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

SEPTEMBER 2017

Table of Contents

Glossary

ACRSM	....	Advisory Committee on Risk-Sharing Mechanisms
A&H	....	Accident and Health
B3i	....	Blockchain Insurance Initiative
BICE	....	DOL Best Interest Contract Exemption
CFIUS	....	Committee on Foreign Investment in the United States
CIPR	....	NAIC Center for Insurance Policy and Research
ComFrame	....	IAIS Common Framework for the Supervision of IAIGs
CSO	....	Commissioners' Standard Ordinary Table
Council	....	Financial Stability Oversight Council
CPMI	....	Committee on Payments and Marketing Infrastructure
DHS	....	U.S. Department of Homeland Security
Dodd-Frank Act	....	Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010
DOJ	....	U.S. Department of Justice
DOL	....	U.S. Department of Labor
EIOPA	....	European Insurance and Occupational Pensions Authority
ERISA	....	Employee Retirement Income Security Act of 1974
EU	....	European Union
FACI	....	Federal Advisory Committee on Insurance
FATF	....	Financial Action Task Force
FCTF	....	IAIS Financial Crime Task Force
FDIC	....	Federal Deposit Insurance Corporation
Federal Reserve	....	Board of Governors of the Federal Reserve System
FEMA	....	Federal Emergency Management Agency
FIO	....	Federal Insurance Office
FSAP	....	Financial Sector Assessment Program
FSB	....	Financial Stability Board
GAAP	....	Generally Accepted Accounting Principles
GDP	....	Gross Domestic Product
G-SIB	....	Global Systemically Important Bank

G-SII	....	Global Systemically Important Insurer
HHS	....	U.S. Department of Health and Human Services
IAIG	....	Internationally Active Insurance Group
IAIS	....	International Association of Insurance Supervisors
IASB	....	International Accounting Standards Board
IBHS	....	Insurance Institute for Business & Home Safety
iCBCM	....	FSB Cross-Border Crisis Management Group for Insurers
ICP	....	IAIS Insurance Core Principle
ICS	....	IAIS Insurance Capital Standard
IFRS	....	International Financial Reporting Standards
IFTRIP	....	International Forum of Terrorism Risk Insurance Pools
IGWG	....	Insurance Groups Working Group
IMF	....	International Monetary Fund
IMO	....	Independent Marketing Organization
IOSCO	....	International Organization of Securities Commissions
IPPC	....	OECD Insurance and Private Pensions Committee
IRA	....	Individual Retirement Account or Individual Retirement Annuity
Key Attributes	....	FSB, *Key Attributes for Effective Resolution Regimes for Financial Institutions*
L&H	....	Life and Health
LTCI	....	Long-Term Care Insurance
M&A	....	Merger and Acquisitions
MitFLG	....	Mitigation Framework Leadership Group
NAIC	....	National Association of Insurance Commissioners
NCOIL	....	National Conference of Insurance Legislators
NFIP	....	National Flood Insurance Program
NIST	....	National Institute of Standards and Technology
NYDFS	....	New York Department of Financial Services
OECD	....	Organisation for Economic Co-operation and Development
P2P	....	Peer-to-Peer
P&C	....	Property and Casualty

PBR	....	Principles-Based Reserving
PDI	....	Pennsylvania Department of Insurance
Penn Treaty	....	Penn Treaty American Corp.
PRA	....	United Kingdom’s Prudential Regulation Authority
RBC	....	Risk-Based Capital
Report	....	FIO, *2017 Annual Report on the Insurance Industry*
ReWG	....	IAIS Resolution Working Group
S&P 500	....	Standard and Poor’s 500 Index
Secretary	....	Secretary of the Treasury
SMRTF	....	Supervisory Materials Review Task Force
SNL Financial	....	SNL Financial, LC
SRATF	....	IAIS Systemic Risk Assessment Task Force
TFBI	....	IAIS Task Force on Systemically Important Banks and Insurers
TNC	....	Transportation Network Company
Treasury	....	U.S. Department of the Treasury
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
USTR	....	Office of the United States Trade Representative
WGCR	....	CPMI and IOSCO Joint Working Group on Cyber Resilience

I. EXECUTIVE SUMMARY

A. Insurance Industry Financial Overview

The 2017 Federal Insurance Office (FIO) Annual Report on the Insurance Industry (Report) begins by describing its structure and summarizing FIO's establishment, authorities, and activities. The Report then provides an overview of the 2016 financial condition and performance of both the life and health (L&H) and property and casualty (P&C) sectors of the U.S. insurance industry.

In 2016, the U.S. insurance industry reported a year of mixed financial performance, but in the aggregate remained in sound financial condition. Positive net income again raised the reported surplus of the L&H sector to a record level of $380.7 billion at the end of 2016. Despite experiencing underwriting losses in 2016, the P&C sector was also profitable, with surplus increasing to $712.3 billion as of year-end 2016.

L&H sector aggregate net premiums written decreased six percent to $600 billion in 2016, compared to $638 billion in 2015. This decline was caused by a large drop in premiums in all categories except for A&H products. In 2016, P&C sector net premiums written increased 2.5 percent from the previous year to a new record high of $534 billion, driven by modest economic growth in the United States and premium rate increases. Premiums written in personal lines of insurance grew slightly faster than those in commercial lines.

The P&C and L&H sectors were both profitable in 2016. Net income for the L&H sector decreased to $39 billion from $40 billion in 2015, largely due to an increase in net realized capital losses. The P&C sector reported net income of $44 billion in 2015, lower than the $58 billion reported in 2015 and the $65 billion reported in 2014. Underwriting losses of $2 billion – as compared to underwriting gains of $11 billion in 2015 – primarily caused the overall decline in net income.

The Report also discusses the role the insurance sector can play in supporting investment in national infrastructure, and outlines regulatory and private sector initiatives that may enhance these opportunities. The Report also states that, based on financial results reported by insurers in the first six months of 2017, the outlook for the U.S. insurance industry appears stable for the rest of 2017.

The insurance industry remained active in the capital markets in 2016. In the aggregate, the industry raised $5.4 billion of new equity capital through 22 offerings in 2016. Debt financing remained attractive, and the insurance industry issued $64.7 billion in new debt through 96 separate debt offerings. Merger and acquisition (M&A) