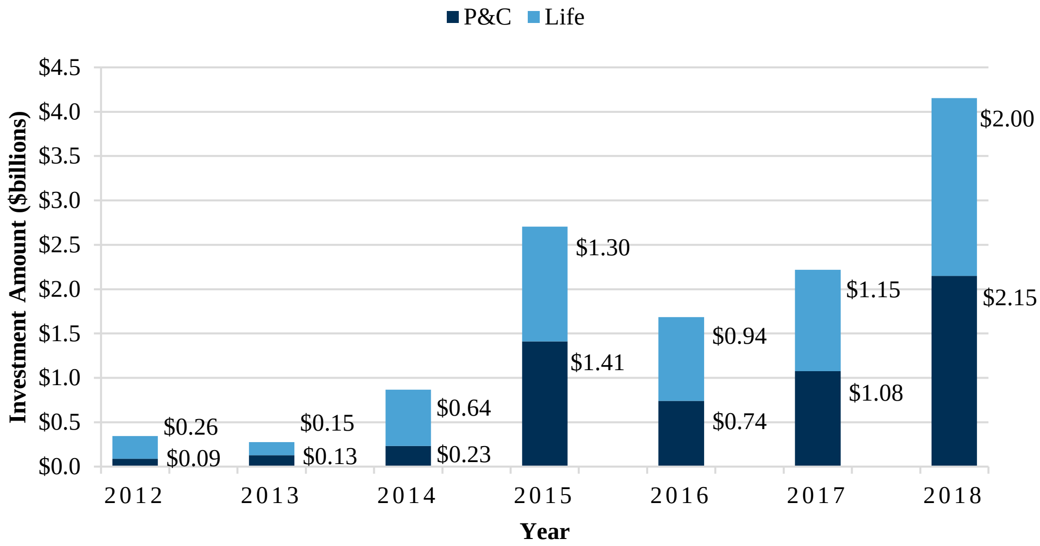
[313] *See also* Willis Towers Watson, Willis Re, and CB Insights, *Quarterly InsurTech Briefing Q2 2019* (2019), 28-35, https://www.willistowerswatson.com/en-US/Insights/2019/07/Quarterly-InsurTech-Briefing-Q2-2019 (listing InsurTech transactions in second quarter; based on descriptions, the majority of products involve personal lines than commercial lines, although they are not clearly delineated as such). The InsurTech startups getting the most press attention generally tend to be in the personal lines. *See, e.g.*, Tim Zawacki, "U.S. P&C Industry's Fastest-Growing Insurer Takes Root as InsurTech Flourishes," *S&P Global Market Intelligence*, May 29, 2019, https://platform.mi.spglobal.com/web/client?auth=inherit&overridecdc=1&#news/article?id=52020074&KeyProductLinkType=6. *Compare* "AI-Based InsurTech Cytora Raises $32.5 Million, With Focus on Commercial Insurance," *Carrier Management*, April 22, 2019, https://www.carriermanagement.com/news/2019/04/22/192346.htm.

[314] *See* Willis Towers Watson et al., *Quarterly InsurTech Briefing Q2 2019*, 28-35 (listing second quarter funding rounds totaling over $880 million involving 49 P&C InsurTech startups, as compared to funding rounds totaling over $300 million involving 18 L&H InsurTech startups).

[315] Willis Towers Watson et al., *Quarterly InsurTech Briefing Q2 2019*, 24.

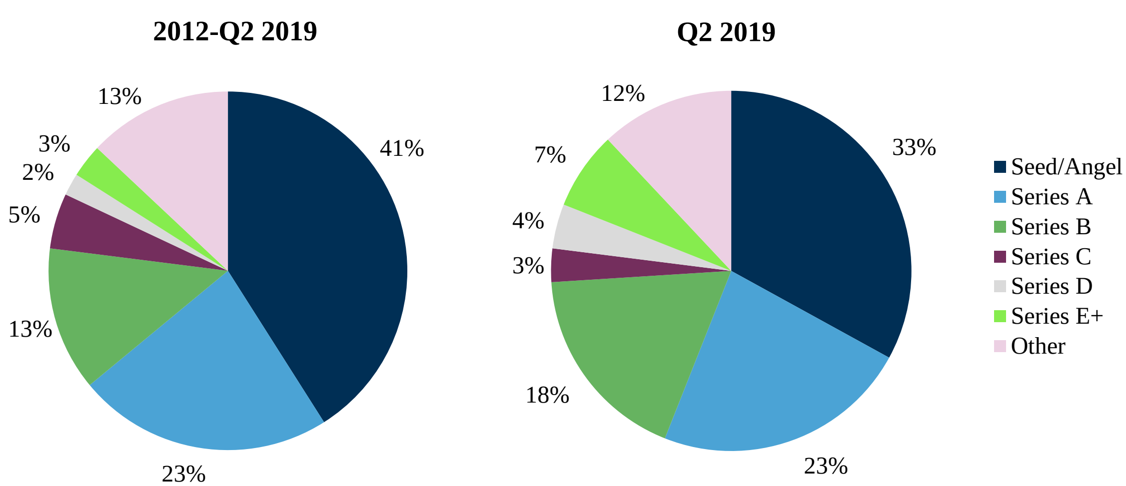
Figure 5: Global InsurTech Investments ($ billions)



Source: CB Insights; Willis Towers Watson

Observers have noted a "shift toward later-stage investments."[316] In the second quarter of 2019, "early stage funding volume hit its lowest market since Q3 2017, emphasizing the consolidation toward the later stages,"[317] as shown in Figure 6. However, even the most recent data demonstrate that over half of investments are in the early seed and Series A stages, rather than in the later Series B through E+ stages.

Figure 6: InsurTech Transactions by Investment Stage



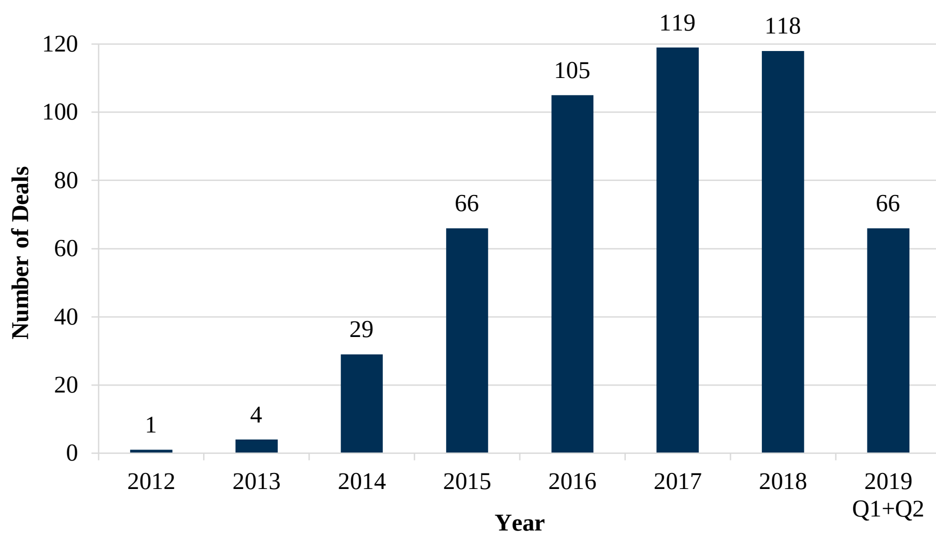
Source: Willis Towers Watson et al., *Quarterly InsurTech Briefing Q2 2019*, 27

[316] Willis Towers Watson et al., *Quarterly InsurTech Briefing Q2 2019*, 1.

[317] Willis Towers Watson et al., *Quarterly InsurTech Briefing Q2 2019*, 24.

While InsurTech startups are a significant part of the InsurTech landscape, established insurers, reinsurers, agents, and brokers (the "industry incumbents") also are significant InsurTech participants. Not only are industry incumbents innovators, they also are significant investors in technology, whether through: (1) an internal business unit focused on innovation; (2) an affiliated entity that makes venture capital deals; and/or (3) investing their own funds in InsurTech startups.[318] In the second quarter of 2019, the number of strategic technology investments by insurers and reinsurers hit a record high since the tracking of InsurTech deals began in 2012, as shown in Figure 7.[319]

Figure 7: Technology Investments by Insurers and Reinsurers (Number of Deals)



Source: Willis Towers Watson et al., *Quarterly InsurTech Briefing Q2 2019*, 37

Commentators have noted that, compared to other areas of Fintech, "the interaction between industry incumbents and new entrants in the development of InsurTech generally involves more cooperation and collaboration than direct competition and disruption."[320] Stakeholders generally agreed that InsurTech startups are not currently disrupting the insurance industry. For example, one recent analysis noted that less than 10 percent of InsurTech investments to date have flowed into startups targeting full-scale value chain disruption.[321]

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[318] *See, e.g.*, Mueller, *InsurTech Rising*, 10 ("Investment in InsurTech continues to climb, but unlike what we have seen in several other FinTech verticals, investment is increasingly driven by incumbents and not solely from the venture capital space").

[319] Willis Towers Watson et al., *Quarterly InsurTech Briefing Q2 2019*, 1, 25.

[320] Mueller, *InsurTech Rising*, 3.

[321] Mueller, *InsurTech Rising*, 11-12.

InsurTech startups' preferences for improving existing insurance industry structures—rather than disrupting them—is unsurprising. One study noted the "complementary strengths" of established insurers and InsurTech startups, with startups "offering better value for money and timely and efficient service" and established insurers "offering superior security, brand identity, and support for personal interaction."[322] Moreover, commentators have noted that while InsurTech startups "may be experts in harnessing new technology, they have little know-how when it comes to mainstay tasks like managing risk or navigating regulations. Nor do they have large capital reserves for scaling up the business."[323]

In the near term, most industry incumbents appear to have adopted a three-fold "build, partner, buy" InsurTech strategy: build capabilities in-house, partner with InsurTech startups, and buy InsurTech startups when warranted. They also often work with accelerators, incubators, and InsurTech hubs in these efforts.[324]

Industry incumbents are also seeking out technology to fulfill identified needs, rather than investing in promising technology without a specific need in mind. These needs include improving the customer experience, and improving efficiency in underwriting, claims handling, and other processes.

In sum, the InsurTech market is maturing. Private equity capital for InsurTech is plentiful, as shown in Figures 5 through 7. Partnerships, joint ventures, acquisitions, industry incumbents' in-house investments, and overall higher spending on TSPs are all fueling InsurTech growth. Additionally, insurers are increasingly discussing InsurTech issues at the senior executive level, with many industry incumbents creating innovation-specific positions such as Head of Innovation and Chief Digital Officer. Rating agencies are also increasingly stressing the importance of innovation.[325]

2. Innovation and its Impact on the Insurance Industry

Innovation and market adaptation have always been important within the insurance industry, although the pace of innovation in the InsurTech sector has lagged behind other areas of financial services. In this sense, InsurTech has helped provide a label to an ongoing evolution of insurers seeking to meet consumer demands and remain competitive. Given recent explosive growth in reliance on digital devices and processes in the economy and consumers' daily lives, it

[322] Capgemini and Efma, *World Insurance Report 2017* (2018), 7, https://worldinsurancereport.com/wp-content/uploads/sites/6/2018/10/World-Insurance-Report-2017.pdf.

[323] Capgemini and Efma, *World Insurance Report 2017*, 7.

[324] *See, e.g.*, Mueller, *InsurTech Rising*, 15-16.

[325] *See, e.g.*, A.M. Best, "AM Best Requests Comments on Draft Criteria: Scoring and Assessing Innovation," news release, March 14, 2019, http://news.ambest.com/presscontent.aspx?altsrc=108&refnum=27732.

is unsurprising to see that the pace of innovation has begun to accelerate within the insurance industry as well.[326]

The evolution of innovation generally can be divided into three stages. First, a company's "core" initiatives seek to improve on current product offerings to enhance the consumer experience. Next, "adjacent" offerings involve examining near-term developments (within the two- to seven-year range) which represent a natural outgrowth of the company's core offerings. Finally, a company's "transformational" offerings maintain a focus on creating innovative products and markets for the future.

Until recently, InsurTech has focused on core initiatives—such as streamlining distribution—and spent less time looking at adjacent and transformational offerings. Aging hardware and business infrastructure are key constraints restricting the industry's technological advancement. Larger insurers often develop new systems in parallel with their legacy systems, finding parallel development more efficient and cost-effective than attempting to upgrade existing systems. However, smaller insurers with fewer resources may find it more difficult to update their systems and remain competitive. Stakeholders cited additional reasons for the delay in industry-wide transformation, including regulatory constraints (discussed further in Section V.D.3 of this Report) and the general tendency of the insurance industry to adhere to its traditional processes. Rather than being "disruptive," these core technologies facilitate existing processes to enhance the customer experience and improve business workflows.[327] They may also pave the way for adjacent and transformational offerings.

The pace of modernization within the insurance industry reflects iterative approaches that are an essential part of innovation, allowing entities to create, learn, adapt, and grow before making significant investments in a certain technology. Many entities, particularly those with fewer resources, may also want more certainty about the future regulatory and market environment, and remain cautious about moving forward with new technology until it is proven effective and scalable. Stakeholders in the L&H sector, in particular, are cautious about innovation in underwriting because once a policy is issued, it can remain in force for decades. The pace of development also varies by line of insurance, with the majority of digital innovation occurring within personal lines of insurance, particularly in the area of distribution.

Despite these limitations, some insurers are actively looking to drive transformational change. Stakeholders have proposed a number of ways that technology could enhance various aspects of insurance, including underwriting, mitigation, operations, claims processing, and customer interactions. Some stakeholders noted that InsurTech may also expand the ability to underwrite previously "uninsurable" risks or persons by decreasing the cost of underwriting and making new risks more cost-effective. Other stakeholders noted that benefits to some consumers—whether in terms of pricing, availability, and user experience—might need to be balanced against increased pricing and reduced availability for other classes of consumers. The net effects of

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[326] *See* Bansi Nagji and Geoff Tuff, "Managing Your Innovation Portfolio," *Harvard Business Review*, May 2012, https://hbr.org/2012/05/managing-your-innovation-portfolio.

[327] *See* Mueller, *InsurTech Rising*, 25 ("At this point, InsurTech is simply driving greater efficiencies and offering multiple ways to address the lack of customer centricity embedded in the current insurance marketplace").

InsurTech and innovation on product availability and pricing for consumers will likely be the subject of further discussions among policymakers.

Any transformation of the insurance sector will also be driven by external factors. For example, as described below in Section V.D.2.e of this Report, the P&C industry will need to adapt to the new risks and benefits of autonomous vehicles. Stakeholders noted that the L&H industry will need to keep pace with medical innovations such as whole genome sequencing, liquid biopsies, electronic health records, epigenetics, and gene therapy.

As these examples suggest, the pace of InsurTech development and adoption will continue to vary by sector. While some forms of technology are applicable to both the P&C and L&H sectors, each sector has also adapted specified technologies to fulfill its needs. For example, a P&C insurer may focus on using wearables to reduce workplace accidents while a L&H insurer would apply similar technology to track fitness levels. Stakeholders also reported that the L&H sector generally lags behind the P&C sector in innovation, but suggested that technology applied in the P&C sector could be modified for application in the L&H sector in the future.[328]

a) Digital Distribution and Marketing

The distribution of insurance products is an area that has been regularly targeted for InsurTech advancement. Stakeholders indicated that the InsurTech startups receiving the most investments have focused on distribution.[329] Stakeholders also reported that incumbent insurers have improved their distribution channels by purchasing or partnering with startups, or building their own technology, modeled after innovations in the broader financial services sector.[330] Insurers have modified their distribution models in many ways, from the creation of smartphone apps, e-delivery, the use of chatbots, and the adoption of digital performance marketing through platforms such as Instagram and YouTube, to the deployment of application programming interfaces (APIs).

APIs provide new methods of distribution and mechanisms to reach new policyholders. They serve as a core infrastructure used to integrate and connect third-party application software and services.[331] APIs can introduce insurers to potential policyholders by bundling insurance with other types of products, allowing insurers to simplify and encourage the purchase of insurance products by offering a single point of entry for consumers. By offering products through APIs and alternative distribution channels, insurers can increase their potential reach by targeting consumers who would not otherwise consider purchasing insurance. Stakeholders described APIs and alternative distribution channels as ways to provide access to people who may know

[328] Accenture, *The Rise of InsurTech* (2017) 8, https://financialservices.accenture.com/rs/368-RMC-681/images/the-rise-of-insurtech-pov.pdf.

[329] *See also* Willis Towers Watson et al., *Quarterly InsurTech Briefing Q2 2019*, 24 (noting: "Distribution-focused start-ups continue to dominate deal count, recording 55% of deals in Q2 2019").

[330] Treasury's Fintech EO Report provides a broad overview of technological innovation in the broader financial services sector. *See generally* Treasury, *Fintech EO Report*.

[331] *See generally* "What are APIs," Red Hat, https://www.redhat.com/en/topics/api.

they "should" have insurance but have not taken action to obtain it. For example, there could be a time when combining an API (on, for example, a website that helps prospective parents prepare for the birth of a child) with accelerated underwriting could simplify the process sufficiently that an otherwise-reluctant individual would apply for a life insurance policy.

b) The Growth of Big Data and Complex Models

The potential applications of "big data" remains a critical issue for InsurTech. New data are becoming available at an exponential rate, and much of these data could be available for use by insurers. Reports estimate that 90 percent of the world's data have been created since 2016 and that, by 2025, 49 percent of the world's stored data will be located in public cloud environments.[332] Data generated in real-time are also expected to grow from 15 percent today to 30 percent by 2025, which will result in the increased availability of current and accurate data with big data applications.[333] Stakeholders identified information collected from IoT sensors, wearables, and online activity as potential data sources that could be mined to enhance underwriting capabilities and improve the consumer experience; in addition, third-party data vendors and sources (such as social media) provide access to additional sources of data.

Core innovation involving big data analytics has generally focused on improving the customer experience, but has not yet ventured to the same degree into underwriting. Stakeholders noted that new data sources already allow insurers to price risk by examining individual actions, such as using a telematics device to monitor an individual's driving habits rather than relying on actuarial studies based on aggregated historical data for similar classes of drivers. In the future, increased availability of data could allow insurers to create additional rate classes and price risk more accurately, and potentially provide coverage to individuals who were previously uninsurable or could only purchase insurance at steep rates. On the other hand, risk segmentation could also result in situations where insurers withdraw from certain markets and products may not be equally available to consumers. Covering additional risks would require new sources of capital, which may present additional hurdles for insurers. Further subdividing rate classes could also potentially lead to growth in the residual market—or result in rate classes so small they would effectively eliminate the risk pooling nature of insurance itself.

Currently, big data typically is processed through increasingly complex models. In addition, some stakeholders raised concerns that the complexity of big data models makes it extremely difficult to determine whether a certain data element is serving as a proxy for a prohibited discriminatory factor. Others countered that insurers have a long history of identifying unfairly

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[332] Bernard Mar, "How Much Data Do We Create Every Day? The Mind-Blowing Stats Everyone Should Read," *Forbes*, May 21, 2018, https://www.forbes.com/sites/bernardmarr/2018/05/21/how-much-data-do-we-create-every-day-the-mind-blowing-stats-everyone-should-read; David Reinsel, John Gantz, and John Rydning, *The Digitization of the World: From Edge to Core*, IDC (2018), 4, https://www.seagate.com/files/www-content/our-story/trends/files/idc-seagate-dataage-whitepaper.pdf.

[333] Reinsel et al., *Digitalization of the World*, 13.

discriminatory rating factors and therefore are well suited to do the same with any new data sources and models.

Policy discussions about the use of big data in insurance may be influenced by the outcome of ongoing debates about data ownership and privacy. For example, one issue is whether complex models can be created and maintained while complying with data privacy laws. (For more on data regulation, see Section V.D.3.c of this Report.) Given the importance of data in risk rating and underwriting, some stakeholders have advocated for federated data sources or data portability that allow consumers to take advantage of their data when they move to a new insurer.[334] As policymakers consider and adopt data privacy laws, an increasingly-important question will be how the rights of consumers to access their individual data will affect insurers' ability to use such data. As the quantity of available data exponentially increases, responsible management and maintenance to ensure data accuracy and security will be important issues.

c) Artificial Intelligence, Machine Learning, Deep Learning, and Predictive Analytics

AI, machine learning, and deep learning have significant potential to better harness the power of big data and improve the insurance value chain. These three concepts have distinct meanings. AI refers to the concept of using algorithms to create machines capable of handling complex or "smart" tasks. Machine learning is an advanced subset of AI in which machines make predictive calculations based on analysis of prior data; in a sense "learning" from previous data. Deep learning techniques—also known as "neural networks"—are an advanced form of machine learning that can be thought of as state-of-the-art technology designed to simulate human decision-making.[335]

Many insurers have already begun using AI techniques to communicate with customers through virtual assistants or chatbots, and several startups have developed their business models entirely around the use of AI communications. This development has occurred partially in response to

[334] Federated data is presented to a user in a single interface, but the data is decentralized and stored in external databases. Use of federated databases would allow multiple insurers to have access to the same data. *See generally* "Federated Systems," IBM Knowledge Center, https://www.ibm.com/support/knowledgecenter/en/SSFMBX/com.ibm.data.fluidquery.doc/topics/cfpint01.html.

[335] Because machine learning and deep learning are subsets of AI, the remainder of this section will use AI to refer to concepts involving AI, machine learning, and deep learning. For more on the primary differences between the concepts of AI, machine learning, and deep learning, *see* Bernard Marr, "What is the Difference Between Artificial Learning and Machine Learning?" *Forbes*, December 6, 2016, https://www.forbes.com/sites/bernardmarr/2016/12/06/what-is-the-difference-between-artificial-intelligence-and-machine-learning; Bernard Marr, "What's the Difference Between Deep Learning, Machine Learning and AI?," *Forbes*, December 8, 2016, https://www.forbes.com/sites/bernardmarr/2016/12/08/what-is-the-difference-between-deep-learning-machine-learning-and-ai.

consumer demand for non-traditional communication options that can be done via mobile app or website, rather than on the phone or in person.

Insurers are also using AI to perform a wide variety of tasks that could be burdensome and time-consuming for humans. For example, AI can be used to analyze policy language for new purposes, such as reviewing large numbers of in-force policies to identify the presence of non-affirmative cyber coverage.[336] According to one estimate, twenty percent of insurers have invested in AI technology to improve fraud detection capabilities.[337] Munich Re announced plans to use AI-enabled software to assess hurricane damage to insured homes, with the goal of expediting the payment of claims.[338] In the L&H sector, Verisk has partnered with a health data consolidation platform to review electronic health records, which will be leveraged for faster and more accurate policy underwriting.[339] Using AI may also lead to higher quality results: Aon has stated that its application of AI technology to gather data from historical insurance documents uncovered 170 million potential data points that will be used to understand the underlying causes of claims, determine loss ratios, and develop benchmarks, while the manual data extraction process lost 95 percent of valuable data.[340]

Predictive analytics is another area where AI has significant potential. Predictive analytics uses models created by algorithms that predict the likelihood of future risk. By applying AI technology, a model gains the ability to engage in automated pattern recognition and self-learning. The ability to develop predictive models that continuously refine themselves could result in faster and more accurate underwriting. Predictive analytics using AI remains in its infancy, and the industry will need to overcome challenges related to data quality and familiarity with the technology before its use will become widespread.[341] One constraint on using AI in

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[336] *See* Martin Davidson, "Silent Cyber: The Danger Lying Buried in Your Insurance Policy," *Insurance Times*, September 6, 2018, https://www.insurancetimes.co.uk/corporate-insight/silent-cyber-the-danger-lying-buried-in-your-insurance-policy/1428130.article. For more information on non-affirmative cyber coverage, *see* Section III.C.1 of this Report.

[337] Anne Rawland Gabriel, "Insurers' Anti-Fraud Tech Budgets on the Rise," *Digital Insurance*, April 8, 2019, https://www.dig-in.com/news/insurers-anti-fraud-tech-budgets-on-the-rise.

[338] Charlie Wood, "Munich Re to Deploy Hi-Res Imagery, AI for Faster Hurricane Claim Payments," *Reinsurance News*, April 30, 2019, https://www.reinsurancene.ws/munich-re-to-deploy-high-res-imagery-ai-for-faster-hurricane-claim-payments/.

[339] Charlie Wood, "Verisk Looks to Improve Life Insurance Underwriting with Human API Partnership," *Reinsurance News*, April 29, 2019, https://www.reinsurancene.ws/verisk-looks-to-improve-life-insurance-underwriting-with-human-api-partnership/.

[340] Luke Gallin, "Aon Uses Artificial Intelligence to Extract Critical Data Insights from Historical [Insurance] Documents," *Intelligent Insurer*, April 11, 2019, https://www.intelligentinsurer.com/news/aon-uses-artificial-intelligence-to-extract-critical-data-insights-from-historical-documents-18084.

[341] *See* Tom Bigham, et al., Deloitte, *AI and Risk Management: Innovating with Confidence* (2018), 5, 24, https://www2.deloitte.com/content/dam/Deloitte/lu/Documents/risk/lu-ai-and-risk-management.pdf (noting that "adoption of AI in [financial services] is still in its early stages" and "[a]n absence of large sets of high quality data is, in general, one of the major obstacles to the application of AI solutions.").

predictive analytics is that insurers are generally hesitant to mine external data sets for risk assessment purposes because the bulk of externally-generated data is unformatted and may represent incomplete data sets. This issue is compounded when considering third-party data sources. Increasing interest in InsurTech has attracted many generalist data brokers who may not understand how data is used in the insurance industry. Startups focusing on data analytics may not have an insurance background and may be ill-equipped to comply with the insurance regulatory framework and its data regulations. Although AI is making it easier for insurers to organize unstructured data, it remains difficult to determine which data elements may be predictive in nature for insurance purposes.[342] Going forward, policymakers will need to continue addressing issues related to big data management, use of federated data, and advances in AI sophistication.

d) Telematics and IoT Sensors

The use of telematics in auto insurance has been at the forefront of core InsurTech innovation. Personal auto insurance involves a relatively homogenous set of risks and the data received from telematics devices is easily translated into a level of risk. Initially, auto insurers primarily relied on plug-in devices to collect vehicle sensor data related to driving habits, such as acceleration, hard braking, speed, and mileage. More recently, many insurers have added the option for policyholders to use their mobile phones instead of a plug-in device. Not only does this allow insurers to track additional behaviors—such as phone usage while driving—it also gives insurers the opportunity to provide real-time feedback and encourage safer driving habits. In the future, the expanded use of mobile phones as telematics devices could provide new sources of data for auto insurers and other industry participants.

The popularity of vehicle telematics has served as a valuable example for scaling the use of sensors for other forms of insurance. Insurers are exploring the use of sensors in homeowners' insurance to alert homeowners of risks such as leaking pipes, fire, and theft. Insurers are also navigating the regulatory landscape to determine how IoT devices can be supplied to policyholders for mitigation purposes without violating anti-rebating statutes. (For more on anti-rebating reform proposals, see Section V.D.3.a of this Report.) However, growth in this area has been limited by the nature of IoT data. The majority of data received in a connected IoT ecosystem is unstructured, and insurers will only be able to better identify new ways to understand loss from this data once analytics capabilities have further matured.[343]

[342] Unstructured data is the term used to describe "free-form" data that does not adhere to strict organization or protocols, such as human speech or text. *See generally* Jayant Lakshmikanthan, "Role of Unstructured Data in AI," *Insurance Thought Leadership*, April 16, 2019, http://insurancethoughtleadership.com/role-of-unstructured-data-in-ai/.

[343] "A.M. Best Webinar: How the Internet of Things is Remaking Homeowners Insurance," April 24, 2019, http://www3.ambest.com/conferences/events/eventregister.aspx?event_id=WEB618.

IoT devices also highlight the tension between consumer demand for convenience and concerns about data privacy. Although over two-thirds of the world's population owns more than one IoT device, 63 percent of people have admitted to finding connected devices "creepy" and 75 percent expressed distrust in the way their data are shared.[344] The variety of data collected by IoT combined with this consumer distrust may create complications for insurers seeking to obtain informed consent to use IoT sensor data.

The popularity of "wearables" like smart watches and fitness trackers are also providing insurers with valuable sensor data. On the P&C side, stakeholders indicated that wearable sensors are being used to identify repetitive stress injuries and reduce workers' compensation claims. In the future, wearables could also have anti-fraud implications by providing data indicating where an individual was and what the individual was doing at the time of the claim. L&H insurers are also finding wearables a useful method of collecting health data and using this information to provide feedback to policyholders. One stakeholder from an L&H insurer added that wearables are creating coverage opportunities for individuals with chronic illness who were previously uninsurable.

As with vehicle telematics, insurers are hopeful that expanding use of sensors will enable them to provide real-time feedback to policyholders and mitigate risk. At the same time, these sensors can create new risks, some of which could be quite severe. Many studies have demonstrated the significant vulnerability of IoT technology to security threats.[345] Not only does a compromised device create cyber risk, it can interfere with the intended functions of the device to detect other risks such as fire, flood, or theft.[346]

As with other technologies, use of telematics and sensors is expected to continue to scale within personal lines and eventually find additional applications in commercial lines of insurance.

e) Emerging Technologies

Advancements in data and distribution are resulting in the development of emerging technologies. Because these technologies are unlikely to fully mature as core innovations, they will have the most impact as near-term and transformational innovations.

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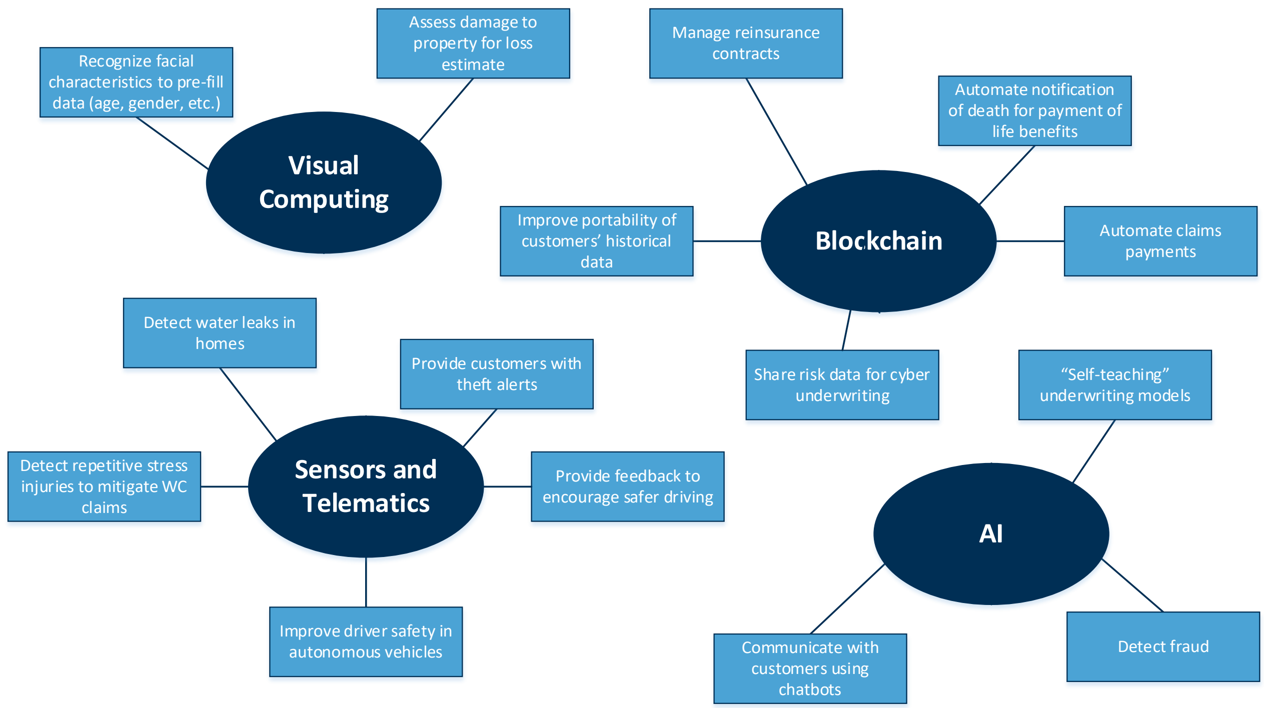
[344] Consumers International and the Internet Society, *The Trust Opportunity: Exploring Consumers' Attitudes to the Internet of Things* (2019), 3, 7, https://www.internetsociety.org/wp-content/uploads/2019/05/CI_IS_Joint_Report-EN.pdf.

[345] *See, e.g.*, Deepak Kumar et al., *All Things Considered: An Analysis of IoT Devices on Home Networks* (2019) https://press.avast.com/hubfs/stanford_avast_state_of_iot.pdf.

[346] Bako Ali and Ali Ismail Awad, "Cyber and Physical Security Vulnerability Assessment for IoT-Based Smart Homes," *Sensors*, March 8, 2018, 9, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5876893/pdf/sensors-18-00817.pdf.

Figure 8: Emerging Technologies



Source: FIO

Blockchain. The profile of blockchain as an emerging technology for insurance has increased in recent years.[347] The value of blockchain lies in its ability to make information on the blockchain universally accessible to all users in real-time. Blockchain has a variety of potential insurance and reinsurance applications. For example, in the future, blockchain technology could be used to manage reinsurance contracts and instantly pay out claims, verify claims information to reduce fraud, manage capital, or share information between regulators and insurers.[348] Stakeholders suggested that blockchain could be a good option for insurers who rely heavily on legacy systems, because they could "leapfrog" directly to blockchain technology when updating their systems. In addition, insurers currently underwrite the same risks in a variety of ways, and blockchains could encourage more standardization.

Blockchain technology also could be used to manage smart contracts. Smart contracts are programmed to execute automatically when a specified condition has been met. In the context of blockchain, the smart contract's code "can be stored and processed on a distributed ledger and . . . write any resulting change into the distributed ledger."[349] Parametric triggers are gaining

[347] For additional background information on blockchain, *see* FIO, *2018 Annual Report*, 62.

[348] *See* CB Insights, *How Blockchain Could Disrupt Insurance* (2019), https://www.cbinsights.com/research/blockchain-insurance-disruption/.

[349] Chamber of Digital Commerce, *Smart Contracts: Is the Law Ready?* (2018), 10, https://digitalchamber.org/smart-contracts-whitepaper/.

traction as an option for insuring against natural disasters, and stakeholders suggested that blockchain smart contracts could be used to quickly pay claims or cover policyholders' temporary expenses after a disaster occurs. A drawback is that parametric triggers do not result in payment tailored to the extent of loss; the pre-established payment amount will inevitably result in some form of overpayment (for policyholders who experienced minor loss) or underpayment (for policyholders who experienced severe loss).

Stakeholders noted that the potential use of blockchain will likely raise legal and regulatory concerns that will need to be resolved before blockchain will be a more viable technology for the insurance industry.[350] One of the biggest potential challenges for blockchain is how it will comply with emerging data privacy laws, as discussed further in Section V.D.3.c of this Report.

Auto Insurance Innovations. Changes in driving habits highlight the ways in which innovation can lead to transformational shifts in the insurance industry. In recent years, the increased consumer use of transportation network companies like Uber and Lyft has led to changes in the auto insurance market. Insurers are applying telematics technology to begin offering "pay-as-you-drive" policies for individuals using their cars less frequently as well as new types of coverage for individuals using their personal vehicles to provide ride-sharing services. The growth of the "gig economy" (in connection with transportation and other areas) also encouraged insurers to consider options for providing workers' compensation coverage for individuals who are generally classified as independent contractors.[351]

Autonomous vehicles will likely lead to future transformation in the auto insurance market and mobility in general.[352] Stakeholders estimate that fully autonomous vehicles remain at least a decade away, but advancements are already having an impact on the way auto insurance is offered.[353] Auto manufacturer Tesla recently announced that it intends to create a personal auto insurance policy for its vehicles with automated driver-assistance systems.[354] In addition to auto manufacturers offering their own insurance, changes in the nature of risk created by autonomous vehicles could shift the future focus of auto insurance from individual liability to product liability.[355]

Cyber. Cyber insurance (discussed in Section III.C of this Report) is another area that could lead to transformation in the insurance industry, as society's increased reliance on technology continues to increase cyber risks. However, the process of underwriting cyber coverage will also

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[350] *See* Mark Webb, "Blockchain, Privacy and Regulation," *Insurance Thought Leadership*, December 19, 2018, http://insurancethoughtleadership.com/blockchain-privacy-and-regulation/.

[351] *See* FIO, *2017 Annual Report*, 71-73.

[352] *See* FIO, *2017 Annual Report*, 71-72.

[353] Steve Sherretta, "Long Road Ahead: The Promise—and Perils—of Self-Driving Cars," interview with John Paul MacDuffie, *Knowledge@Wharton*, July 6, 2018, https://knowledge.wharton.upenn.edu/article/self-driving-cars/.

[354] Dana Hull and Katherine Chiglinsky, "Tesla to Create Own Insurance Product, Says Musk," *Insurance Journal*, April 26, 2019, https://www.insurancejournal.com/news/national/2019/04/26/524842.htm.

[355] *See, e.g.*, FIO, *2017 Annual Report*, 71-72; "Background on: Self-Driving Cars and Insurance," *Insurance Information Institute,* July 30, 2018, https://www.iii.org/article/background-on-self-driving-cars-and-insurance.

create a wealth of data and technical knowledge that can be used to expand the industry's risk mitigation services.

Based on FIO's engagement process, it appears that InsurTech currently remains most valuable at creating greater efficiencies that improve the service and operations components of the insurance value chain. Given the rapid pace of technological development, future transformation of the insurance industry is likely.

3. Regulatory Frameworks and Reforms

a) The Current System and Areas for Improvement

Insurance regulation differs from other forms of financial regulation with which some startups—and many of their venture capital investors—may be more familiar. Most significantly, states are the primary regulators of insurance in the United States. Most stakeholders agreed there is room for improvement in the U.S. regulatory ecosystem.

Stakeholders noted that inconsistent state laws often present a high regulatory barrier for InsurTech startups.[356] It can be time-consuming and expensive to analyze and comply with numerous different state laws. InsurTech startups are finding a solution to this "learning curve" problem by partnering with incumbent insurers. In particular, as noted above, some startups are becoming MGAs or TSPs, to reduce their licensing burdens. For example, some startups are becoming a licensed broker rather than a licensed insurer in order to not be subject to a licensed insurer's capital requirements.

The most commonly cited areas for state law improvement included: anti-rebating; cancellation and non-renewal notice requirements; distribution and surplus lines restrictions; paper and proof of delivery requirements; and rate and form requirements, as discussed further below.

Anti-Rebating Laws: Most stakeholders noted that anti-rebating law is a regulatory area that is "low-hanging fruit" ripe for state law reform. Nearly all states have "anti-rebating" laws, which prohibit giving anything of more than *de minimis* value as an inducement for purchasing an insurance policy.[357] First developed in the 1880s, anti-rebating laws were designed to prevent brokers from discounting or sharing their commissions, but now encompass almost anything of

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[356] Some stakeholders noted that the inconsistency lies not only in the letter of the law, but also in how state insurance departments enforce the laws. This was cited as creating a lack of predictability in how state insurance regulators may exercise their discretionary regulatory authority.

[357] *See, e.g.*, Model Unfair Trade Practices Act (NAIC 2004), https://www.naic.org/store/free/MDL-880.pdf. California and Florida, with some exceptions, removed many anti-rebating restrictions in the 1980s. *See also* Jamie Parson et al., "Time to Dust Off the Anti-Rebate Laws," *Journal of Insurance Regulation* (Vol. 36, No. 7, 2017), 4-5, https://www.naic.org/prod_serv/JIR-ZA-36-07-EL.pdf.

value that could be provided to policyholders.[358] Several stakeholders advocated for modernizing anti-rebating laws by updating model laws, noting, for example, that national models should clearly allow insurers to provide policyholders with sensors that can help mitigate risk and loss. In the context of life insurance, the sensor might be a wearable activity tracker or fitness band; for P&C insurers, it could be a home sensor that warns of excessive water. Some states already have taken steps in this direction. For example, in 2018, Pennsylvania clarified that anti-rebating restrictions do not prohibit certain value-added services related to loss control.[359] In 2019, both NCOIL and the NAIC examined anti-rebate reform.[360] At the NAIC's summer meeting, members of the Innovation and Technology Task Force agreed to request an update on model law anti-rebating prohibitions.[361]

Cancellation/Non-Renewal Notice Requirements: States generally protect policyholders by requiring insurers to provide advance notice (typically, at least 30 days if not more) of policy cancellation or non-renewal.[362] Such notice requirements were originally intended for a standard one-year policy, however, stakeholders observed that such rules inhibit innovative short-term episodic and/or usage-based insurance products. For example, a three-hour policy for an e-scooter ride would be incompatible with a 30-day non-renewal notice requirement.

Distribution and Surplus Lines Restrictions: Some stakeholders noted that the existing regulatory system unduly restricts the distribution and sale of insurance products through innovative means. For example, one issue raised was whether state law should be agnostic as to what platform is used to distribute insurance—whether through an agent, on an insurer's website, on a third-party website, or an app—so long as a licensed insurer (or broker) is involved in the sale. More broadly, several stakeholders advocated that surplus lines restrictions should be eased to encourage increased innovation. Currently, for example, many states impose "due diligence" requirements mandating a search for available products within the admitted market each time before purchasing a policy through a surplus lines insurer.[363] Several stakeholders noted that

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[358] *See, e.g.*, Parson et al., "Time to Dust Off Anti-Rebate Laws," 2; Ian Adams, "Anti-Rebating Laws and the Utah Experience," *R Street Shorts*, February 2015, https://www.rstreet.org/wp-content/uploads/2015/02/RSTREETSHORT8.pdf.

[359] Pennsylvania Act of May 4, 2018, Pub. L. No. 114, No. 22 (formerly S.B. 877).

[360] *See, e.g.*, Alan Smith, "At NCOIL, Anti-Rebating Debate Ponders Fitbits and Free Turkeys," *Insurance Journal*, July 13, 2019, https://www.insurancejournal.com/blogs/2019/07/13/532167.htm; NAIC, *Innovation and Technology (EX) Task Force Agenda* (June 4, 2019), https://naic-cms.org/sites/default/files/call_materials/cmte_ex_ittf_190604_agenda%5B1%5D.pdf (listing multiple presentations regarding anti-rebating language in the Model Unfair Trade Practices Act).

[361] *See, e.g.*, Ray Lehmann, "NAIC Innovation Panel Moves for Update of Anti-Rebating Model," *Insurance Journal*, August 5, 2019, https://www.insurancejournal.com/blogs/right-street/2019/08/05/534953.htm.

[362] *See, e.g.*, Improper Termination Practices Model Act (NAIC 2001), https://www.naic.org/store/free/MDL-915.pdf.

[363] An admitted insurer is "an insurance company licensed to business in a state(s), domiciled in an alternative state or country." Surplus lines insurers can write insurance on a surplus lines basis when the desired coverage cannot be

these requirements, formulated for a non-digital era, are incompatible with automation and providing the prompt service demanded by modern consumers. Stakeholders opined that in areas where surplus rules had been eased—such as for Massachusetts auto insurance and in the Florida homeowners' insurance market—there had been no adverse consequences to consumers.

Paper and Proof of Delivery: Many stakeholders noted that state insurance regulation has not kept pace with contemporary consumer preferences. Stakeholders explained that, currently, there is no uniform way in the United States for an insurer and insured to interact electronically from the beginning to the end of the insurance transaction, i.e., from submitting applications, to providing policy documents, to claims notification, and ultimately to claims settlement. In this regard, several stakeholders pointed to state statutes requiring proof of postal delivery, despite many consumers' expressed preference for electronic delivery for speed and convenience. While progress has been made, particularly with respect to the acceptance of electronic signatures,[364] stakeholders argued there is room for continued improvement in the area.

Rate and Form Requirements: Several stakeholders identified a need to modernize the state rate and form filing process in order to improve products' speed to market, and particularly to enhance the speed in offering innovative products to consumers. They observed that rate and form filing regulations are inflexible and inhospitable to new entrants that are aiming to test the market. This concern is not limited to InsurTech startups. Treasury also noted concerns about product approval and speed-to-market in its Insurance EO Report.[365]

b) Sandboxes

Another important issue is regulatory sandboxes and their potential ability to identify solutions for regulatory impediments to innovation. A "sandbox" is commonly understood by stakeholders to be a regulatory or legislative construct that allows companies to test new products and technologies in a contained environment without meeting all current regulatory requirements. Worldwide, several insurance regulatory authorities have created sandboxes for InsurTech startups or companies, including Bermuda, Denmark, Hong Kong, and the UK.[366]

obtained from admitted insurers in the jurisdiction in question. *See* "Glossary of Insurance Terms," NAIC, https://www.naic.org/consumer_glossary.htm.

[364] *See, e.g.*, Uniform Electronic Transactions Act (Uniform Law Commission 1999), https://www.uniformlaws.org/committees/community-home?CommunityKey=2c04b76c-2b7d-4399-977e-d5876ba7e034; Electronic Signatures in Global and National Commerce Act, Pub. L. No. 106-229, 114 Stat. 464 (2000); Okla. Senate Bill 700 (amending 12A Okla. Stat. § 15-102 to modify the definition of "electronic record" and "electronic signature" within the state's version of the Uniform Electronic Transaction Act to include records or signatures obtained through blockchain technology).

[365] Treasury, *Insurance EO Report*, 120-122.

[366] *See, e.g.*, Government of Bermuda, "Insurance Regulatory Sandbox to Boost InsurTech in Bermuda," news release, June 22, 2018, https://www.gov.bm/articles/insurance-regulatory-sandbox-boost-insurtech-bermuda; "FT Lab," Danish Financial Supervisory Authority, https://www.dfsa.dk/Supervision/Fintech/FT-lab; "Insurtech

Stakeholders had differing views on the necessity and utility of regulatory "sandboxes" in the United States, but agreed that any sandbox, if adopted, needs to be carefully defined, and should include consumer protections and solvency requirements. Some noted that formal sandboxes—however defined—are unnecessary in the United States because each of the 50 state insurance departments generally has the regulatory discretion to waive requirements. Other stakeholders expressed concern that sandboxes, if not implemented appropriately, could create an "un-level playing field" in favor of sandbox participants. These opponents generally perceived a potential for bias in favor of startups that would be prejudicial to industry incumbents who were subject to the existing insurance regulatory regime. In contrast, some stakeholders supporting sandboxes noted that if regulators use discretionary authority to waive requirements—rather than use formal regulatory sandboxes with explicit requirements—outcomes might be dictated based on market power or other considerations that reflect an existing un-level playing field. The unpredictability and potential inconsistency in the exercise of discretionary authority by the various states is another issue of concern for stakeholders. One potential option that was raised during FIO's engagement was a multi-state sandbox that could improve the efficiency and consistency of decision-making among the participating states. More generally, several stakeholders—as well as commentators generally—have cautioned that regulators implementing sandboxes need to find the appropriate balance between increasing the ability of insurers to provide new products and protecting consumer interests.[367]

Some states are proceeding to create formal or informal sandboxes. Kentucky's Governor signed legislation in March 2019, creating a "sandbox" through which an applicant may test an "insurance innovation" and the insurance department will not take "any administrative or regulatory action" against them, subject to the conditions specified in the law.[368] Additionally, Kentucky now has a dedicated insurance innovation webpage.[369] Oregon similarly has an "Innovation Hub" webpage with information about its regulatory sandbox to encourage "responsible testing of new business models, delivery channels, automated decisions, and partnerships."[370] In June 2019, the Vermont Governor signed a bill creating an insurance regulatory sandbox that allows the state insurance commissioner to grant "innovation waivers"

Corner," Hong Kong Insurance Authority, https://www.ia.org.hk/en/aboutus/insurtech_corner.html; "FCA Innovate," Financial Conduct Authority, https://www.fca.org.uk/firms/fca-innovate. *See also* Mueller, *InsurTech Rising*, 16-19.

367 Lee Reiners, "North Carolina's Proposed Regulatory Sandbox Needs Work," *The FinReg Blog*, May 28, 2019, https://sites.duke.edu/thefinregblog/2019/05/28/north-carolinas-proposed-regulatory-sandbox-needs-work/.

368 Kentucky House Bill 386, https://apps.legislature.ky.gov/recorddocuments/bill/19RS/hb386/bill.pdf.

369 "Insurance Innovation—Think Kentucky," Kentucky Department of Insurance, http://insurance.ky.gov/ppc/Division.aspx?div_id=25.

370 "Oregon's Innovation Hub for Insurance and Financial Services," State of Oregon, https://dfr.oregon.gov/innovation/Pages/index.aspx.

under specified conditions.[371] Other states are studying the feasibility of a regulatory sandbox.[372] FIO will continue to monitor the use of sandboxes by state regulatory authorities.

c) Data Regulation: Data Use and Data Privacy

Insurers have massive amounts of data and will continue to acquire more data as innovation continues. Data regulation was a key discussion topic for stakeholders.

Stakeholders underscored the need to clearly distinguish data security and cybersecurity issues from issues relating to data use and privacy. Stakeholders raised cybersecurity concerns in connection with InsurTech—for example, noting that increased digitalization may increase the risk of data theft—but generally recognized cybersecurity as a distinct area. This Report, therefore, addresses cybersecurity issues separately, in Section III.C.2.

Data Use - Big Data Analytics and Model Review: Stakeholders emphasized that big data (discussed above in Section V.D.2.b of this Report) can present both opportunities and challenges for insurers and consumers. Big data can improve efficiency help find new sources of new business, improve customer engagement, and enhance product design. Big data also can present stakeholders with challenges, however, in terms of data storage and accessibility, security, and use.

Big data also presents significant challenges for regulators, as some consumer advocates noted. While acknowledging that big data has the potential to help consumers, some stakeholders suggested: "Big Data has massively increased the market power of insurers versus consumers and versus regulators."[373] Another challenge is transparency of the data and the models in which they are used. According to stakeholders, the complexity of models and the volume of data may require regulators to rely on the representations of the insurers and their third-party modelers; regulators may not have the resources for independent reviews. In addition, when models are developed and evolve through AI or other forms of machine learning, that is, when models change themselves based on their own operations, it "raises questions about insurers' ability to supervise models, let alone regulators' ability to do so."[374]

State insurance regulators have recognized the issues presented by big data analytics and complex models and are beginning to take steps to address them. The NAIC's Casualty

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[371] 8 V.S.A. § 15a (as added by Vermont S. 131 (2019)).

[372] *See, e.g.*, District of Columbia Financial Services Regulatory Sandbox and Innovation Council, Mayor's Order 2019-003 (January 25, 2019), https://www.dcregs.dc.gov/Common/NoticeDetail.aspx?NoticeId=N0078695; Nebraska Legislative Resolution 94 (106th Legislature, First Session, 2019), https://nebraskalegislature.gov/FloorDocs/106/PDF/Intro/LR94.pdf.

[373] Center for Economic Justice, "Eating the Big Data Elephant" (presentation, IRES CDS 2018, August 14, 2018), 7, 8 http://www.cej-online.org/issues/big-data/.

[374] Center for Economic Justice, "Eating the Big Data Elephant," 10.

Actuarial and Statistical Task Force, for example, is drafting a white paper on "best practices for the regulatory review of complex predictive models and analytics filed by insurers to justify rates."[375] The NAIC's Big Data Working Group, meanwhile, states that it is focused on the use of data for accelerated underwriting in life insurance, including a proposal for states to share resources for the review of complex models, while continuing to review the current regulatory framework for the oversight of insurers' use and need of consumer data.[376]

NYDFS has also issued guidance to life insurers on the use of external consumer data and information sources in underwriting for life insurance.[377] Life insurance stakeholders also cited life insurers' use of genetic testing as an important issue, as discussed further in Box 1.

Box 1: Life Insurers' Use of Genetic Testing

Stakeholders in the life insurance industry expressed concern that consumers and regulators may not fully appreciate the issues raised by the use of genetic test results in life insurance underwriting. They noted that, in order to more accurately underwrite policies, life insurers would like to know what an applicant knows about his or her health, including family history as well as the results of any medical tests, including genetic tests. According to life insurers, full disclosure ensures a level playing field and avoids adverse selection (i.e., when applicants who are less healthy conceal their health status to obtain better coverage) which can lead to higher rates and/or fewer available products for other consumers. Stakeholders did not affirmatively seek to require genetic tests of applicants, but rather to require disclosure of genetic test results if the applicant otherwise had taken such a test—whether at the recommendation of a doctor or through a popular commercial service. They also expressed concern that, in the future, regulators might prohibit disclosure to insurers of such voluntary test results.

Some consumer advocates, however, countered that the risk of adverse selection may be overstated, expressing the view that insurers themselves are using data and algorithms without full disclosure or consumers' consent through "accelerated underwriting" processes. These stakeholders note that genetic information is not necessarily predictive of future costs—many of those who carry disease-associated genes will never have a related illness—and therefore no reason exists for insurers to use this information simply because it is available. Consumer

[375] "Big Data," NAIC, last updated May 24, 2019, https://www.naic.org/cipr_topics/topic_big_data.htm. *See also* NAIC Casualty Actuarial and Statistical Task Force, *Exposure Draft: Regulatory Review of Predictive Models* (July 24, 2019), https://naic-cms.org/sites/default/files/inline-files/Predictive%20Model%20White%20Paper%20Exposed%208-3-19.pdf.

[376] "Big Data," NAIC.

[377] NYDFS, *Insurance Circular Letter No. 1 (2019): Use of External Consumer Data and Information Sources in Underwriting for Life Insurance* (2019), https://www.dfs.ny.gov/industry_guidance/circular_letters/cl2019_01.

advocates also warned about potentially discouraging people from genetic testing for fear of insurance discrimination.[378]

Data Privacy: One of the most important and most frequently raised regulatory issues for many stakeholders was new data privacy laws. Stakeholders recognize that insurers already are subject to numerous laws on data privacy and data handling, including the Gramm-Leach-Bliley Act for financial institutions generally, the Health Insurance Portability and Accountability Act for medical information, and state insurance laws and regulations. The increasing volume and accessibility of personal information, however, has led some states to enact or consider new, additional data privacy laws.

While recognizing the public policy and consumer considerations that prompted laws such as the California Consumer Privacy Act (CCPA),[379] many stakeholders expressed concern that data privacy laws will evolve on a patchwork basis in the United States. Stakeholders cautioned that inconsistent state regulation of data privacy—with different definitions of "personal information," different consent and "opt out" requirements, and different views on what "de-identified data" can be used without constraints—could require expensive compliance efforts by insurers and limit their ability to innovate. Such compliance costs might also serve as an additional barrier to entry for InsurTech startups. Some stakeholders also warned that contradictory consumer disclosures could increase confusion and potential distrust.

Some stakeholders also warned that some privacy law provisions—like the "right to be forgotten" that is inspired by the European Union's General Data Protection Regulation (GDPR)—are fundamentally incompatible with technological innovations like blockchain.[380] The very structure of blockchain requires the collection and permanent preservation of data.

One common theme from FIO's engagement is the need for regulators and policymakers to adopt a more consistent approach to privacy regulation. In particular, some stakeholders advocated for federal legislation with a uniform national standard for data privacy that extended beyond insurers to all companies.

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[378] *See* Center for Economic Justice, "Life Insurers' Use of Genetic Information: Public Policy and Regulatory Issues" (presentation, NCSL Task Force on Insurance, May 18, 2019).

[379] Calif. Civil Code § 1798.100 et seq. (enacted through California Assembly Bill 375).

[380] Although data can be appended to a blockchain, they cannot be erased—to do so would "break" the chain. There is no clear answer as to how blockchain technology could comply with data privacy laws that give consumers the "right to be forgotten" and have their personal data deleted. One option would be to keep personally identifiable information (PII) off the blockchain; the blockchain would contain markers that would point to PII kept in a secure location off the blockchain. This option would increase the complexity of the blockchain and reduce standardization—one of the key benefits of blockchain technology.

d) RegTech: Technology Talent Gaps and State Reforms

In the United States, "RegTech"—that is, exploring and promoting technology innovations to improve the effectiveness and efficiency of insurance regulation—is an ongoing concern. The NAIC is continuing its work on technology projects as part of its *State Ahead* strategic plan.[381] It also has created a centralized listing of InsurTech contact information for each state,[382] as well as task forces and working groups focused on InsurTech, such as the Artificial Intelligence Working Group.[383] Individual states are also addressing InsurTech and RegTech. For example, NYDFS established a Research and Innovation Division in July 2019.[384] In addition, the Texas Department of Insurance began testing the use of AI for improving regulatory consistency in policy review and approval.[385] Despite new tools and new organizational structures emphasizing innovation and technology, stakeholders recognized "technology talent gaps" among insurance regulators and, to a lesser extent, within the insurance industry itself.

Around the globe, insurance supervisors, regulators, and legislators are examining technology's impact on the insurance industry and insurance supervision.[386] The IAIS cited Fintech as a key theme in its 2020-2024 Strategic Plan (as discussed in Section IV.A.2 of this Report). It also

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381 NAIC, *Shaping the Future: 2018 Annual Report—Operations and Technology*, https://www.naic.org/annual_report_2018/chapter_ops.htm.

382 "InsurTech, Innovation & Technology," NAIC, https://www.naic.org/index_innovation_technology.htm.

383 NAIC, "NAIC Event Focuses on Artificial Intelligence in Insurance," news release, August 6, 2019, https://www.naic.org/Releases/2019_docs/naic_event_focus_artificial_intelligence_insurance.htm. NAIC has indicated that this working group will "study the development of artificial intelligence, its use in the insurance sector and its impact on consumer protection and privacy, marketplace dynamics, and the state-based insurance regulatory framework." *Id.*

384 NYDFS, "DFS Superintendent Linda A. Lacewell Announces Newly Created Research and Innovation Division, New Executive Appointments," news release, July 23, 2019, https://www.dfs.ny.gov/reports_and_publications/press_releases/pr1907231.

385 Texas Department of Insurance, "TDI Tests Artificial Intelligence to Review Policies," news release, April 9, 2019, https://www.tdi.texas.gov/news/2019/tdi04092019.html.

386 *See, e.g.*, IAIS, *Issues Paper on Increasing Digitalisation in Insurance and its Potential Impact on Consumer Outcomes* (2018), https://www.iaisweb.org/page/supervisory-material/issues-papers/file/77816/issues-paper-on-increasing-digitalisation-in-insurance-and-its-potential-impact-on-consumer-outcomes; IAIS, *Application Paper on the Use of Digital Technology in Inclusive Insurance* (2018), https://www.iaisweb.org/page/supervisory-material/application-papers/file/77815/application-paper-on-the-use-of-digital-technology-in-inclusive-insurance; EIOPA, *Outsourcing to the Cloud: EIOPA's Contribution to the European Commission Fintech Action Plan* (2019), https://eiopa.europa.eu/Publications/EIOPA%20Outsourcing%20to%20the%20cloud_Contribution%20to%20Fintech%20action%20plan%20%283%29.pdf; EIOPA, *Big Data Analytics in Motor and Health Insurance: A Thematic Review* (May 2019), https://eiopa.europa.eu/Publications/EIOPA_BigDataAnalytics_ThematicReview_April2019.pdf; Financial Conduct Authority, *The Impact and Effectiveness of Innovate* (April 2019), https://www.fca.org.uk/publication/research/the-impact-and-effectiveness-of-innovate.pdf.

stressed the "crucial" need for cooperation between supervisory authorities in an increasingly digitalized world.[387] FIO has joined the IAIS's Fintech Forum.

This Report has outlined some of the key InsurTech issues in the United States. FIO intends to remain engaged in this area, and will continue to monitor developments in this area, consistent with the recommendation of the U.S. Government Accountability Office: "It will be important for NAIC and state insurance regulators, as well as the Federal Insurance Office, to continue monitoring developments in these areas."[388] Additionally, consistent with the Fintech EO Report, FIO and Treasury will continue to study these issues and evaluate whether to put forth recommendations in its 2020 Annual Report, or in other forums, as appropriate.

[387] IAIS, *Issues Paper on Increasing Digitalisation in Insurance*, 30-31.

[388] U.S. Government Accountability Office, *Innovative Uses of Technologies*, 33.

VI. INSURANCE INDUSTRY FINANCIAL OVERVIEW

A. Domestic Insurance Marketplace Overview

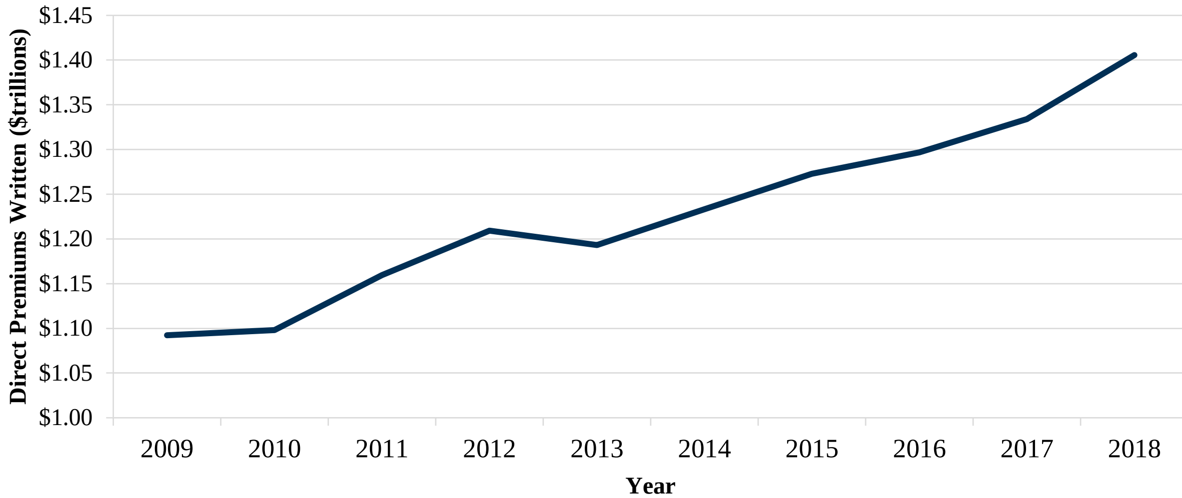
Over the past decade, the insurance industry has maintained a solid financial profile. Like other financial market participants, however, insurers are managing their operations in response to a different economic environment in 2018 as compared to 2009. An easing of monetary policy helped to start the recovery from the financial crisis. The benchmark federal funds rate was reduced to 0.25 percent in December 2008, a historically low rate that remained in effect until 2015. In 2018, the financial sector benefitted from reduced corporate tax rates and higher interest rates.

Although interest rate increases generally have not eased tight profit margins for insurers, the industry has stabilized its leverage ratios, retained positive earnings, maintained liquidity coverage ratios, and grown its assets to strengthen its capital base since 2009. There have been some recent signs of potential weakening, however, in the financial health of both the L&H and P&C sectors. In the last two years, the L&H sector has reported negative growth in its operating income, while surrender activity reached a new decade high in 2018. For the P&C sector, growth in cash and short-term investments turned negative in 2018, as did growth in policyholder surplus. Finally, both sectors, in search of yield, have shown an increase in their share of bond holdings allocated to private placements. Despite recent trends that suggest increased risk exposures, the insurance industry has generally moved to capitalize itself appropriately to cover any potential fall-out.

Since the 2009 low point for domestic insurance premiums (following the financial crisis), industry premiums have grown in every year except in 2013. In 2018, total direct premiums written for the combined L&H and P&C sectors were $1.41 trillion, growing by more than five percent over 2017 levels and nearly 29 percent from 2009, as shown in Figure 9.[389] Premium growth in 2018 was the second highest since 2009, exceeded only by a slightly stronger performance in 2011.

[389] Except as otherwise indicated, data cited in this section of the Report are as of December 31, 2018, as derived from S&P Global on April 18, 2019. These data are on a statutory accounting basis. S&P Global continuously updates its data for corrections in filings; 2017 data in this Report are based on updated data available as of April 18, 2019, and thus may be different in some respects from corresponding figures reported in FIO's 2018 Annual Report. Due to certain conventions used by S&P Global for aggregation of industry data, some columns in the accompanying tables may not sum to the totals that have been separately accumulated by S&P Global from individual legal entity data. Some figures may not add to 100 percent due to rounding.

Figure 9: Total Direct Premiums Written for L&H and P&C Sectors ($ trillions)



Source: S&P Global

1. Financial Performance and Condition

This section focuses on the financial performance and condition of the 709 L&H insurers, the 2,602 P&C insurers, and the 1,179 health insurers licensed in the United States.[390] Insurers in the L&H sector offer products in two segments: (1) life insurance and annuities, which generally protect against the risk of financial loss associated with an individual's death and provide income streams for retirement, respectively; and (2) accident and health (A&H) products, which cover expenses for health and long-term care or provide income in the event of disability. Insurers in the P&C sector offer products that generally protect against the risk of financial loss associated with damage to property or exposure to liability for individuals and families (personal lines) or for businesses (commercial lines).

Net premiums written for the L&H sector were approximately $604 billion in 2018, or 31 percent of net premiums written for the combined L&H, P&C, and Health sectors.[391] For the P&C sector, net premiums written were approximately $615 billion, or 32 percent of net premiums written for the combined L&H, P&C, and Health sectors. The Health sector reported $708 billion of net premiums written for 2018, or 37 percent of the combined total for the three sectors.

At the end of 2018, the L&H sector held approximately $6.8 trillion of total assets (including $2.5 trillion held in separate accounts), the P&C sector held approximately $2.0 trillion, and the

[390] A.M. Best Aggregates and Averages (2018 Editions) and S&P Global. The L&H and P&C sectors are the primary insurance sectors in the United States. The Health sector includes companies licensed solely as health insurers or as Health Maintenance Organizations, but is not the focus of the remainder of this Report.

[391] Net premiums written means direct premiums written less net ceded reinsurance premiums.

Health sector held approximately $417 billion. Capital and surplus in the L&H sector stood at approximately $399 billion as of December 31, 2018, the P&C sector reported policyholder surplus of approximately $753 billion, and the Health sector reported approximately $200 billion.

Figures 10 and 11 present snapshots of the L&H sector market, showing the ten largest L&H insurance groups measured by direct premiums written, and market share for life insurance (including annuities and other deposit-type contracts) and for A&H lines of business, respectively. Premiums shown in Figures 10 and 11 aggregate all L&H sector products and all geographies of the United States.

Figure 10: L&H Insurance Groups by 2018 U.S. Life Insurance Lines Direct Premiums Written ($ thousands)

2017 Rank	**2018 Rank**	**Insurance Group**	2017 Direct Premiums Written ($000)	Share of Total (%)	**2018 Direct Premiums Written ($000)**	**Share of Total (%)**
1	1	MetLife, Inc.	$ 86,621,636	13.57	**$ 96,451,607**	14.15
2	2	Prudential Financial, Inc.	47,465,693	7.44	**53,148,550**	7.80
3	3	New York Life Insurance Co.	31,852,412	4.99	**35,452,211**	5.20
5	4	Massachusetts Mutual Life Insurance Co.	24,735,091	3.87	**27,154,611**	3.98
8	5	American International Group, Inc.	21,465,665	3.36	**26,446,934**	3.88
6	6	Lincoln National Corp.	22,455,077	3.52	**25,804,565**	3.79
4	7	Principal Financial Group, Inc.	28,153,239	4.41	**25,322,774**	3.72
10	8	AXA Equitable Holdings Co.	21,290,299	3.34	**22,579,431**	3.31
9	9	Transamerica Corp.	21,317,714	3.34	**22,352,418**	3.28
7	10	Jackson Holdings LLC	22,439,071	3.52	**21,511,557**	3.16
		Combined Top 10	$ 327,795,897	51.35	**$ 356,224,658**	52.27
		Combined Top 25	$ 498,357,152	78.07	**$ 540,697,303**	79.33
		Combined Top 100	$ 629,867,028	98.67	**$ 673,630,841**	98.87
		Total U.S. Life Insurance Lines	$ 638,379,280		**$ 681,631,044**	

Source: S&P Global (includes Life Insurance (No Annuity), Annuity Considerations, Deposit-type Contracts (State Page), Other Considerations (State Page))

The data presented in Figures 10 and 11 for life and annuity business, and in the comparable figures that follow for other lines of business, are aggregated at a group level from filings made with state insurance regulators by individual legal entity insurers. For example, premiums shown for MetLife Inc. include premiums written by all of its insurance subsidiaries in the United States, but exclude business written by affiliated entities in other jurisdictions. Similarly, Jackson National Life Group is foreign-owned, and the results shown only include U.S. operations.

Over 2018, the market share rankings among the three largest writers of life insurance and annuities were unchanged. MetLife remained the largest writer of life insurance products in the United States, followed by Prudential and New York Life. MassMutual gained one spot, rising to the fourth largest, while AIG jumped up three notches into fifth position. AXA also rose to eighth largest from its tenth position in 2017. Principal Financial Group dropped to seventh largest from fourth, and Jackson National slipped to tenth position from eighth. The aggregate market shares of the top ten, 25, and 100 companies were little changed compared to 2017.

Figure 11: L&H Insurance Groups by 2018 U.S. A&H Lines Direct Premiums Written ($ thousands)

2017 Rank	**2018 Rank**	**Insurance Group**	2017 Direct Premiums Written ($000)	Share of Total (%)	**2018 Direct Premiums Written ($000)**	**Share of Total (%)**
1	1	UnitedHealth Group Inc.	$ 52,353,113	27.73	**$ 56,496,235**	29.04
2	2	CVS Health Corp.	30,004,745	15.89	**32,614,694**	16.76
3	3	Cigna Corp.	17,771,300	9.41	**20,526,988**	10.55
5	4	Metlife, Inc.	7,600,969	4.03	**7,937,343**	4.08
4	5	Aflac Inc.	14,993,250	7.94	**7,905,196**	4.06
6	6	Unum Group	5,887,345	3.12	**6,178,416**	3.18
7	7	Mutual of Omaha Insurance Co.	4,020,339	2.13	**4,289,460**	2.20
8	8	Guardian Life Insurance Co. of America	3,758,560	1.99	**3,938,319**	2.02
10	9	Lincoln National Corp.	2,445,713	1.30	**2,699,929**	1.39
9	10	Genworth Financial Inc.	2,653,016	1.41	**2,633,754**	1.35
		Combined Top 10	$ 141,488,350	74.95	**$ 145,220,334**	74.63
		Combined Top 25	$ 165,715,757	87.78	**$ 171,000,832**	87.88
		Combined Top 100	$ 186,676,991	98.89	**$ 193,281,624**	99.35
		Total U.S. A&H Lines	$ 188,781,567		**$ 194,562,680**	

Source: S&P Global

Figure 11 shows A&H premiums written by insurers authorized to offer both life and health insurance; it excludes A&H premiums written by insurers authorized to offer only health insurance (see Figure 13 below). Thus, for example, the data presented in Figure 11 for UnitedHealth Group do not reflect that insurer's total health insurance premiums on a consolidated basis, but only premiums written by its subsidiaries licensed to offer both life and health insurance. UnitedHealth Group also writes health insurance business through subsidiaries that offer only health insurance, and those premiums are reflected in Figure 13.

There was little change in the top ten writers of A&H lines of business in 2018. UnitedHealth Group remained the largest writer of A&H lines in 2018; CVS Health entered as the second-largest following its 2018 acquisition of Aetna 2017's second-largest A&H writer.

As noted above, P&C insurers underwrite a variety of products, generally categorized as either personal lines or commercial lines. Figure 12 reports market share information on a combined P&C sector basis; details for commercial lines and personal lines market shares are provided in the discussion below.

Figure 12: P&C Insurance Groups by 2018 U.S. Combined Lines Direct Premiums Written ($ thousands)

2017 Rank	**2018 Rank**	**Insurance Group**	2017 Direct Premiums Written ($000)	Share of Total (%)	**2018 Direct Premiums Written ($000)**	**Share of Total (%)**
1	1	State Farm Mutual Automobile Insurance Co.	$ 64,892,583	10.10	**$ 65,849,676**	9.77
2	2	Berkshire Hathaway Inc.	38,818,874	6.04	**43,869,809**	6.51
3	3	Liberty Mutual Holding Co. Inc.	33,831,726	5.27	**34,605,081**	5.14
5	4	Progressive Corp.	27,862,882	4.34	**33,754,923**	5.01
4	5	The Allstate Corp.	31,501,664	4.90	**33,251,176**	4.94
6	6	Travelers Companies, Inc.	24,875,076	3.87	**26,244,172**	3.90
7	7	Chubb Ltd.	21,266,737	3.31	**22,008,957**	3.27
8	8	United Services Automobile Association	20,151,368	3.14	**21,984,970**	3.26
9	9	Farmers Insurance Group of Companies	19,854,803	3.09	**20,309,974**	3.01
10	10	Nationwide Mutual Group	19,218,907	2.99	**18,416,861**	2.73
		Combined Top 10	$ 302,274,620	47.05	**$ 320,295,599**	47.54
		Combined Top 25	$ 420,929,749	65.51	**$ 442,815,693**	65.74
		Combined Top 100	$ 557,160,009	86.72	**$ 587,521,626**	87.23
		Total U.S. P&C Sector	$ 642,509,475		**$ 673,781,349**	

Source: S&P Global (includes all lines of business)

On a combined basis (including all lines of P&C business), State Farm remained the largest writer of P&C business in 2018. There was little change among the top ten P&C companies. Compared to 2017, only Progressive and Allstate changed rankings, with Progressive passing Allstate for fourth position.

For P&C commercial lines, there was a change at the top as Travelers passed Chubb for the largest writer of P&C commercial lines. Berkshire Hathaway gained one spot, passing CNA for sixth position, while Hartford also passed Nationwide for eighth position. There was no change in the market share rankings of the top ten writers of P&C personal lines. For both commercial lines and personal lines, there was little change in the aggregate market shares of the top 10, 25, and 100 companies in 2018.

As shown in Figure 13 below, market share rankings among the top ten health insurance groups were little changed in 2018. UnitedHealth Group continued to dominate the market, and GuideWell Mutual entered the top ten in ninth position.

Figure 13: Health Insurance Groups by 2018 U.S. Health Lines Direct Premiums Written ($ thousands)

2017 Rank	**2018 Rank**	**Insurance Group**	2017 Direct Premiums Written ($000)	Share of Total (%)	**2018 Direct Premiums Written ($000)**	**Share of Total (%)**
1	1	UnitedHealth Group Inc.	$ 87,199,759	12.96	**$ 100,589,323**	14.00
2	2	Anthem, Inc.	65,645,632	9.76	**66,067,104**	9.20
3	3	Humana Inc.	53,176,602	7.90	**55,848,935**	7.77
4	4	HealthCare Services Corp.	34,304,533	5.10	**37,655,147**	5.24
5	5	Centene Corp.	28,573,486	4.25	**35,333,521**	4.92
6	6	CVS Health Corp.	23,841,501	3.54	**21,635,071**	3.01
7	7	WellCare Health Plans, Inc.	18,425,997	2.74	**19,907,554**	2.77
8	8	Kaiser Foundation Health Plan, Inc.	17,406,943	2.59	**19,279,172**	2.68
11	9	GuideWell Mutual Holding Corp.	15,253,562	2.27	**17,954,524**	2.50
10	10	Molina Healthcare, Inc.	16,665,219	2.48	**16,216,140**	2.26
		Combined Top 10	$362,250,611	53.85	**$ 390,486,492**	54.36
		Combined Top 25	$495,605,175	73.67	**$ 532,509,913**	74.13
		Combined Top 100	$645,221,814	95.91	**$ 690,182,721**	96.08
		Total U.S. Health Insurance Lines	$672,749,379		**$ 718,343,614**	

Source: S&P Global

2. Life and Health Sector

a) Performance

This section presents additional analysis of the financial performance of the L&H sector in 2018, and then assesses the L&H sector's overall financial condition as of December 31, 2018.

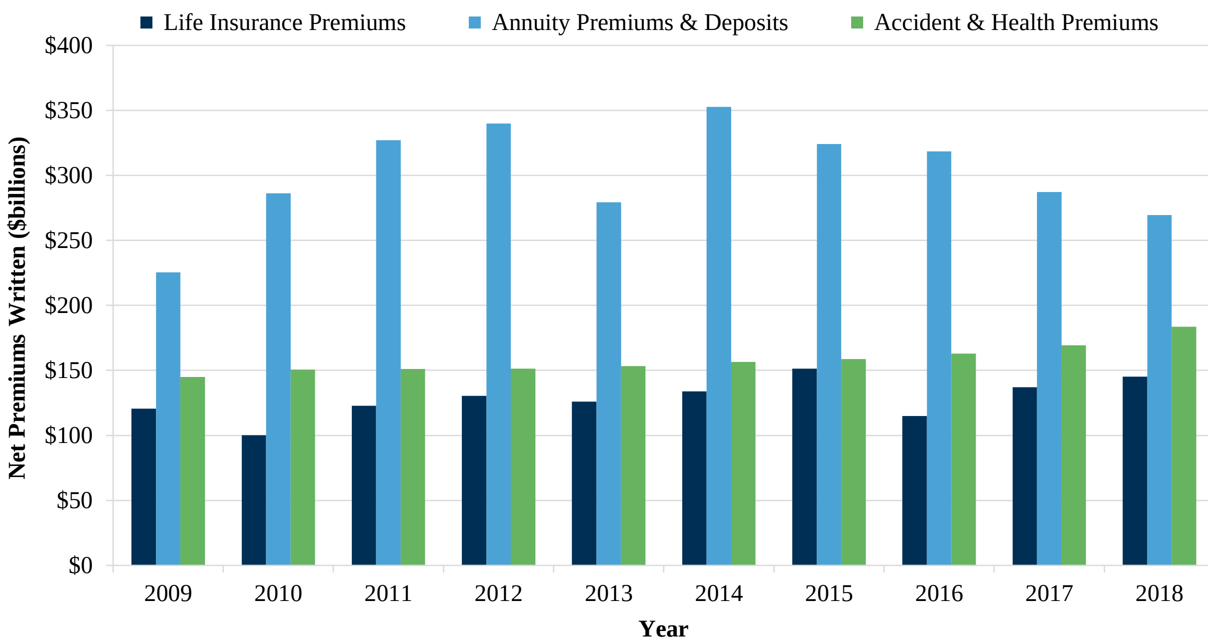
i. Net Premiums Written

Net premiums written is the sum of direct premiums written and reinsurance assumed, less reinsurance ceded. Direct premiums written is a principal measure of the size and growth of the insurance industry. Over 2018, direct written premiums of $733 billion for the L&H sector grew by six percent, the strongest growth since 2010. Direct annuity premiums and considerations (individual and group) swelled by 12 percent to $354 billion as interest rates rose over most of the year, and favorable regulatory developments relieved pressure on the annuity market.[392] Growth in annuity premiums and considerations more than offset a more than one percent decline in direct life insurance premiums written. After reinsurance transactions, L&H sector net premiums written were $604 billion in 2018, marking a one percent increase from the $597

[392] Jason Woleben, "Fixed Annuity Sales Jump YOY in 2018, Pushing Total Individual Annuities Higher," *S&P Global Market Intelligence*, March 27, 2019, https://platform.mi.spglobal.com/web/client?auth=inherit&overridecdc=1&#news/article?id=50785596.

billion reported in 2017, following three consecutive years of negative growth. A six percent decrease in net annuity premiums and considerations was offset by a six percent gain in net life insurance premiums and an eight percent increase in net A&H premiums. A number of large reinsurance transactions in 2018 by AIG and Voya Financial were cited as the main cause of the weaker net premiums written result.[393] Net premiums written accounted for 67 percent of total L&H sector revenues, a level notably lower than the ten-year historical average of 71 percent; this decline was largely due to a nearly $50 billion swing in the reinsurance allowance, from an expense of $25 billion in 2017 to a $32 billion benefit in 2018. For 2018, annuity premiums and deposits represented 45 percent of total net premiums written, a decrease from the 48 percent reported in 2017, as shown in Figures 14 and 15. Sales of traditional life insurance products rose to make up 24 percent of 2018 L&H sector net premiums written (from 23 percent in 2017), while the remainder was almost comprised entirely of A&H sector premiums.

Figure 14: L&H Sector Net Premiums Written ($ billions)



Source: S&P Global

[393] Tim Zawacki, “US Life Industry Premiums Rose, but Statutory Profits Fell in 2018,” *S&P Global Market Intelligence*, March 25, 2019, https://platform.mi.spglobal.com/web/client?auth=inherit&overridecdc=1&#news/article?id=50711785.

Figure 15: L&H Sector Net Premiums, Considerations, and Deposits ($ thousands)

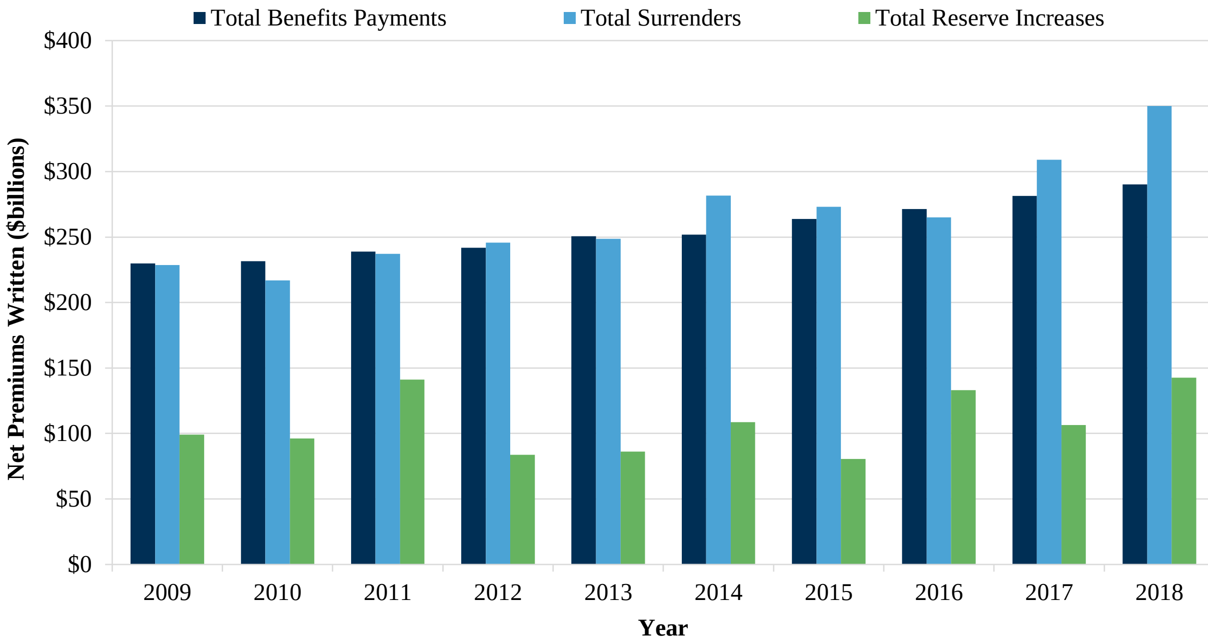
	2014	2015	2016	2017	2018
Life Insurance Premiums	$ 133,901,046	$ 151,398,875	$ 115,034,222	$ 137,148,663	$ 145,258,227
Annuity Premiums & Deposits	352,823,672	324,041,791	318,539,213	287,222,231	269,550,482
A&H Premiums	156,605,802	158,826,446	162,844,867	169,324,331	183,553,158
Credit Life & Credit A&H Premiums	1,388,591	1,379,933	1,261,511	1,261,969	1,292,008
Other Premiums & Considerations	2,554,797	2,497,634	2,192,329	2,097,850	3,986,445
Total	$ 647,273,909	$ 638,190,255	$ 599,872,141	$ 597,055,044	$ 603,640,320
Share of Total	**2014**	**2015**	**2016**	**2017**	**2018**
Life Insurance Premiums	21%	24%	19%	23%	24%
Annuity Premiums & Deposits	55%	51%	53%	48%	45%
A&H Premiums	24%	25%	27%	28%	30%
Credit and Other	1%	1%	1%	1%	1%
	100%	**100%**	**100%**	**100%**	**100%**

Source: S&P Global

ii. Policyholder Contract Benefits, Surrenders, and Other Expenses

Policyholder contract benefits are claims or obligations of L&H insurers under life insurance, annuity, and other contracts and policies. Contract surrenders occur when a policyholder or contract holder elects to cancel a policy or contract before the end of its contractual term and to receive its accumulated cash value. Contract benefit payments and contract surrenders comprise the majority of total expenses for L&H insurers. Non-benefit-related expenses include general administrative and overhead expenses, expenses incurred in acquiring business (particularly producer commissions), and expenses related to payments made under contractual provisions of polices, including loss verification and adjustment expenses. Figures 16 and 17 show aggregate L&H sector benefit payments, surrenders, reserve increases, and all other expenses for recent years.

Figure 16: L&H Sector Expenses ($ billions)



Source: S&P Global

Figure 17: L&H Sector Expenses ($ thousands)

	2014	2015	2016	2017	2018
Total Benefits Payments	$ 251,752,087	$ 263,909,819	$ 271,355,287	$ 281,362,794	$ 290,153,220
Total Surrenders	281,532,892	272,998,652	265,095,216	308,928,847	350,167,147
Total Increase in Reserves	108,734,429	80,546,645	133,139,152	106,352,493	142,720,901
Total Transfers to Separate Accounts	(16,464,689)	36,922,715	(38,046,582)	(65,770,433)	(89,589,784)
Commissions	52,063,514	55,501,271	64,569,458	58,002,036	58,237,818
General & Administrative Expenses	58,950,536	60,074,070	62,361,327	65,853,750	65,795,273
Insurance Taxes, Licenses and Fees	9,981,134	10,481,358	10,828,050	8,814,672	10,728,150,
Other Expenses	65,995,973	(4,914,286)	(2,709,027)	(4,290,289)	11,152,989
Total	**$ 812,545,876**	**$ 775,520,244**	**$ 766,592,880**	**759,253,869**	**$ 839,365,714**

Source: S&P Global

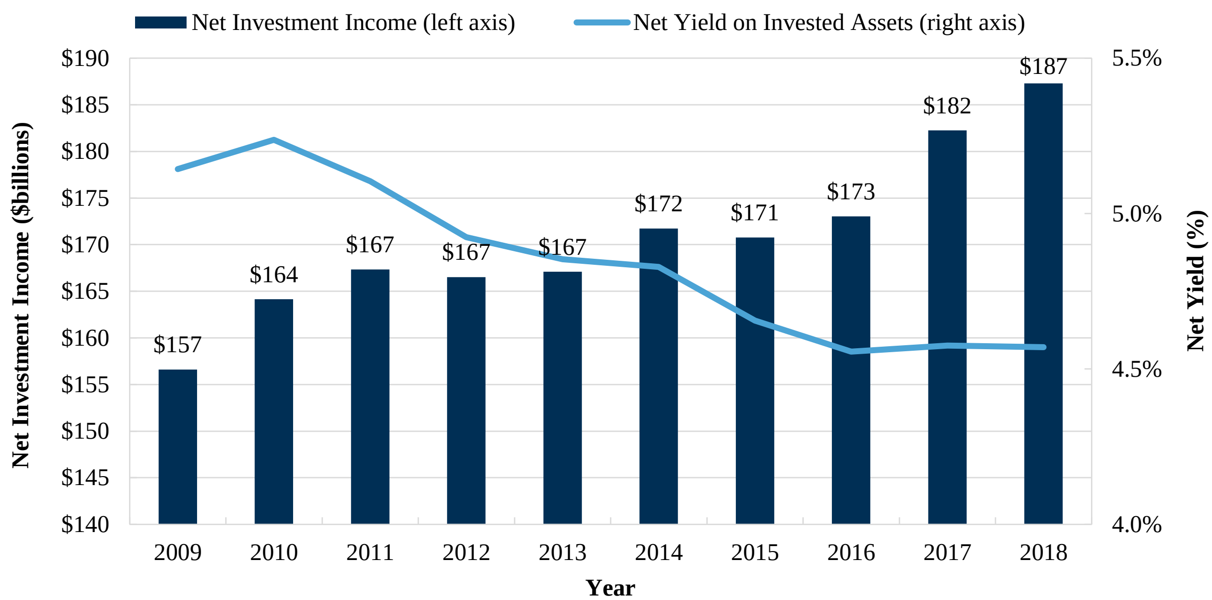
Total L&H sector expenses increased by nearly ten percent in 2018. Total contract surrenders increased 13 percent in 2018, reserve increases jumped by 34 percent, and total benefits payments rose three percent. Significant increases in aggregate reserves for ordinary and group annuities, as well as accelerated surrenders and withdrawals of ordinary and group annuities, drove the growth in total expenses.[394] A 36 percent increase in the net amount transferred from separate accounts was the only notable favorable change in 2018.

[394] Zawacki, "US Life Industry Premiums Rose, but Statutory Profits Fell in 2018."

iii. Investment Income

Net investment income represented about 21 percent of aggregate L&H sector revenues in 2018, down slightly from 22 percent in 2017. Nonetheless, net investment income increased by nearly three percent for the year, to $187 billion. Figures 18 and 19 show L&H sector net investment income from invested assets (excluding net realized gains and losses on the disposition of assets) and the net investment yield for recent years.

Figure 18: L&H Sector Annual Net Investment Income ($ billions) and Net Yield on Invested Assets (%)



Source: S&P Global

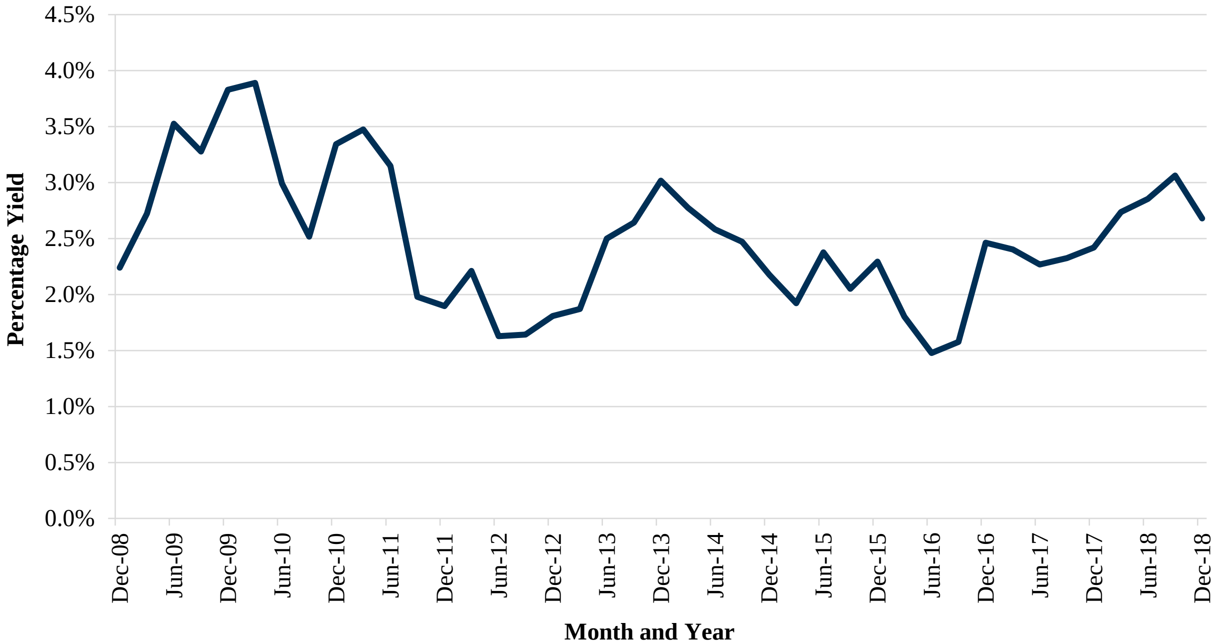
Figure 19: L&H Sector Annual Net Investment Income ($ thousands) and Net Yield on Invested Assets (%)

	2014	2015	2016	2017	2018
Net Investment Income	$ 171,733,049	$ 170,760,967	$ 173,025,713	$ 182,255,857	$ 187,296,188
Total Cash & Investments	3,631,569,037	3,703,872,525	3,891,873,165	4,074,792,672	4,120,824,800
Net Yield on Invested Assets	**4.83%**	**4.66%**	**4.56%**	**4.58%**	**4.57%**

Source: S&P Global

Longer-term interest rates steadily rose over most of 2018, followed by a sharp decline in December (see Figure 20); the net yield on invested assets of 4.57 percent was essentially flat compared to the 2018 result of 4.58 percent. Additionally, the nearly three percent gain in net investment income outpaced the growth in total cash and invested assets in 2018, which was slightly more than one percent. Nonetheless, the general interest rate environment remained near historically low levels at the end of the year, and continued to present risks to the L&H sector.[395] A more detailed discussion of these risks can be found in Section VI.D of this Report.

Figure 20: Percentage Yield on 10-Year Treasury Bonds



Source: S&P Global

In 2018, the L&H sector net realized capital losses continued to narrow, dropping to $4.7 billion from $8.6 billion in 2017, or nearly 45 percent. This followed a 25 percent decrease in realized capital losses experienced in 2017. The improvement in 2018 was due to higher realized gains on bonds and other invested assets. Losses on derivative securities (almost exclusively used for hedging transactions) were significantly higher compared to 2017.

iv. Net Income and Return on Equity

Figure 21 presents a summary income statement for the L&H sector. Total revenues in the L&H sector were $904 billion in 2018, an increase of nearly eight percent from the $840 billion reported in 2017. The significant change in the reinsurance allowance, i.e., reserve adjustments on reinsurance ceded, from a $25 billion expense in 2017 to a $32 billion benefit in 2018, was the main driver of the gain in total revenues. Several large life insurers, including American General Life Insurance Company, Voya Insurance, Delaware Life Insurance Company, and Hannover Life Reassurance Company of America, were the main contributors to this adjustment.[396] The one percent increase in net premiums written, the three percent increase in net investment income, and a two percent increase in separate accounts revenues, also contributed to the rise in total revenues. Total expenses increased by nearly 11 percent to $839

[395] *See also* FIO, *2017 Annual Report*, 11.

[396] Matthew Coppola, *Best's Special Report: First Look: 2018 Life/Annuity Financial Results* (2019).

billion, leading to a 26 percent drop in pre-tax operating income. Net income fell by nearly nine percent to $38 billion in 2018 due to the reduction in net realized capital losses and a 72 percent decline in federal income taxes.

Figure 21: L&H Sector Net Income ($ thousands)

	2014	2015	2016	2017	2018
Premiums, Consideration & Deposits	$ 647,273,909	$ 638,190,255	$ 599,872,141	$ 597,055,044	$ 603,640,320
Net Investment Income	171,733,049	170,760,967	173,025,713	182,255,857	187,296,188
Reinsurance Allowance	(14,987,927)	(86,443,933)	(16,975,046)	(25,108,912)	32,080,941
Separate Accounts Revenue	34,270,975	35,197,929	34,652,744	36,551,982	37,266,227
Other Income	39,701,639	90,479,682	61,330,223	49,001,443	43,800,053
Total Revenue	**877,991,645**	**848,184,900**	**851,905,776**	**839,755,415**	**904,083,729**
Total Expenses	812,545,876	775,520,244	766,592,880	759,253,869	839,365,714
Policyholder Dividends	16,430,515	18,271,884	18,230,320	17,498,496	18,190,052
Net Gain from Operations before Tax	49,012,243	54,396,094	67,061,448	63,003,084	46,527,963
Federal Income Tax	10,106,056	10,566,280	16,282,427	12,358,720	3,417,611
Net Income before Capital Gains	38,905,344	43,832,635	50,782,390	50,644,532	43,110,352
Net Realized Capital Gains (Losses)	(1,306,441)	(3,543,569)	(11,384,798)	(8,554,859)	(4,747,496)
Net Income	**$ 37,605,615**	**$ 40,285,063**	**$ 39,397,552**	**$ 42,089,546**	**$ 38,362,8556**

Source: S&P Global

Figure 22 shows key operating ratios for the L&H sector. The L&H sector's 2017 pre-tax operating margin decreased to 5.2 percent from 7.5 percent in 2017. Similarly, the decrease in operating income led to a drop in the sector's pre-tax operating return on average equity to 11.7 percent from the 16.3 percent recorded in 2017, and the return on average equity slipped to 9.7 percent from 10.9 percent.

Figure 22: L&H Sector Operating Ratios

	2014	2015	2016	2017	2018
Pre-Tax Operating Margin	5.58%	6.41%	7.87%	7.50%	5.15%
Return on Average Equity	10.96%	11.17%	10.54%	10.85%	9.66%
Pre-Tax Operating Return On Average Equity	14.29%	15.08%	17.93%	16.25%	11.72%
Return on Average Assets	0.61%	0.64%	0.61%	0.62%	0.55%

Source: S&P Global

b) Condition

This section presents information on the 2018 financial condition of the L&H sector, highlighting financial measures and trends, which help to characterize the sector's solvency and financial stability over the last decade and in the post-crisis period.[397]

[397] According to the National Bureau of Economic Research, the financial crisis began in December 2007 and lasted until June 2009. *See* "U.S. Business Cycle Expansions and Contractions," National Bureau of Economic Research, http://nber.org/cycles/. The post-crisis period noted throughout this section refers to the period, beginning at year-end 2009 through 2018 and calculations cited for the post-crisis period are based on this timeframe. The post-crisis period is synonymous with the 10-year period under review in this section, unless otherwise noted.

i. Capital and Surplus

As Figure 23 shows, the L&H sector's financial condition continues to be reflective of positive growth in general account assets and capital and surplus.

Figure 23: L&H Capital and Surplus Position ($ thousands)

	2014	2015	2016	2017	2018
Capital & Surplus	$ 353,968,597	$ 367,249,564	$ 380,686,099	$ 394,915,599	$ 399,291,629
Year-Over-Year Growth	6.6%	3.8%	3.7%	3.7%	1.1%
General Account Assets	3,835,978,902	3,912,020,651	4,117,531,087	4,301,328,459	4,354,994,987
Year-Over-Year Growth	4.4%	2.0%	5.3%	4.5%	1.2%
General Account Assets, Adjusted[398]	$3,800,605,627	$3,867,610,288	$4,073,722,620	$4,231,328,558	$4,279,492,867
Capital & Surplus to General Account Adjusted Assets	9.31%	9.50%	9.34%	9.33%	9.33%

Source: S&P Global

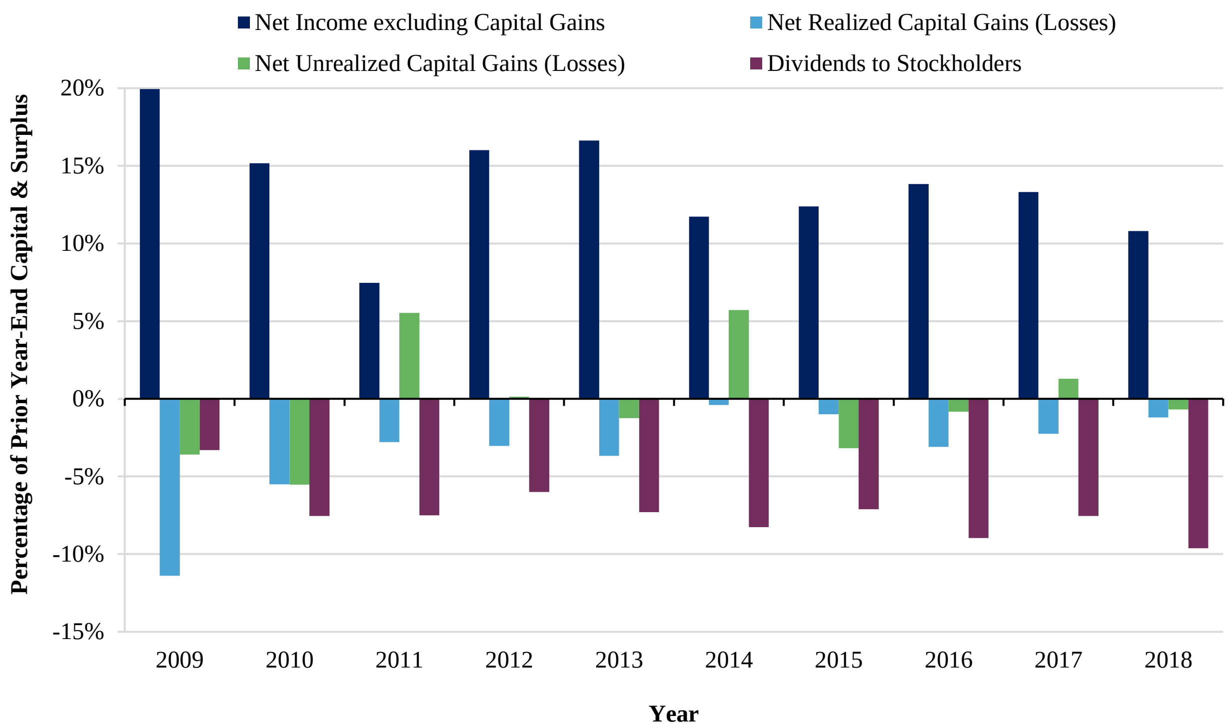
In reviewing the last five years of the L&H sector's capital position, year-over-year growth in capital and surplus decelerated considerably in 2018, increasing at just over one percent from the previous year to total $399.3 billion. The sector's capital and surplus growth in 2018 dipped to its lowest level in the last 10 years, while 2009 and the onset of economic recovery from the financial crisis represented a high for the period with an annual growth rate of 15.5 percent. Growth in capital and surplus averaged 4.8 percent annually over the past decade but even when excluding the highs and lows for the period, the L&H sector exhibited solid growth in its capital and surplus base, averaging 3.9 percent on a yearly basis.

At 3.2 percent on average since 2008, annual growth in total general account assets has remained positive, further supporting the sector's ability to pay policyholder claims. As Figure 23 indicates, the ratio of capital and surplus to general account *adjusted* assets (adjusted by eliminating cash and cash equivalents) averaged 9.36 percent annually over the last five years. By comparison, the same ratio averaged 9.1 percent annually from 2009 to 2013, resulting in a decade average of about 9.23 percent on a yearly basis and demonstrating that in recent years, the L&H sector has moved to enhance its capital levels to bear the risk exposure of the assets backing its obligations.

The L&H sector's capital position can largely be attributed to sustained positive earnings over the last decade, with net income before capital gains contributing close to 14 percent to the previous year's capital and surplus on average in the post-crisis period. Figure 24 shows key contributors to the L&H sector's capital and surplus.

[398] General Account adjusted assets refers to total general account assets less cash and cash equivalents, as such holdings pose little risk to the insurer.

Figure 24: Key Contributors to L&H Sector Capital and Surplus

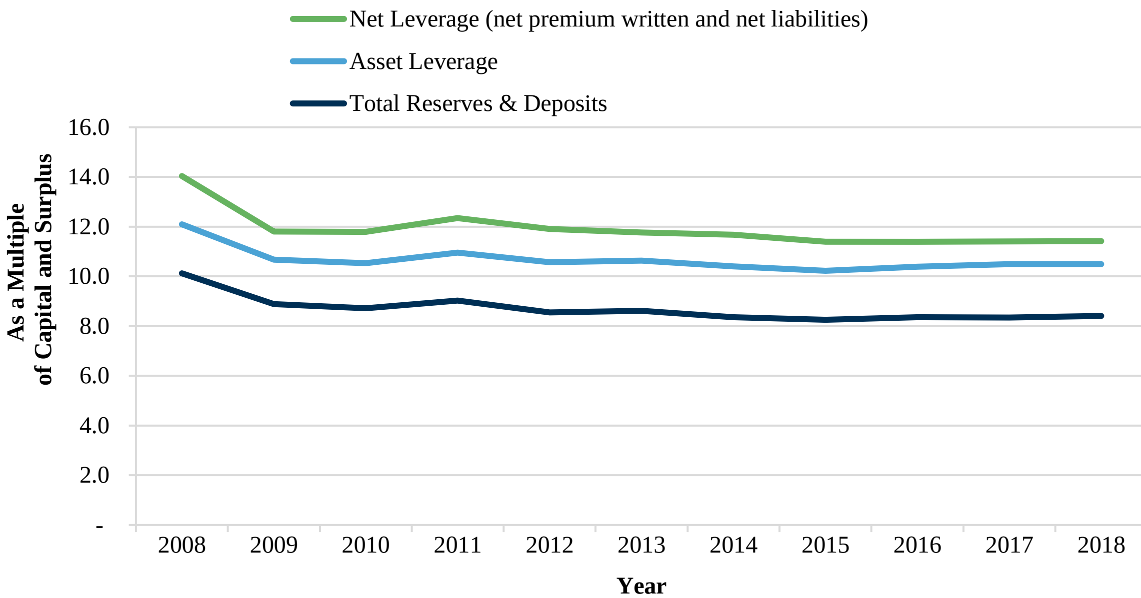


Source: S&P Global

Growth in the L&H sector's capital base can be observed more clearly by eliminating the effect of capital contributions in the form of surplus notes. Organic growth in capital and surplus has averaged 4.7 percent annually in the last decade, mainly due to consistently strong underwriting results that have enhanced net income. Partially offsetting that growth have been stockholder dividends. In 2018, stockholder dividends were $38 billion, the highest that the L&H sector has paid in the last ten years. If there had been no dividend payments in 2018, year-over-year organic growth in capital and surplus would have been more than 10 percent. Overall, stockholder dividends have comprised 7.3 percent of prior year-end capital and surplus on average annually post crisis.

Contributing to the strength of the L&H sector's capital position has been steady on-balance sheet leverage since the highs reached during the height of the financial crisis in 2008. The greater financial flexibility afforded by expected and persistent leverage ratios has enabled insurers to better meet two significant goals in fulfilling policyholder obligations: (1) returning a profit by investing the premiums received from underwriting activities; and (2) limiting the risk exposure created by the policies underwritten. Insurers may also cede premiums to reinsurance companies in order to off-load some of the risks from their own balance sheets. As Figure 25 shows, general account leverage for the L&H sector has held firm for much of the last ten years.

Figure 25: On-Balance Sheet General Account Leverage for the L&H Sector



Source: S&P Global

The L&H sector's net leverage ratio[399] of 11.42 at year-end 2018 was not materially changed from the previous two years and continued to remain below the average of 11.69 per year post-2008. Specifically, the liabilities-to-equity multiple of 9.91 at year-end 2018, reflecting general account liabilities of $4.0 trillion as a multiple of capital and surplus, was not materially changed from 9.90 at year-end 2017 and has averaged at a multiple of almost 10 annually in the past decade. Net premiums, annuities, and considerations (collectively referred to as net premiums in the net leverage ratio) have averaged 1.73 times capital and surplus per year post-crisis. Surplus relief through reinsurance for the L&H sector has been gradually climbing over the last five years, equating to 5.44 percent of capital and surplus at year-end 2018 compared to 3.72 percent at year-end 2014.[400] Cessions to reinsurers accounted for 33.2 percent of gross premiums at year-end 2018, climbing from 27 percent at year-end 2017 and raising the annual average to 23 percent for the decade.

Growing annually at 2.8 percent on average post-crisis, total policy reserves and deposit-type contract reserves were $3.4 trillion at year-end 2018, up by over 2 percent from $3.3 trillion at year-end 2017. The multiple of policy reserves and deposits to capital and surplus has held relatively firm over the last five years, ranging between 8.3 and 8.4. From 2009 and 2013, multiples ranged between 8.6 and 9; whereas 2008 was an outlier, reaching a multiple in excess

[399] Net leverage ratio is an indicator of the sector's exposure to pricing and estimation errors, determined by calculating total liabilities and net premiums, annuities, and considerations as a multiple of capital and surplus.

[400] The use of reinsurance for surplus relief is most common when an insurer begins to rapidly expand its volume of premiums written. The calculation in this Report involves the amount of surplus not yet reported as income from commissions and expense allowance on reinsurance ceded during the current year as a share of capital and surplus. It captures the amounts related to A&H business as well as life and annuity business for general and separate accounts. *See generally* FIO, *Reinsurance Report*.

of 10 due to a 5.7 percent decline in capital and surplus and a 5.3 percent increase in policy reserves and deposits that year. The trend since 2008 has enabled the sector to alleviate capital strain and enhance its financial flexibility.

The asset leverage ratio aims at measuring the potential impact on the balance sheet arising from the volatility and credit quality of the sector's investment portfolio, reinsurance recoverables, and agents' balances, and is calculated as the sum of cash and invested assets plus reinsurance recoverables and agents' balances to capital and surplus. In the past decade, the L&H sector's asset leverage ratio has ranged between a low of 10.23 at year-end 2015 and a high of 10.95 at year-end 2011. At year-end 2018, the multiple was 10.49, not materially changed from 10.5 at year-end 2017, and 10.39 at year-end 2016. The steadiness of the asset leverage multiple, remaining close to the post-crisis annual average of 10.54, suggests that no substantial deviations have occurred in the sector's exposure to investment, interest rate, and credit risks in recent years.

ii. Asset Base

Reinforcing the sector's stable capital base have been positive general account asset growth and investment allocations consistent with policyholder obligations. General account assets rose to $4.4 trillion in 2018 from $4.3 trillion in 2017, averaging an annual growth rate of 3.2 percent over the last decade. Separate account assets dropped considerably for the first time in the last ten years, falling by 9.2 percent from 2017 levels and likely linked to the volatility in financial markets observed at the end of 2018. The annual growth rate of separate account assets has nonetheless been double that of general account assets, averaging 6.4 percent over the past decade. Total L&H sector assets, including separate accounts, were $6.8 trillion and $7.0 trillion for the years ending 2018 and 2017, respectively.

Figure 26 shows the composition of the L&H sector's asset portfolio and distribution of cash and investments. Of total asset holdings, general account assets have averaged over 62 percent of the portfolio on a yearly basis over the last five years, while separate account assets have averaged close to 38 percent.

Figure 26: Composition of L&H Sector General Account Asset and Investment Portfolio

	2014	2015	2016	2017	2018
General Account Assets / Total Assets	61.3%	61.8%	62.3%	61.3%	63.9%
Separate Account Assets / Total Assets	38.7%	38.2%	37.7%	38.7%	36.1%
Bonds (Long-Term)	73.9%	73.8%	73.5%	73.0%	72.5%
Preferred Stocks	0.3%	0.3%	0.2%	0.3%	0.3%
Common Stocks	2.1%	2.0%	2.2%	2.3%	2.0%
Mortgage Loans	10.3%	10.9%	11.2%	11.7%	12.6%
Real Estate	0.6%	0.6%	0.6%	0.6%	0.5%
Contract Loans	3.6%	3.4%	3.3%	3.2%	3.1%
Derivatives	1.6%	1.5%	1.6%	1.4%	1.4%
Cash & Short Term Investments	2.8%	2.8%	2.6%	2.6%	2.5%
Other Investments	4.9%	4.7%	4.7%	5.0%	5.1%
Total Cash & Invested Assets	**100%**	**100%**	**100%**	**100%**	**100%**
Share of General Account Assets	**94.7%**	**94.7%**	**94.5%**	**94.7%**	**94.6%**

Source: S&P Global

As reflected in Figure 26 for recent years, the structure of the investment portfolio has remained generally consistent over the last ten years. Cash and invested assets continued to account for nearly 95 percent of the general account asset portfolio at year-end 2018, aligned with the yearly trend for the last decade. About three-quarters on average of the L&H sector's investment portfolio has consisted of bond holdings in each of the last ten years, reflective of the significant role that life insurers play in the corporate bond market. Of total bonds, almost 97 percent have been long-term on average—in line with the long-term nature of obligations assumed under life policies and contracts. This concentration is indicative of insurer risk management practices that match asset and liability durations, aimed at mitigating the impact of interest rate fluctuations on capital and surplus and providing the ability to estimate cash flows in order to meet debt and policyholder obligations as they fall due.

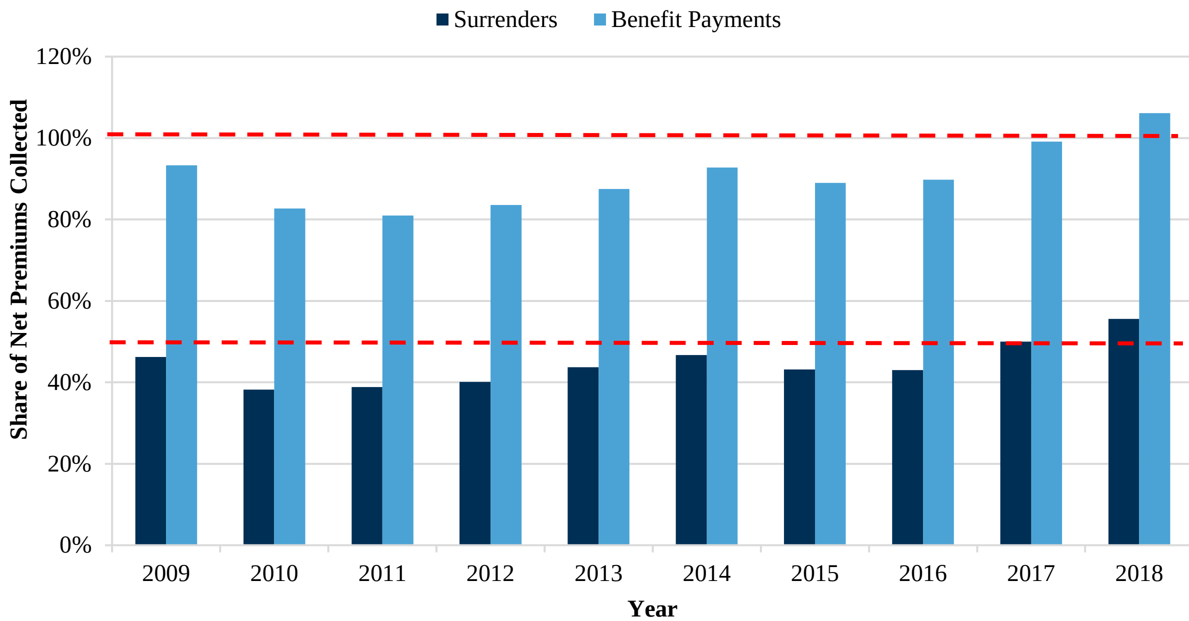
Mortgage loans remain the second largest investment class held by the L&H sector, averaging 10.6 percent of cash and invested assets annually over the last decade.

As Figure 26 details for the past five years, the L&H sector has slowly reduced the allocation of its investment portfolio to bond holdings, falling by 50 basis points in each of the last three years. At the same time, the L&H sector raised its holdings of mortgage loans by 50 basis points in 2017 and another 94 basis points in 2018. The reallocation may be reflective of the residual effects of the low interest rate environment, which began post-crisis, and the L&H sector's search for yield to mitigate the impact to investment earnings.

iii. Liquidity

The L&H sector's sound financial health is further supported by its liquidity position, despite recent adverse trends. Surrender activity jumped significantly in 2017, with that same trajectory continuing into 2018 when the levels represented a new high for the decade both by volume and as a share of net premiums collected. Benefit payments similarly reached a 10-year high, as illustrated in Figure 27. Even with these developments, positive cash flows from operations, steady growth in cash and invested assets, and a stable current liquidity ratio suggest that the L&H sector continues to possess the capacity to fulfill its ongoing business needs.

Figure 27: Cash Flows from Operations for the L&H Sector



Source: S&P Global

Benefit payments as a share of premiums collected, net of reinsurance, have shown an upward trend since 2015. In 2018, benefit payments of $667.9 billion exceeded net premiums receipts, resulting in a ratio of 106.1 percent, up from $612.7 billion and 99.1 percent in 2017. On average, benefit payments have consumed 90.5 percent of net premiums collected on a yearly basis over the past decade.

Surrenders, before 2017, comprised 42.5 percent of net premium receipts on average annually in the post-crisis period compared to 48.1 percent in 2008. In 2017, the ratio reached 50 percent as illustrated in Figure 27 and peaked as a new decade high in 2018 at 55.6 percent. Surrenders were $350.2 billion, a 13.3 percent increase from $308.9 billion in 2017. By contrast, year-over-year growth in net premiums collected was considerably lower. Net premium receipts were $629.2 billion in 2018, a 1.8 percent increase from $618.2 billion in 2017.

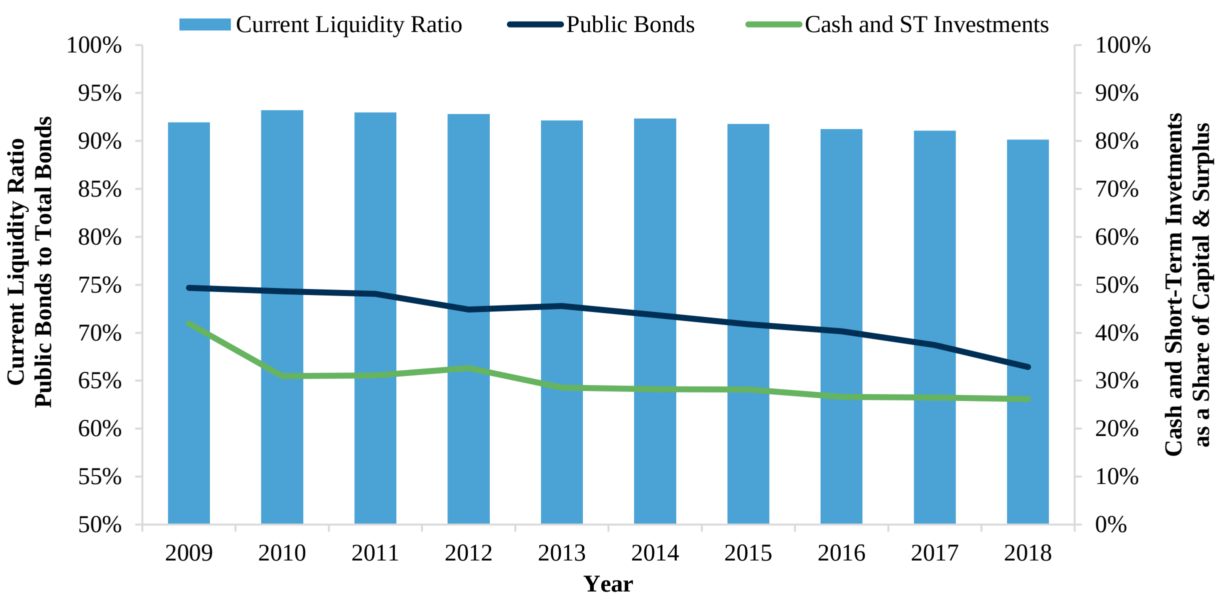
A number of factors could be at work in the recent trends. Of note is the continued interest rate hikes in the last two years. As such, expectations of higher interest earnings could be driving market participants to seek out other investment opportunities.

With an average annual growth rate of 3.2 percent over the last decade, cash and invested assets were $4.1 trillion at year-end 2018, rising by 1.2 percent from the prior year-end and nearly mirroring the 1.4 percent year-over-year growth in general account liabilities. As a result, the ratio of general account liabilities to cash and invested assets has remained steadfast—at 96.1 percent as of year-end 2018 compared to 95.9 percent as of year-end 2017 and averaging at 96 percent yearly for the decade. Bonds have steadily made up the bulk of cash and investments, totaling $3.0 trillion at year-end 2018, not materially changed from the previous year-end.

Just over 30 percent of the bond portfolio had maturities that ranged between five and 10 years in 2018, not significantly changed from 2017. Another 37.8 percent, or $1.15 trillion of bonds, had maturities of greater than 10 years as of year-end 2018, not considerably changed from 38.6 percent and $1.17 trillion as of year-end 2017—more than half of which consisted of bonds with maturities in excess of 20 years at both points in time. In other words, more than 60 percent of the entire bond portfolio has consistently been allocated to holdings that are medium to long term in duration in each of the last 10 years, supporting the longer time horizon of a life insurer's obligations. Moreover, the L&H sector has held nearly 94 percent on average of its total bonds in investment-grade holdings each year since 2009, mitigating the sector's credit risk exposure.

There were a few signs in 2018 of a potential weakening in the quality of the L&H sector's investment portfolio. As a share of capital and surplus, cash and short-term investments have continually declined from a high of 41.9 percent at year-end 2009 to 26.2 percent at year-end 2018, as illustrated in Figure 28.

Figure 28: A View of L&H Sector Liquidity



Source: S&P Global

Furthermore, privately-placed bonds are accounting for a greater share of total bond holdings over the past decade, while publicly-traded bonds have declined from a high of nearly 75 percent as of year-end 2009 to just over 66 percent as a percentage of total bond holdings as of year-end 2018. Because private-placement bonds are not assigned credit ratings, the degree of risk and whether the risk assumed is commensurate with the compensation received are difficult to ascertain. Private-placement bonds have gradually risen from a 2.1 multiple of capital and surplus at year-end 2009 to 2.6 at year-end 2018.

Due to the generally illiquid nature of affiliated holdings—i.e., a market does not exist for such types of investments, making it difficult to ascertain their value—significant growth in affiliated investments can erode the strength of an entity's capital base. Before 2018, the L&H sector's affiliated holdings of cash and invested assets had progressively mounted in the post-crisis period, averaging an annual growth rate of 7.6 percent. In 2018, that trend reversed. Affiliated cash and invested assets of $174.9 billion as of year-end 2018 represented 43.7 percent of capital and surplus, down from $184.7 billion and 46.9 percent as of year-end 2017. Affiliated common stock accounted for 28.8 percent of all affiliated investment holdings at year-end 2018, while affiliated other investments[401] made up another 48.5 percent. By comparison, affiliated common stock and affiliated other investments made up 31.9 percent and 45.7 percent of total affiliated holdings, respectively, at year-end 2017. It is too soon, however, to determine whether the reduction in affiliated holdings in 2018 represented an anomaly or the beginning of a new trend.

The few negative trends observed in liquidity in 2018 are mitigated by the L&H sector's overall financial profile. Specifically, despite the downward trend in cash and short-term investments, the L&H sector has exhibited a current liquidity ratio ranging between 90 percent and 93.2 percent, as shown in Figure 28, demonstrating a consistent capacity to satisfy its liabilities.[402] Second, publicly-traded and privately-placed bonds together have largely consisted of investment-grade bonds, averaging close to 94 percent of the entire bond portfolio each year over the past decade. Third, affiliated cash and investments have averaged only 4 percent of total cash and invested assets annually since 2009. Finally, the bulk of unaffiliated investment holdings is aligned with the L&H sector's asset/liability matching philosophy, with long-term bonds dominating the portfolio. Unaffiliated cash and invested assets were $4.0 trillion at year-end 2018, up by 1.5 percent from $3.9 trillion at year-end 2017. The ratio of unaffiliated cash and invested assets to total general account liabilities has remained at a multiple of 1 in each year of the last ten years, while the contribution of unaffiliated investments to capital and surplus has remained steady and substantial. The level of unaffiliated investments has been 10 times that of capital and surplus on average annually since 2009, further bolstering the L&H sector's ability to uphold its policyholder and funding commitments as they arise.

[401] "Other" investments include, but are not limited to, surplus notes, limited partnerships, joint ventures, hedge funds, private equity funds, and direct investments.

[402] Current liquidity is used to determine the amount of liabilities that can be covered with liquid assets. It is calculated as follows: the numerator equals net admitted cash and investments less the sum of net admitted first lien real estate loans, net admitted real estate loans less first liens, net admitted occupied properties, net admitted income generating properties, net admitted properties held for sale, affiliated long-term bonds, and affiliated preferred stock; the denominator equals total liabilities less the sum of net transfers to separate accounts due, asset valuation reserve, transfers from separate accounts, and protected cell liabilities.

3. Property and Casualty Sector

This section presents additional analysis of the financial performance of the P&C sector in 2018, and then assesses the P&C sector's overall financial condition as of December 31, 2018.

a) Performance

i. Net Premiums Written

Figure 29 shows the level and composition of P&C sector direct premiums written by major lines of business, and Figure 30 shows the corresponding dollar values and a reconciliation to net premiums earned (i.e., direct premiums written less net reinsurance premiums ceded and the change in unearned premiums reserve). For 2018, total P&C sector net premiums written reached a record level at $615 billion, marking a strong ten percent increase over 2017 levels. Direct premiums written for personal lines of business grew by six percent, while direct premiums written for commercial lines of business increased by more than four percent. Net reinsurance premiums ceded dropped by 30 percent, or some $29 billion, and boosted the growth in net premiums written. Significant intracompany reinsurance transactions among several Chubb Group companies contributed to the growth in net premiums written.[403] Economic growth in the United States and rate increases continued to drive direct premiums written growth, while changes in reinsurance utilization generated almost half of the growth in net premiums written.[404] The changes in reinsurance utilization appeared to be related to the Base Erosion and Anti-abuse Tax provision in the Tax Cuts and Jobs Act,[405] which may have led insurers to reduce premiums ceded to non-U.S. affiliates due to possible tax implications.[406]

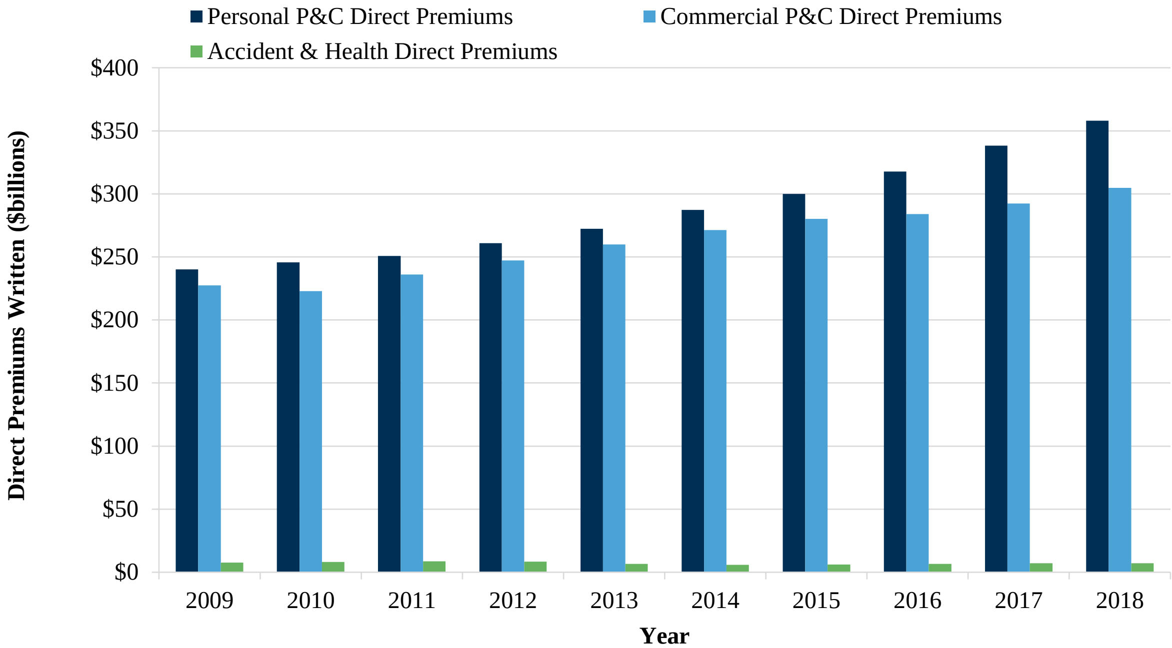
[403] Matthew Coppola, *Best's Special Report First Look: 2018 Property/Casualty Financial Results* (2019).

[404] Neil Spector and Robert Gordon, APCIA, *Property/Casualty Insurance Results: 2018* (2019), http://www.pciaa.net/pciwebsite/common/page/attachment/81823.

[405] FIO, *2018 Annual Report*, 104-107.

[406] Neil Spector and Robert Gordon, *Property/Casualty Insurance Results: 2018.*

Figure 29: P&C Sector Direct Premiums Written ($ billions)



Source: S&P Global

Figure 30: P&C Sector Direct Premiums Written ($ thousands)

	2014	2015	2016	2017	2018
Personal P&C Direct Premiums	$287,272,384	$300,054,135	$317,762,245	$338,252,174	$358,001,368
Commercial P&C Direct Premiums	271,209,044	280,072,580	284,084,864	292,322,834	304,790,673
A&H Direct Premiums	5,766,660	6,142,327	6,565,978	7,222,990	7,099,101
Direct Premiums Written	**570,782,303**	**591,757,789**	**613,383,327**	**642,509,475**	**673,781,348**
Net Reinsurance Premiums	(67,958,293)	(71,247,200)	(79,397,787)	(84,086,607)	(58,924,758)
Net Premiums Written	**502,824,010**	**520,510,588**	**533,985,541**	**558,422,868**	**614,856,590**
Change in Unearned Premiums Reserve	9,093,094	8,400,547	4,801,796	12,090,135	18,402,862
Net Premiums Earned	**$ 493,730,916**	**$512,110,041**	**$529,183,745**	**$546,332,732**	**$ 596,453,729**

Source: S&P Global

ii. Underwriting Results

Figure 31 shows the P&C combined ratio and its construction for the past several years.[407]

Figure 31: P&C Sector Combined Operating Ratios

	2014	2015	2016	2017	2018
Loss Ratio	57.21%	57.48%	60.68%	64.15%	60.72%
Loss Adjustment Expense Ratio	11.82%	11.83%	11.61%	11.76%	10.71%
Loss and Loss Adjustment Expense Ratio	**69.04%**	**69.31%**	**72.29%**	**75.91%**	**71.44%**
Net Commission Ratio	10.38%	10.55%	10.41%	10.29%	11.25%
Salaries & Benefits Ratio	8.14%	8.24%	8.32%	7.91%	7.38%
Tax, License & Fees Ratio	2.51%	2.55%	2.51%	2.47%	2.40%
Administrative & Other Expense Ratio	6.55%	6.72%	6.68%	6.67%	6.25%
Expense Ratio	**27.58%**	**28.05%**	**27.92%**	**27.34%**	**27.27%**
Policyholder Dividend Ratio	0.60%	0.59%	0.56%	0.61%	0.55%
Combined Ratio	**97.21%**	**97.95%**	**100.76%**	**103.85%**	**99.26%**

Source: S&P Global

The combined ratio for the P&C sector decreased significantly to approximately 99.3 percent in 2018 from 103.9 percent in 2017, marking a return to an underwriting profit following two consecutive years of losses. A combined ratio greater than 100 percent indicates that premiums did not cover losses and expenses in a given period (i.e., underwriting operations made a negative contribution to net income). Investment income, realized capital gains/losses, and income taxes are not considered in the combined ratio. Natural catastrophes were less severe in 2018 and contributed to the return to underwriting profits, but larger improvement in personal auto liability losses and strong workers' compensation results were the main drivers of the lower combined ratio.[408] The expense ratio decreased slightly in 2018 compared with 2017.

iii. Investment Income

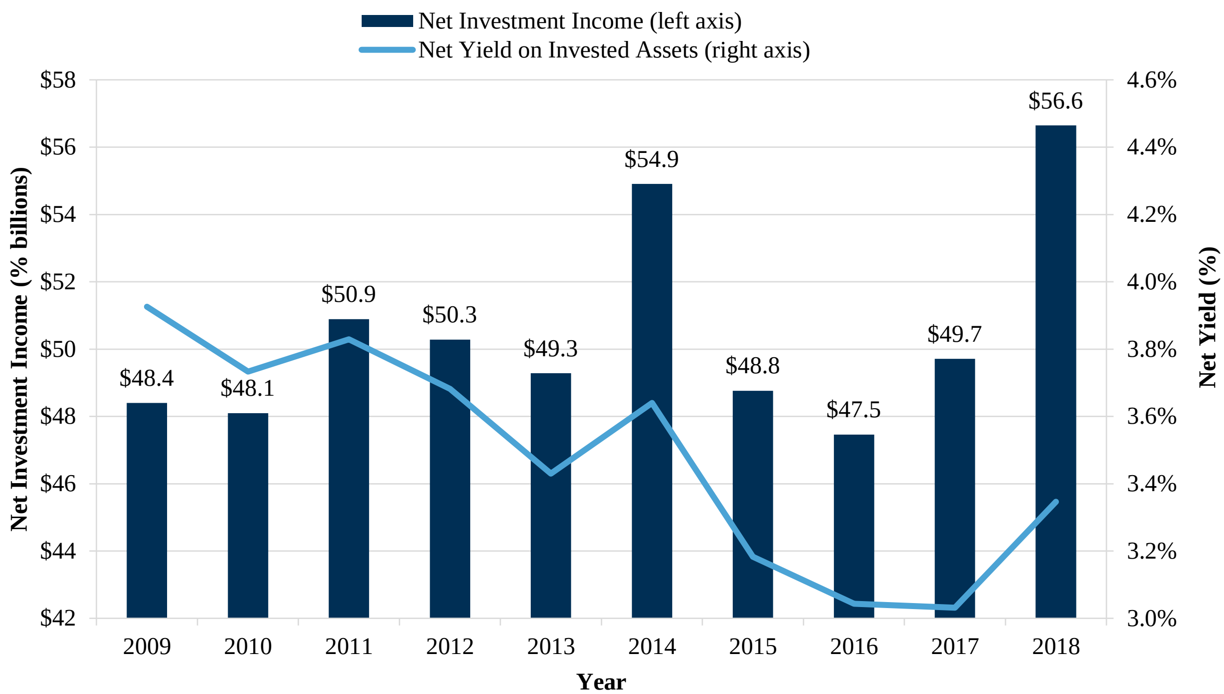
Net investment income for the P&C sector increased for the second consecutive year, rising a strong 14 percent to $57 billion in 2018 from $50 billion in the prior year. Cash and invested assets balances were essentially flat compared to 2017, allowing for the first increase in the net yield on invested assets since 2014; the net yield on invested assets rose to 3.35 percent in 2018 from 3.03 percent in 2017. Figure 32 depicts a longer-term view of the trend in net investment income and net yield on invested assets for the P&C sector, and Figure 33 provides this data for the past five years. Realized capital gains and losses are reported separately and are not a component of net investment income. Because P&C insurers are less dependent than L&H insurers on net investment income to fund losses and expenses, net investment income accounted

[407] S&P Global ratios include the policyholder dividend ratio for transparency because dividends represent a cash outlay.

[408] Tim Zawacki, "Private Auto Recovery Helps US P&C Industry back to Underwriting Profitability," *S&P Global Market Intelligence*, March 19, 2019, https://platform.mi.spglobal.com/web/client?auth=inherit&overridecdc=1&#news/article?id=50595102.

for about nine percent of total P&C sector revenues in 2018 (compared to 21 percent in the L&H sector).

Figure 32: P&C Sector Annual Net Investment Income ($ billions) and Net Yield on Invested Assets (%)



Source: S&P Global

Realized capital gains on investments also contributed to profitability in 2018, as the P&C sector recorded net realized capital gains of nearly $11 billion, marking a 45 percent decrease from 2017. Realized capital gains in 2018 were more in line with historical results. Lower gains on common stocks and net losses on bonds were the main drivers of the decrease in net realized capital gains.

Figure 33: P&C Sector Annual Net Investment Income ($ thousands) and Net Yield on Invested Assets (%)

	2014	2015	2016	2017	2018
Net Investment Income	$54,904,547	$48,765,011	$47,461,805	$49,707,155	$ 56,646,731
Total Cash & Investments	1,532,509,401	1,531,415,182	1,587,837,614	1,691,403,528	1,694,067,697
Net Yield on Invested Assets	**3.64%**	**3.18%**	**3.04%**	**3.03%**	**3.35%**

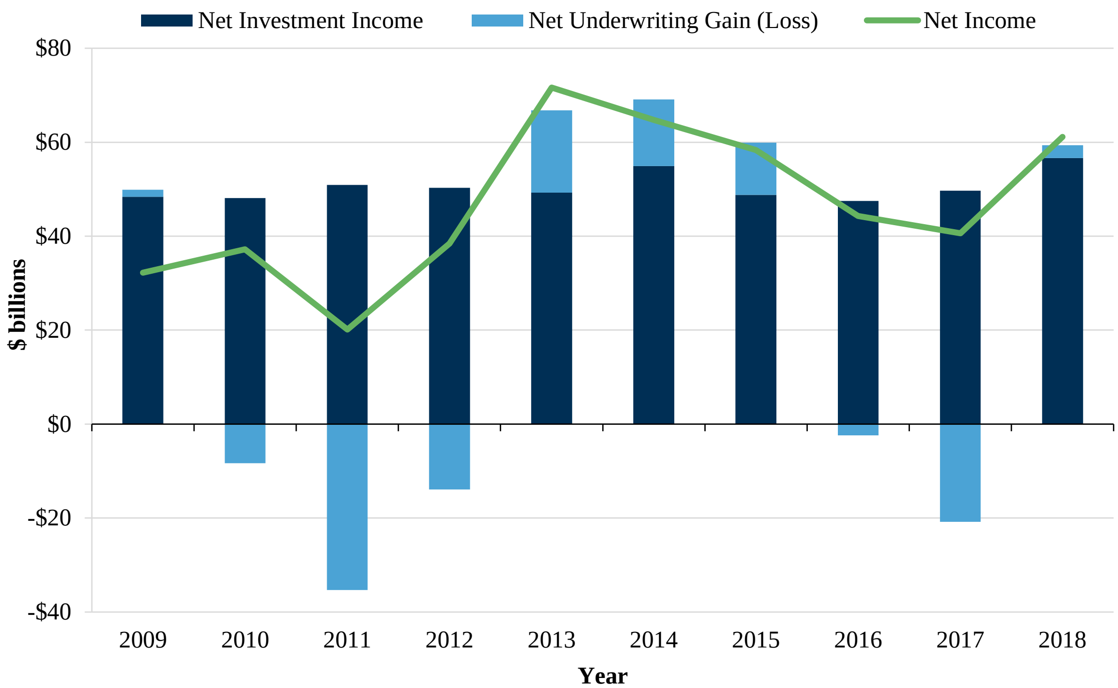
Source: S&P Global

iv. Net Income

The P&C sector's net income rebounded strongly in 2018, following four consecutive years of decline, rising 50 percent to $61 billion from $41 billion reported in 2017, as shown in Figure 34. The return to an underwriting profit, albeit slight, and the strong growth in investment income led to a 71 percent increase in pre-tax operating income, which rose to $68 billion in

2018, compared to $40 billion in 2017. A shift from a slight refund of federal income taxes in 2017 to an expense in 2018 limited the gain in net income. Figure 35 provides a summary income statement for the P&C sector.

Figure 34: P&C Sector Net Income ($ billions)



Source: S&P Global

Figure 35: P&C Sector Summary Income Statement ($ thousands)

	2014	2015	2016	2017	2018
Net Premiums Earned	$493,730,916	$512,110,041	$529,183,745	$546,332,732	$596,453,729
Losses and Loss Adjustment Expense Incurred	340,855,210	354,958,963	382,522,916	414,726,222	426,079,081
Other Underwriting Expense Incurred	139,137,758	145,136,437	148,009,926	151,073,309	166,661,523
Other Underwriting Deductions	(475,218)	857,268	1,073,235	1,572,203	1,020,794
Net Underwriting Gain (Loss)	**14,213,165**	**11,157,373**	**(2,422,331)**	**(20,799,063)**	**2,692,631**
Policyholder Dividends	2,943,412	3,016,579	2,943,624	3,308,785	3,272,394
Net Investment Income	54,904,547	48,765,011	47,461,805	49,707,155	56,646,731
Net Realized Capital Gains (Losses)	11,789,595	10,073,274	8,484,994	19,639,559	10,696,720
Finance Service Charges	3,271,709	3,333,008	3,452,738	3,648,039	3,735,628
All Other Income	(6,158,765)	(1,808,648)	(2,410,912)	(9,026,283)	(2,376,962)
Net Income After Capital Gain (Loss) Before Tax	**75,076,697**	**68,503,439**	**51,622,428**	**39,860,623**	**68,122,353**
Federal Income Tax	10,318,207	10,188,539	7,314,767	(784,844)	6,998,027
Net Income	**$64,757,509**	**$58,314,974**	**$44,307,882**	**$40,645,466**	**$61,124,326**

Source: S&P Global

Figure 36 displays key measures of returns for the P&C sector. Consistent with the improvements on the income statement, each of these metrics increased in 2018 after four consecutive years of decline, but remained below 2015 levels. The 2018 return on average equity of 8.1 percent was well above the 5.5 percent mark in 2017, but below the average of nine percent for the past ten years.

Figure 36: P&C Sector Operating Ratios (%)

	2014	2015	2016	2017	2018
Pre-Tax Operating Margin	11.60%	10.39%	7.47%	3.42%	8.77%
Return on Average Equity (Capital & Surplus)	9.56%	8.47%	6.33%	5.50%	8.05%
Pre-Tax Operating Return on Average Equity	9.34%	8.49%	6.16%	2.74%	7.57%
Return on Average Assets	3.66%	3.24%	2.40%	2.10%	3.05%

Source: S&P Global

b) Condition

This section analyzes the financial condition of the P&C sector at the end of 2018, focusing on surplus, assets, and liquidity.

i. Surplus as Regards Policyholders

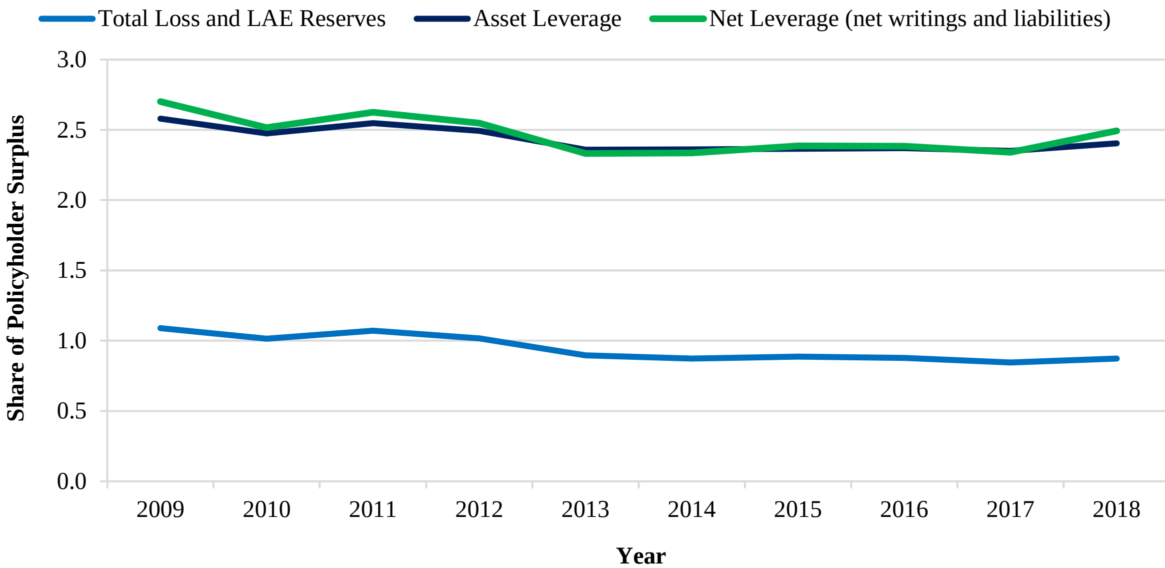
The robustness of the P&C sector's capital position is reflective of growth in the asset base and reduced stresses to the balance sheet.

Policyholder surplus for the P&C sector was $752.6 billion at year-end 2018, down from $765.4 billion at year-end 2017. Despite the almost two percent year-over-year decrease, surplus annual growth has averaged at over five percent during the last decade. Removing capital infusions in the form of surplus notes did not materially change the average annual growth rate in policyholder surplus for the last 10 years. Organic surplus growth for the P&C sector can mainly be attributed to positive earnings including net realized and unrealized capital gains, offset in part by stockholder dividends. Specifically, the P&C sector paid stockholder dividends of $32.1 billion and $29.4 billion in 2018 and 2017, respectively. As a share of prior year-end policyholder surplus, stockholder dividends have averaged 4.9 percent annually over the last decade, less than the L&H sector average due to the P&C sector's larger surplus base. With the exception of 2009, in the post-crisis period the P&C sector has generated capital year after year from net realized capital gains.[409] As a share of prior year-end policyholder surplus, net realized capital gains have averaged 1.4 percent annually post-crisis. After two consecutive years of considerable net unrealized capital gains, the P&C sector reported significant net unrealized capital losses of $45.4 billion in 2018. Because of the volatility in the financial markets at the end of 2018, net unrealized capital gains only contributed 1.8 percent to prior year-end policyholder surplus on average each year in the last decade, bringing the post-crisis annual average down from 2.6 percent in 2017.

[409] The P&C sector reported net realized capital losses of $7.8 billion in 2009.

As shown in Figure 37, and similar to observations for the L&H sector, leverage ratios for the P&C sector have been unwavering, enhancing the sector's financial capacity. Though they measure different exposures, the asset and net leverage ratios presented in Figure 37 had nearly converged to a single point before widening in 2018. The recent uptick in the two ratios was more material for the net leverage ratio, stemming from significant growth in net writings in 2018 compared to previous years while growth in policyholder surplus fell that same year.

Figure 37: Stable Leverage Ratio Improving Financial Flexibility of P&C Sector



Source: S&P Global

Balance sheet strength can be affected by the volatility and credit quality of the investment portfolio, reinsurance recoverables, and agents' balances. Reduced leverage on the balance sheet has generated greater financial flexibility, enabling the P&C sector to use its capital more efficiently in mitigating such potential risk exposures as investment, interest rate, and credit. Specifically, the P&C sector's asset leverage has remained steady for the last six years, ranging between 2.35 and 2.40, while averaging at 2.43 annually over the last ten years. The combined liabilities-to-equity ratio and the operating leverage ratio (together representing the net leverage ratio) was 2.49 at year-end 2018, rising from 2.34 at year-end 2017. Though the sector experienced an increase in the net leverage ratio in 2018, the upturn contributed to raising the annual post-crisis average only to 2.47 from 2.46 in 2017.

Liabilities were 1.7 times surplus at year-end 2018, not changing significantly since year-end 2010 and compared to 1.9 at year-end 2009.

Until 2018, reinsurance activity over the last decade has generally been stable, primarily characterized by positive year-over-year growth in cessions.[410] That trend reversed in 2018 when cessions decreased considerably by nearly 29 percent from the prior year. Cessions were

[410] Aside from 2018, in the last decade the P&C sector reported a drop in cessions only in 2010 (3.2 percent).

$60 billion and $84.1 billion in 2018 and 2017, respectively. The P&C sector was ceding premiums at an annual rate of 4.2 percent on average but with the significant drop in 2018, the post-crisis average declined to 0.9 percent on a yearly basis. The resulting increase in net writings boosted the sector's operating leverage to 0.82 at year-end 2018 from 0.73 at year-end 2017, and largely contributed to the rise in the net leverage ratio. On average, net premiums written have comprised about 0.76 times policyholder surplus each year post-crisis, indicating that the P&C sector has been able to cover the business being underwritten.

At year-end 2018, the ratio of loss and loss adjustment reserves to policyholder surplus was 0.87, rising from 0.85 at year-end 2017. Loss and loss adjustment reserves were $661.3 billion and $646.9 billion in 2018 and 2017, respectively. The ratio has averaged at a multiple of less than one annually over the last 10 years, demonstrating that the P&C sector in the aggregate has remained consistent in its estimation of reserves to cover potential liabilities arising from claims made on policies underwritten.

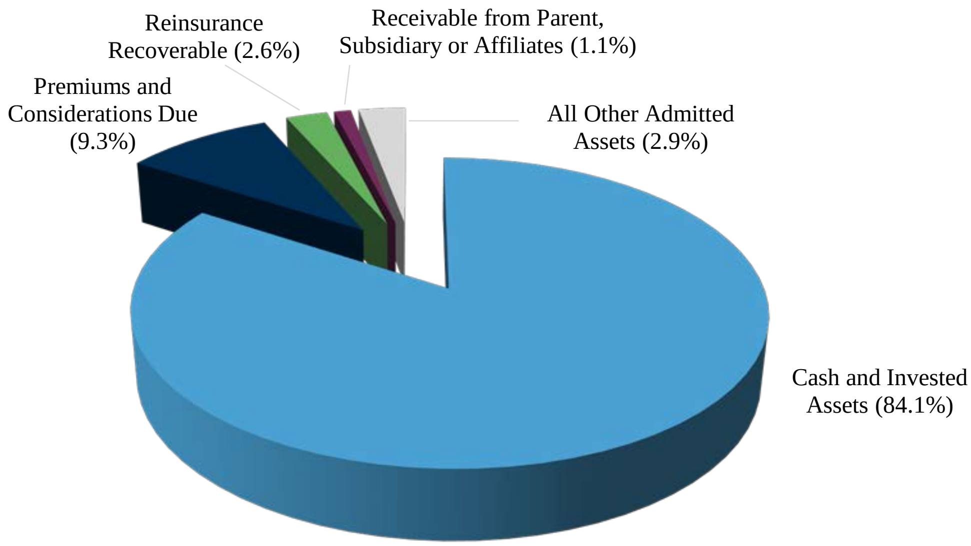
ii. Asset Base

Contributing to the soundness of the P&C sector's capital position has been the growth and composition of asset holdings. Total assets of $2.0 trillion as of year-end 2018, rising slightly from the previous year-end, have been growing at an annual rate of 3.4 percent on average over the last decade, helping the sector maintain a stable capital base relative to the risk exposure from its asset holdings. Policyholder surplus covered 38.3 percent of the sector's asset holdings exposed to risk[411] as of year-end 2018 compared to 39.3 percent and 38.5 percent as of the years ending 2017 and 2016, respectively, and in comparison to an annual average of 37.8 percent each year post-crisis.

The configuration of the sector's asset portfolio has remained virtually constant for the last decade, with the bulk of holdings allocated to cash and investments. Figure 38 illustrates the composition of the P&C sector's assets at year-end 2018, which largely mirrors the distribution of assets in previous years.

[411] Because the risk exposure related to cash and cash equivalents is negligible to the insurer, asset holdings exposed to risk refer to total assets less cash and cash equivalents.

Figure 38: 2018 Composition of Asset Portfolio for P&C Sector



Source: S&P Global

On average, cash and invested assets have accounted for nearly 85 percent of total assets each year over the last decade, while premiums and considerations due have averaged in excess of 8 percent annually.

The P&C sector has allocated more than 60 percent to bonds on average annually in recent years, as detailed in Figure 39, while common stock holdings have averaged in excess of 22 percent of the sector's investment portfolio.

Figure 39: Composition of Investment Portfolio for P&C Sector

	2014	2015	2016	2017	2018
Bonds (Long-Term)	61.5%	62.1%	61.3%	57.9%	60.3%
Preferred Stocks	1.0%	0.9%	0.7%	0.3%	0.3%
Common Stocks	21.5%	21.1%	21.7%	24.2%	23.0%
Mortgage Loans	0.7%	0.8%	0.9%	1.0%	1.2%
Real Estate	0.7%	0.8%	0.8%	0.8%	0.8%
Contract Loans	0.0%	0.0%	0.0%	0.0%	0.0%
Derivatives	0.0%	0.0%	0.0%	0.0%	0.0%
Cash & Short Term Investments	5.9%	5.8%	5.8%	6.9%	5.9%
Other Investments	8.7%	8.5%	8.7%	8.9%	8.5%
Total Cash & Invested Assets	**100%**	**100%**	**100%**	**100%**	**100%**

Source: S&P Global

This composition of investment holdings aligns with the risk management practices employed by the P&C sector to address both the shorter-term obligations of some P&C lines (such as auto liability) as well as longer-tailed liabilities (such as medical malpractice and workers' compensation). Annual growth in total bonds has been firm, averaging 2.1 percent in the last decade, whereas common stocks have grown by 8.4 percent on average. Total bonds, both short-term and long-term combined, were $1.1 trillion in 2018, not materially changing from the previous four years. Of the entire bond portfolio, more than 92 percent has consistently been comprised of long-term bonds in each of the last five years, while close to 71 percent of all bond holdings had durations ranging between one and ten years on average.

The P&C sector has been allocating an increasing share of its bond holdings to private placements over the last ten years. Private placements comprised 15.1 percent of the aggregate bond portfolio at year-end 2018, up from 13.2 percent at year-end 2017 and 10 percentage points higher than at year-end 2009. Despite the growth in privately-issued bond holdings, publicly-traded bonds still comprised nearly 90 percent of total bonds on average annually since year-end 2009. In addition to the shift between public and private bond holdings, the P&C sector showed a steady rise in the share of its investment portfolio allocated to equities, in particular for the years from 2011 through 2017. At year-end 2018, the sector reduced its exposures to equities with common stock investments of $388.9 billion accounting for 23 percent of cash and investments, decreasing from $409.5 billion and 24.2 percent at year-end 2017. Since year-end 2011 through 2018 year-end, bond holdings as a share of cash and investments declined by nearly seven percentage points, while common stock holdings rose by almost six. Figure 39 displays this trend between 2014 and 2018.

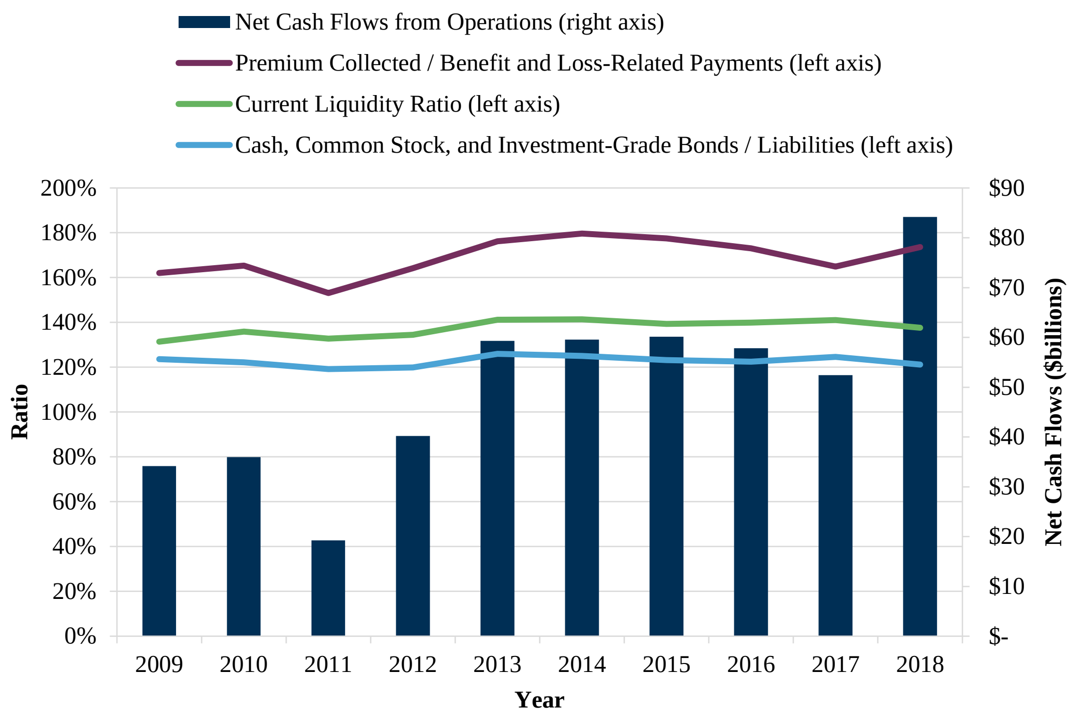
As the percentage of common stock investments dropped in 2018, the P&C sector raised its mortgage loan holdings. Though still a small percentage of total cash and invested assets, the value of mortgage loans has shown consistent year-over-year growth since 2010. Total mortgage loans were $19.9 billion as of year-end 2018, accounting for 1.2 percent of cash and invested assets but 4.7 times the value of mortgage holdings of $4.2 billion at year-end 2010.

As with the L&H sector, the P&C sector has been demonstrating a gradual repositioning of its investment holdings, which can be attributed to both market performance and the search for yield. The effects of a prolonged low interest rate environment have caused insurers, in their quest for desired yield, to move an increased percentage of investment holdings towards alternative investments and away from more traditional bond and equity holdings.

iii. Liquidity

The P&C sector has managed its liquidity effectively in meeting the day-to-day needs of its business operations, thereby maintaining a sound liquidity position over the past decade. With benefits and loss-related payments consuming significantly less of total net premiums collected annually, the sector has reported positive net cash flows from operations in each of the last 10 years. Recent net cash flows from operations were $84.4 billion and $52.4 billion in 2018 and 2017, respectively. On a cash basis, net premium receipts have averaged an annual growth rate of 3.4 percent, covering benefit and loss-related payments by 1.7 times on average each year since 2009. As Figure 40 illustrates, premiums collected, net of reinsurance, exceeded benefit and loss-related payments by 74 percent and 65 percent at years ending 2018 and 2017, respectively. Moreover, the current liquidity ratio[412] hit a high of 141.4 percent in 2014 and has remained within a close range of 137 and 141 percent for the last six years, improving from 131 percent at year-end 2009.[413]

Figure 40: P&C Sector Cash Flows from Operations



Source: S&P Global

Positive net cash flows from operations have contributed to an average annual growth rate of 3.5 percent in cash and invested assets over the last ten years, expanding the P&C sector's financial flexibility. Despite the negative growth in cash and short-term investments of more than 12 percent in 2018, pulling down the average annual growth rate of this asset class to 1.2 percent for the decade, liquid assets (the numerator of the current liquidity ratio) have represented at least 2.2 times the level of aggregate policyholder surplus each year since 2009.

Certain concentrations of risk within the sector's investment portfolio have evolved since year-end 2009, likely indicative of the P&C sector's response to a sustained low interest rate

[412] Current liquidity is used to determine the amount of liabilities that can be covered with liquid assets. It is calculated as follows: the numerator equals net admitted cash and investments less the sum of net admitted first lien real estate loans, net admitted real estate loans less first liens, net admitted occupied properties, net admitted income generating properties, net admitted properties held for sale, affiliated long-term bonds, and affiliated preferred stock; the denominator equals total liabilities less ceded reinsurance premium payable.

[413] This liquidity analysis is based on cash inflows and outflows—premiums that were collected as well as benefit and loss-related payments made during the year. The combined ratio referenced in the income statement discussion refers to premiums earned and written, and captures dividends and other expenses. These include commissions, salaries and benefits, administrative expenses, and taxes, in addition to incurred loss and loss adjustment expenses.

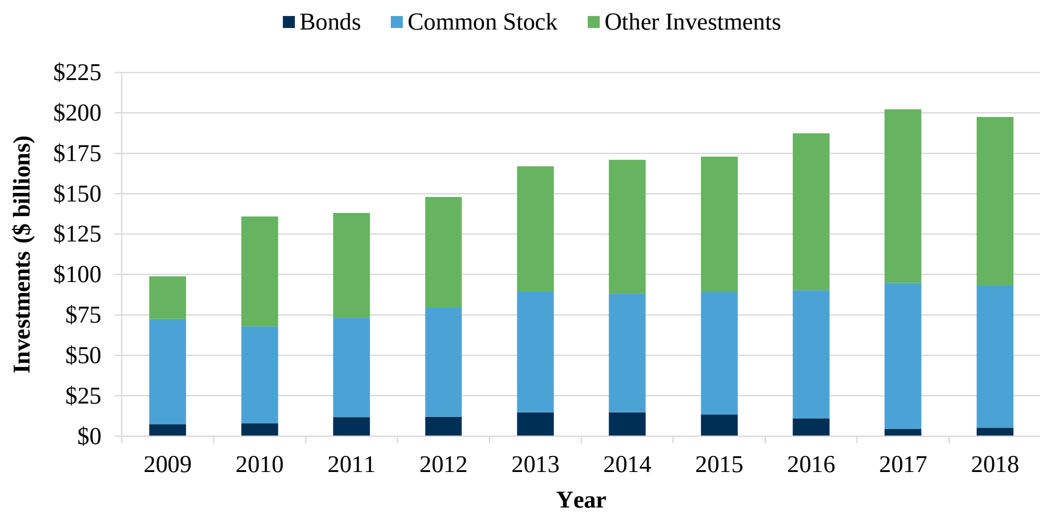
environment in the post-crisis period and the search for yield. Within the bond portfolio, private-placement bonds have been taking up a larger share of aggregate surplus over the last ten years. The percentage stood at a high of 21.6 at year-end 2018, more than doubling from 9.2 percent at year-end 2009. Annual growth in private placements averaged 16.8 percent over the decade, whereas annual growth in publicly-traded bonds averaged 0.6 percent.

Nearly 30 percent of the P&C sector's bond portfolio has consistently been comprised of securities issued by U.S. federal, state, and municipal governments. More than two-thirds of bond holdings have consisted of some form of revenue bond investments, including special revenue and industrial revenue bonds. While revenue bonds can often be issued by local or municipal governments, the debt service is typically paid by a private company. Thus, the credit risk exposure for these types of bond holdings is heightened for the bondholder, i.e., repayment becomes a risk exposure to the insurer if the entity responsible for repayment becomes distressed. At year-end 2018, revenue bond holdings were $744.4 billion, up from $720.9 billion at year-end 2017. Revenue bond investments by the P&C sector grew at a yearly rate of 2.6 percent on average in the last decade, while the average annual growth rate of government bond holdings turned negative.

In addition, there has been a continued rise in the P&C sector's holdings of structured securities. Total structured securities held by the P&C sector were $169.4 billion in 2018, up from $150.1 and $144.4 billion in 2017 and 2016, respectively. Structured holdings in 2018 reached a decade high, even surpassing levels in 2008 of $152.2 billion. Of the structured securities portfolio, mortgage-backed securities (MBS) issued by the Federal National Mortgage Association (Fannie Mae) and the Federal Home Loan Mortgage Corporation (Freddie Mac) have largely dominated over the past decade, averaging a third of the portfolio each year, while Government National Mortgage Association (Ginnie Mae) MBS have comprised about seven percent on average. Collateralized mortgage obligations and real estate mortgage investment conduits issued by Fannie Mae, Freddie Mac, and Ginnie Mae together averaged 23 percent of structured holdings each year. In total, pass-thru securities issued by the government-sponsored enterprises and Ginnie Mae accounted for nearly 63 percent on average of the P&C sector's structured portfolio on an annual basis over the last ten years. Fannie Mae and Freddie Mac are both under government conservatorship and operate in accordance with written capital support agreements with Treasury. As such, Fannie Mae and Freddie Mac MBS are not explicitly guaranteed by the federal government. By contrast, there is a full faith and credit guarantee of the U.S. government on Ginnie Mae MBS.

Between 2009 and 2017, affiliated holdings had been on an upward trajectory, exposing the sector to another of source of liquidity risk. Declining in 2018, affiliated investments were $195.4 billion compared to $202.2 billion in 2017. Whether the decrease in 2018 was an anomaly or the beginning of another trend is yet to be determined. Affiliated cash and investments represented 11.5 percent of total cash and invested assets and 25.8 percent of policyholder surplus at year-end 2018, down from 12 percent and 26.4 percent at year-end 2017 but up from 7.8 percent of cash and investments and 19.1 percent of policyholder surplus at year-end 2009. Figure 41 shows the growth and shift in the composition of affiliated investments over the past decade.

Figure 41: P&C Sector's Affiliated Investments



Source: S&P Global

Other types of investments have come to dominate affiliated holdings, doubling their share of total affiliated investments from year-end 2009. Affiliated other investments in Figure 41 captures affiliated preferred stock, mortgage loans, and cash and invested assets in addition to other types of affiliated investments.[414] In the last four years, affiliated preferred stock, mortgage loans, and cash and invested assets have comprised less than two percent of affiliated other investments.

Several factors mitigate the P&C sector's vulnerability to these risk exposures in the event of worsening market conditions. First, when observing financial trends over the decade, it becomes apparent that high quality bonds continue to make up the bulk of the sector's portfolio of fixed-income securities, including MBS. Investment-grade bonds have averaged 96 percent of the P&C sector's bond portfolio and about 61 percent of cash and invested assets annually over the last ten years. Second, the ratio of investment-grade bonds to policyholder surplus has been at a 1.4 multiple on average each year, enhancing the sector's quality of capital. Third, bond holdings at or near default have accounted for a declining share of surplus since 2012; at year-end 2018, the share stood at 0.54 percent. Fourth, unaffiliated bond holdings have accounted for close to 70 percent of the unaffiliated investment portfolio on average each year, while unaffiliated common stocks have averaged 17 percent annually. Finally, unaffiliated cash and invested assets have been at least twice the level of policyholder surplus each year since 2009. All of these factors have contributed to a healthy capital base for the P&C sector.

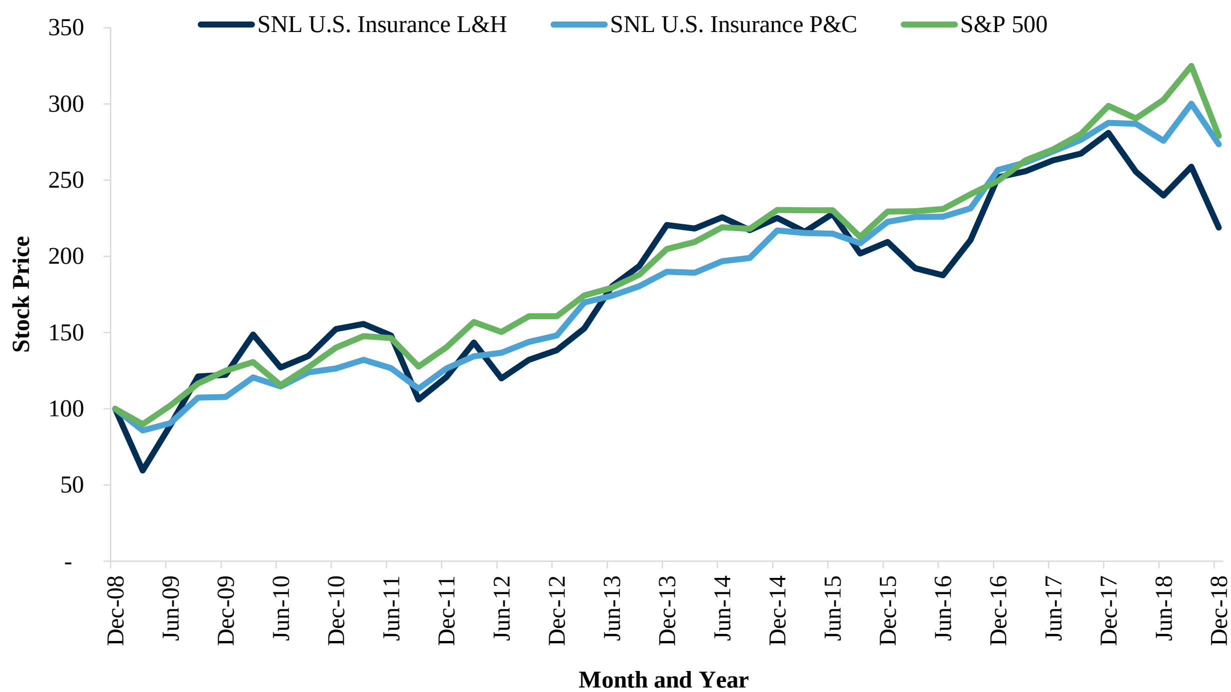
[414] Affiliated other investments include, but are not limited to, surplus notes, limited partnerships, joint ventures, hedge funds, private equity funds, and direct investments.

4. Market Performance

Stock price movements are indicators of investors' perceptions about the recent financial results and future financial prospects of a firm, an industry sector, or in a broader context, the general economy. The discussion that follows considers the price performance of stock indices for the L&H and P&C sectors, as compared to the performance of the Standard and Poor's 500 Index (S&P 500).

Over the ten-year period from December 31, 2008 through the end of 2018, the P&C sector performed essentially in-line with the S&P 500, as shown in Figure 42. On the other hand, the L&H sector stock index underperformed the S&P 500 during this period. The P&C sector generally slightly underperformed, and at times tracked, the broad market, since the financial crisis. The L&H sector's performance has been more volatile, both underperforming and outperforming the S&P 500 since the financial crisis; however, the sector has underperformed since the end of 2015. Since the end of 2008, the P&C stock index gained 173 percent and the L&H stock index increased 119 percent; over the same period, the S&P 500 gained 179 percent. In the short-term, for 2018 the P&C stock index slightly outperformed the S&P 500, declining by five percent versus a nearly seven percent decline for the S&P 500, and the L&H stock index significantly underperformed the S&P 500, losing 22 percent (see Figure 42).

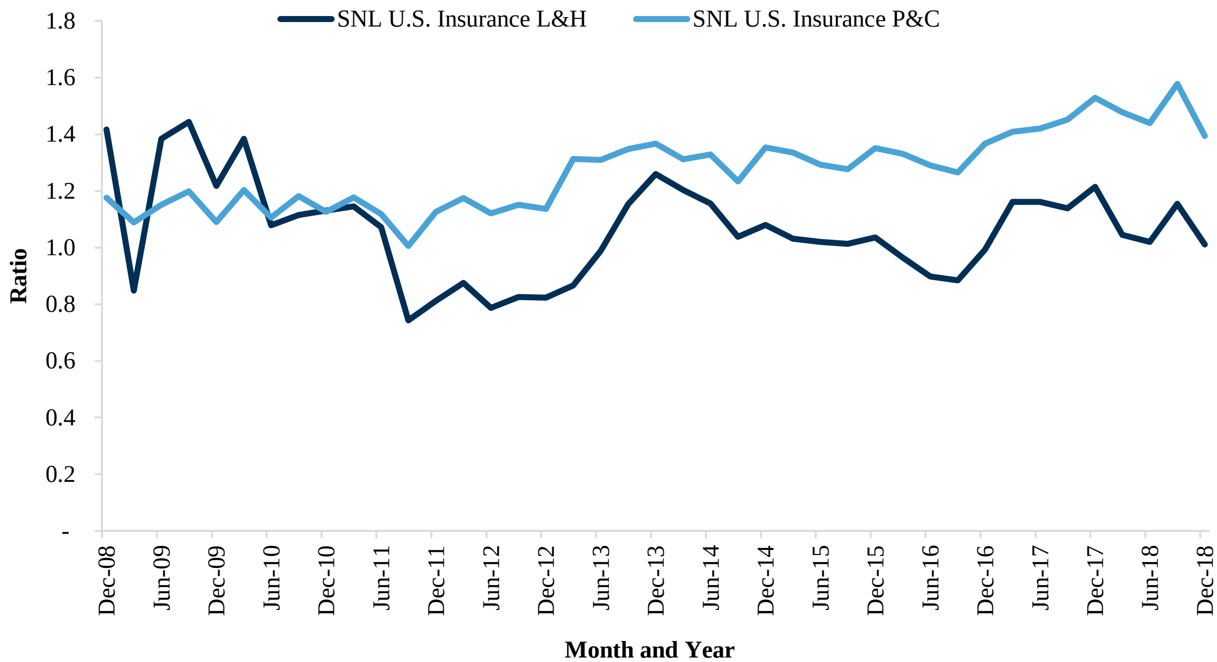
Figure 42: Insurance Sector Stock Price vs. S&P 500



Source: S&P Global

The price-to-book value multiple, which compares on a per share basis the market value of a firm to its book value (i.e., reported equity on its balance sheet), is a popular metric by which to measure valuation. If a share of an insurer's stock is selling for less than its book value per share, the market is valuing the firm at less than its assets minus its liabilities (net worth); the opposite is true if the stock is trading at a premium to its book value. Figure 43 compares L&H and P&C sector price-to-book value ratios from year-end 2008 through year-end 2018. After a significant increase over 2017, the premium of L&H sector stocks to book value reversed in 2018, settling at a multiple of 1.01 times book value at the end of the year, down meaningfully from the 1.21 multiple at the end of 2017. P&C sector stocks likewise experienced a decline in the market premium over book value increase, ending 2018 at a multiple of 1.39 times book value compared to a multiple of 1.53 times book value at the end of 2017.

Figure 43: Insurer Price/Book Value Ratios



Source: S&P Global

Box 2: Collateralized Loan Obligations in the Insurance Industry

Collateralized loan obligations (CLO) are structured securities that are collateralized primarily with below-investment-grade business loans, called leveraged loans.[415] In this sense, CLOs are similar to collateralized debt obligations (CDOs) and private-label MBS that played a role in the financial crisis.[416] By the first quarter of 2019, the outstanding U.S. CLOs market was over $605 billion.[417]

Investors in the CLO market include investment funds, insurers, pension funds, hedge funds, and banks, with investor involvement varying by CLO tranche.[418] Banks generally invest primarily in the highest credit rate tranches. Hedge funds generally focus on the higher yielding mezzanine and equity security investments. Insurers invest, to some degree, in a variety of credit qualities, including investment grade, mezzanine, and equity securities. In all, U.S. insurers hold an estimated $122 billion in CLOs, the majority of which were of high credit quality, with approximately 80 percent of the assets rated single-A or higher.[419] According to the NAIC, P&C insurers held approximately 20 percent of these investments and life insurers held approximately 80 percent.[420] Additionally, the NAIC noted that "despite a steady increase in exposure," CLOs "continue to represent a small proportion of total assets [of insurers], at nearly 2% of total cash

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415 *See, e.g.*, NAIC, *U.S. Insurance Industry's Exposure to Collateralized Loan Obligations as of Year-End 2018* (2019), 1, https://www.naic.org/capital_markets_archive/special_report_190618.pdf. *See also* Federal Reserve, "Who Owns U.S. CLO Securities?" *FEDS Notes*, July 19, 2019, https://www.federalreserve.gov/econres/notes/feds-notes/who-owns-us-clo-securities-20190719.htm. The use of leveraged loans has grown rapidly since the financial crisis, with an increasing share of such loans securitized into CLOs. *See, e.g.*, Federal Reserve, "Who Owns U.S. CLO Securities?" *See also* "Leveraged Loan Primer," S&P Global, https://www.spglobal.com/marketintelligence/en/pages/toc-primer/lcd-primer. The Bank of England reports that gross issuance of leveraged loans reached pre-crisis levels in 2018, but subsequently slowed; it estimates that there are $3.2 trillion in leveraged loans outstanding globally. Bank of England, *Financial Stability Report* (2019), 24, https://www.bankofengland.co.uk/-/media/boe/files/financial-stability-report/2019/july-2019.pdf. *See also* SIFMA, *Leverage Lending FAQ & Fact Sheet* (February 2019), https://www.sifma.org/wp-content/uploads/2019/03/Leverage-Lending-FAQ.pdf.

416 Like CDOs, CLOs issue several classes of securities representing different claims on the CLO that are structured into investment grade notes, mezzanine grade debt securities, and equity. Unlike CDOs, they do not rely on financial guarantees from monoline insurance companies or credit default swaps.

417 "U.S. ABS Issuance and Outstanding," SIFMA, last updated September 6, 2019, https://www.sifma.org/resources/research/us-abs-issuance-and-outstanding/.

418 *See, e.g.*, Federal Reserve, "Who Owns U.S. CLO Securities?" A CLO includes the issuance of tranches of securities, including several classes of senior investment grade securities rated AAA, AA, A or BBB; one or more classes of mezzanine debt securities rated BB or B; and equity securities (representing ownership and control of the CLO) which absorb the first loss from default on the underlying loan pool. Guggenheim, *Understanding Collateralized Loan Obligations* (2019), 4, https://www.guggenheiminvestments.com/perspectives/portfolio-strategy/collateralized-loan-obligations-clo.

419 NAIC, *U.S. Insurance Industry's Exposure to Collateralized Loan Obligations as of Year-End 2018*, 1, 7.

420 NAIC, *U.S. Insurance Industry's Exposure to Collateralized Loan Obligations as of Year-End 2018*, 1.

and invested assets as of year-end 2018."[421] As a proportion of capital and surplus in the insurance sector, CLOs constitute approximately 10 percent.[422]

Financial market supervisors and other authorities have recently highlighted issues regarding the CLO market. In its 2018 Annual Report, the Council noted "increasing demand for securitized products, such as collateralized loan obligations . . . .in the corporate debt market."[423] Additionally, in a letter to the G-20, the FSB chair identified "riskier credit instruments," including leveraged loans, directly and through CLOs, as an emerging vulnerability.[424] Supervisors have also pointed to risky features in the CLOs themselves.[425] Notably, new CLO innovations—such as combo CLOs and enhanced CLOs—produce riskier assets.[426] NAIC staff has proposed rule changes to "ratchet up oversight" on combo CLOs by prohibiting the use of external ratings to determine statutory capital for principal-protected notes, and require them to be evaluated in-house by regulators.[427]

B. Capital Markets Activity

The U.S. domestic insurance industry continued to access the equity market for new capital, mostly through those first nine months. During the year, 18 insurance-related public equity

421 NAIC, *U.S. Insurance Industry's Exposure to Collateralized Loan Obligations as of Year-End 2018*, 1.

422 *See* NAIC, *U.S. Insurance Industry's Exposure to Collateralized Loan Obligations as of Year-End 2018* (noting U.S. insurers hold $122 billion in CLOs); Section VI.A.1 of this Report (noting that, in the aggregate, U.S. insurer capital and surplus is $1.1 trillion).

423 Council, *2018 Annual Report* (2019), 27, https://home.treasury.gov/system/files/261/FSOC2018AnnualReport.pdf.

424 Letter from Randal K. Quarles, FSB, to G20 Leaders (June 24, 2019), https://www.fsb.org/wp-content/uploads/P250619-1.pdf.

425 EIOPA, *Financial Stability Report* (2019), 52-54, https://eiopa.europa.eu/Publications/Reports/EIOPA_FSR_June2019.pdf (identifying risk factors including credit risk and potential loss to cash flow and valuation of CLO investments).

426 Combo CLOs are notes that are comprised of highly rated CLO tranches combined with equity shares. Enhanced CLOs—while a small share of the CLO market—are versions of leveraged loan-backed securities that have covenants allowing the underlying assets in the CLO capital structure to have a much higher share of very low rated loans. *See, e.g.*, SEC Admin. Proceeding No. 3-18689 (Order Instituting Cease and Desist Proceedings) (August 28, 2018), https://www.sec.gov/litigation/admin/2018/34-83966.pdf (addressing Moody's failure to properly factor equity risk into its method for assigning credit ratings to combo CLOs); Sam Goldfarb, "Wall Street's Answer to Risks in Loan Market: Bundle Lower-Rated Loans," *Wall Street Journal*, July 16, 2019, https://www.wsj.com/articles/wall-streets-answer-to-risks-in-loan-market-bundle-lower-rated-loans-11563269403.

427 "Insurance Regulators Mull Crackdown on Ratings of CLO 'Combo' Notes," *S&P Global Market Intelligence*, July 29, 2019, https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/leveraged-loan-news/insurance-regulators-mull-crackdown-on-ratings-of-clo-combo-notes.

offerings were completed, with an aggregate value of $11.5 billion.[428] This level of activity was higher in terms of both the number of deals and the aggregate value compared to 2017, when there were 14 offerings valued at $4.4 billion. Of the offerings in 2018, only two transactions, valued at $3.3 billion, were initial public offerings (IPOs), marking a significant increase in aggregate value from the four IPOs valued at $137 million in 2017. The largest single public equity offering by an insurer in 2018 was the $3.2 billion IPO by AXA Equitable Holdings, Inc.; the company also conducted a follow-on offering of $1.2 billion in common stock later in the year. Another large equity market transaction in 2018, although not an IPO, was Centene Corp.'s sale of $2.9 billion of common stock.

Debt markets continued to be the preferred source of additional capital for insurers in 2018, despite a gradual rise in interest rates over the first eleven months of the year, followed by a sharp decline late in the fourth quarter. During the year, U.S. insurers raised an aggregate $72.9 billion in 118 separate debt offerings.[429] Debt issuance increased from the $54.3 billion raised in 116 offerings in 2017. Approximately 44 percent of 2018 debt sales were transacted in public markets, with the remaining 55 percent coming from private placements. Cigna Corporation was the largest issuer of debt in 2018, raising $20 billion (27 percent of the industry total) through ten separate offerings. The second-largest issuer of debt in 2018 was MetLife and its consolidated subsidiaries, which raised $10.3 billion. In the aggregate, the funds raised by the top five issuers of debt accounted for 63 percent of the 2018 industry total. The largest single offering during 2018 was a $7.5 billion issue sold by Metropolitan Life Insurance Company (a subsidiary of MetLife, Inc.).

1. Mergers & Acquisitions of U.S. Insurers

In 2018, there were 90 merger and acquisition (M&A) transactions announced involving U.S. insurers, with a total value of $27.6 billion.[430] The number of deals was little changed from the 93 transactions in 2017, but the aggregate value of the 2018 deals fell well short of the $87.1 billion in 2017, which included the $70 billion acquisition of health insurer Aetna Inc. by CVS Health Corporation, announced late in 2017. The aggregate value of 2018 M&A activity was more in line with other recent historical figures. The largest transaction in 2018 was the January announcement of the acquisition of Validus Holdings, Inc. by American International Group, a deal valued at approximately $5.5 billion. The second-largest deal announced in 2018 was the acquisition of Liberty Life Assurance Company of Boston by an investor group, valued at $2.8 billion. Other notable deals announced in 2018 included the $2.6 billion acquisition of Aspen Insurance Holdings Ltd. by Apollo Global Management, LLC, and the $2.5 billion acquisition of Meridian Health Plan of Michigan by WellCare Health Plans, Inc.

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[428] All data in this section with respect to capital markets and mergers and acquisitions are sourced from S&P Global, as collected and calculated by FIO. The data includes Bermuda-based holding companies for which primary insurance underwriting subsidiaries are domiciled in the United States.

[429] Foreign currency-denominated transactions converted to U.S. dollars by S&P Global.

[430] Transactions were announced between January 1, 2018 and December 31, 2018, and were either completed during the year or remained pending at the end of 2018. S&P Global did not report transaction values for all deals.

2. Alternative Risk Transfer Insurance Products

The U.S. insurance market includes a small but innovative segment that employs alternative risk transfer (ART) financial instruments in order to augment risk shifting in insurance markets. The most widely known ART instrument is the catastrophe bond, but the market also includes ILS, collateralized reinsurance, industry loss warranties (ILWs), reinsurance sidecars, longevity swaps, and catastrophe futures.

There were two noteworthy changes to the ART market over the past year. First, the pace of ART growth has slowed. Volume leveled off over the past few quarters and may possibly decrease in 2019 overall if the trends in the first half of this year continue. One observer attributed the decrease in the first half of 2019 to loss payments and redemption requests.[431] Fewer issuances and lower outstanding amounts also reflect a slower inflow of new capital in conjunction with existing collateral being tied up in settling large losses from 2017 and 2018, including California wildfires and hurricanes and related flooding in the Carolinas, Florida, and Puerto Rico.[432]

Second, the composition of the perils handled through the ART market continues to evolve. Historically, ILS transactions focused on natural catastrophe perils from wind, flood, and earthquake. The past three years, however, have seen a sharp rise in a relatively new asset class: the reinsurance of mortgage credit risk.[433] Additional ART coverage introduced over the past decade includes longevity risk, credit risk (guarantees for mortgages and municipal debt securities), and operational risk. Moreover, the range of participants in the markets has broadened and now includes, among others, the federal government with the NFIP catastrophe bonds (discussed in Section III.A.2.d of this Report). One 2019 catastrophe bond involves both a new peril and a new participant. In February 2019, Pool Reinsurance Co. Ltd. (Pool Re), the government-backed mutual terrorism reinsurance facility in the United Kingdom, brought the first-ever terrorism risk catastrophe bond to market as part of its general retrocessional program for its terrorism risk exposures. In addition to being the first terrorism risk catastrophe bond, the transaction is also the first transaction accomplished under the United Kingdom's 2017 Risk Transformation Regulations. [434]

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[431] Aon Benfield, *Reinsurance Market Outlook: June and July 2019* (2019), 1, http://thoughtleadership.aonbenfield.com//Documents/20190701_reinsurance_market_outlook.pdf.

[432] *See* Aon Benfield, *Reinsurance Market Outlook: June and July 2019*, 4. *See also* Guy Carpenter, "Reinsurance Rate Movement Limited at January 1 Despite Uncertainty over Pricing Adequacy and Available Capital," *GCCapitalIdeas.com*, January 14, 2019. https://www.gccapitalideas.com/2019/01/14/reinsurance-rate-movement-limited-at-january-1-despite-uncertainty-over-pricing-adequacy-and-available-capital/.

[433] In the first half of 2019, mortgage ILS deals accounted for almost half of the $3.675 billion issuance total. Steve Evans, "Cat Bond and Related ILS Risk Capital Outstanding Hits $40B for First Time," *Artemis*, August 20, 2019. https://www.artemis.bm/news/cat-bond-related-ils-risk-capital-outstanding-hits-40bn-for-first-time/.

[434] "Pool Re Sponsors First Terrorism Risk Catastrophe Bond, Baltic PCC," *Artemis*, January 14, 2019, https://www.artemis.bm/news/pool-re-sponsors-first-terrorism-risk-catastrophe-bond-baltic-pcc/; Matthew Lerner,

By using the capital and derivatives markets to attract investors from outside the insurance industry, ART markets increase the capacity for reinsurance and retrocession, and thereby increase the U.S. insurance industry's ability to supply insurance.[435]

The current composition of the ART market reflects not only that ILS is a large share of the market, but also that the ILS segment is continuing its rapid growth. Collateralized reinsurance remains the largest—and still growing—segment of the ART market: collateralized reinsurance grew eight percent between September 2017 and September 2018.[436] ILWs are not the largest segment of the ART market, but continue to serve a key function in the price discovery process.[437]

C. International Insurance Marketplace Overview

The United States remained the world's largest single-country insurance market in 2018, maintaining a 28 percent market share of global direct premiums written (see Figure 44).[438] This market share was flat compared to 2017, but represents a one percentage point increase over 2013. When viewed as a single market, the EU's share of global direct premiums written (27 percent), including the United Kingdom, is closely comparable to the market share of the United States. China remained the second-largest single-country insurance market, with 11 percent of global direct premiums written. Globally, direct premiums written increased only 1.5 percent in real terms (adjusted for inflation) in 2018, held back by slowing in the life sector.[439] Growth in non-life premiums of 3.0 percent outpaced the 0.2 percent increase in life premiums.[440] Both overall and sectoral premiums growth trailed the 3.2 percent gain in global gross domestic product in 2018.[441] It is notable, though, that 2018 world direct premiums written surpassed the $5 trillion mark for the first time.

"Terrorism Reinsurer Makes First Cat Bond Purchase," *Business Insurance*, February 26, 2019, https://www.businessinsurance.com/article/20190226/NEWS06/912326918?template=printart.

[435] FIO, *2018 Annual Report*, 98.

[436] Aon Benfield, *Insurance Linked Securities: Alternative Capital Fortifies Its Position* (2018), 18, http://thoughtleadership.aonbenfield.com/Documents/20180905-securities-ils-annual-report.pdf. For more information on collateralized reinsurance, *see* FIO, *2018 Annual Report*, 100-101.

[437] For more on ILWs, *see* FIO, *2018 Annual Report*, 101.

[438] Swiss Re sigma, *World Insurance: The Great Pivot East Continues* (2019), https://www.swissre.com/institute/research/sigma-research/sigma-2019-03.html. Swiss Re sigma examines insurance and macroeconomic data from 147 countries sourced through Swiss Re Institute. Growth rates are presented in real terms, i.e., adjusted for inflation as measured by local consumer price indices. Swiss Re sigma separates the insurance industry into "life" and "non-life" sectors according to standard EU and OECD conventions; under these conventions, the "non-life" sector includes health insurance.

[439] *See* Swiss Re sigma, *World Insurance*, 1.

[440] Swiss Re sigma, *World Insurance*, 1-2.

[441] Swiss Re sigma, *World Insurance*, 1.

Consistent with the past several years, emerging markets exhibited a considerably greater rate of premium growth than advanced markets, in total and in both the life and non-life sectors. The modest growth in global life premiums was driven mainly by a 2.0 percent drop in life premiums in emerging economies, and less than 1 percent growth in advanced economies. The figures for non-life premiums were considerably stronger, with advanced economies recording non-life premiums growth of 1.9 percent and emerging economies recording non-life premiums growth of 7.1 percent.[442]

Figure 44: Gross Premiums Written and Market Share by Country, 2013 vs. 2018

2013 Rank	2018 Rank	Country	2013 Premium Volume ($ millions)	2013 World Market Share (%)	2018 Premium Volume ($ millions)	2018 World Market Share (%)	Change in World Market Share (%)
1	1	United States	1,259,255	27.13%	1,469,375	28.29%	4.28%
4	2	PR China	277,965	5.99%	574,877	11.07%	84.82%
2	3	Japan	531,506	11.45%	440,648	8.49%	-25.91%
3	4	United Kingdom	329,643	7.10%	336,510	6.48%	-8.77%
5	5	France	254,754	5.49%	257,963	4.97%	-9.51%
6	6	Germany	247,162	5.33%	241,485	4.65%	-12.69%
8	7	South Korea	145,427	3.13%	179,024	3.45%	10.01%
7	8	Italy	168,554	3.63%	170,273	3.28%	-9.72%
9	9	Canada	125,344	2.70%	127,903	2.46%	-8.81%
11	10	Taiwan	90,977	1.96%	121,908	2.35%	19.75%
15	11	India	65,576	1.41%	99,838	1.92%	36.06%
10	12	Netherlands	101,140	2.18%	84,348	1.62%	-25.47%
13	13	Australia	78,309	1.69%	79,098	1.52%	-9.73%
14	14	Spain	72,510	1.56%	74,062	1.43%	-8.72%
18	15	Ireland	55,780	1.20%	73,162	1.41%	17.21%
12	16	Brazil	88,931	1.92%	72,840	1.40%	-26.80%
21	17	Hong Kong	36,075	0.78%	65,912	1.27%	63.28%
16	18	Switzerland	62,597	1.35%	59,384	1.14%	-15.22%
17	19	South Africa	54,121	1.17%	48,269	0.93%	-20.30%
20	20	Belgium	39,008	0.84%	37,253	0.72%	-14.66%
		World	4,640,941		5,193,225		

Source: Swiss Re sigma, *World Insurance*

D. Domestic Insurance Market Outlook

Full year 2019 insurance industry results will be reviewed by FIO in next year's *Annual Report on the Insurance Industry*. Based on financial results reported by insurers through the first half of 2019, the outlook for the U.S. insurance industry appears to be an extension of the trends

[442] Swiss Re sigma, *World Insurance*, 1-2. Swiss Re sigma's country classifications of "advanced" and "emerging" generally follows the International Monetary Fund's classification system.

observed in 2018. At the end of the first quarter 2019, both the L&H and P&C sectors reported growth in surplus, positive earnings, and stable liquidity coverage for on-balance obligations.[443]

Recent quantitative easing actions either taken or announced by monetary authorities around the world may have a heightened effect on the financial position of insurers in 2019 compared to 2018. The Federal Reserve lowered its benchmark rate by 25 basis points in July 2019 for the first time in a decade to insure against a downturn, while the European Central Bank has indicated that it may resurrect its bond-buying program. The International Monetary Fund forecasts global growth at 3.2 percent in 2019, with downside risks that include technology and trade tensions that will slow investment.[444] Economic uncertainty has contributed to an inverted yield curve in the United States, which from past experience has preceded the onset of an economic slowdown,[445] and has factored into a slide of interest rates into negative territory for overnight deposits and 30-year and 50-year bonds in Europe.

With the current monetary policy in the United States, insurers are likely to continue to experience tight interest margins in 2019. For L&H insurers, a low interest rate environment will be challenging as their business lines are typically of longer duration than available assets, compelling them to reinvest in lower-yielding assets, exacerbating the earnings spread compression and making it increasingly difficult to match their asset and liability cash flows to meet liquidity demands. In search of yield, both L&H and P&C will continue to revamp their investment portfolios or diversify into asset classes outside of stocks and bonds. Though still comprising a relatively small share of cash and investment assets, CLOs have been on the rise for both sectors.[446] While the majority of insurers' CLO holdings are of high credit quality, equivalent to an S&P rating of A or higher, those ratings may deteriorate in an economic downturn, potentially resulting in considerable investment losses.

On the other hand, surrenders reached a decade high in 2018. A pause in monetary tightening could mitigate disintermediation risk, as policyholders could be less motivated to pursue greater yield elsewhere.

Bond markets are exhibiting the beginnings of widening debt spreads. Financing costs currently remain low, but if spreads were to expand due to market concerns about a potential global slowdown, insurers and other firms will find it costlier to refinance their debt, reducing their financial flexibility and potentially exposing them to rating downgrades. Moreover, if spreads were to widen considerably, finding highly rated bond investments will become challenging for

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[443] S&P Global.

[444] The International Monetary Fund, *World Economic Outlook, July 2019* (2019), https://www.imf.org/en/Publications/WEO/Issues/2019/07/18/WEOupdateJuly2019.

[445] Although an inverted yield curve has preceded almost every economic recession in the United States since the World War II, there has been one occasion when it occurred and a recession did not follow — in the mid-1960s.

[446] NAIC, "U.S. Insurance Industry's Exposure to Collateralized Loan Obligations as of Year-End 2018." For more information on CLO, *see* Box 2 in this Report.

insurers. Against that backdrop, insurers would likely have to seek out other investment avenues that may include illiquid, alternative assets, such as infrastructure finance, private equity, and private placements in order to support their liabilities.[447] The resulting increased credit and liquidity risk exposures will stress insurers' financial profile.

[447] For the L&H sector, private placements made up 33.6 percent of total bonds and represented a 2.6 multiple of capital and surplus at year-end 2018, up from 31.3 percent of bonds and 2.4 times capital and surplus at year-end 2017. For the P&C sector, private placements accounted for 15.1 percent of total bonds and made up 21.6 percent of policyholder surplus at year-end 2018 compared to 13.2 percent of bond holdings and 18.2 percent of policyholder surplus at year-end 2017. *See* S&P Global.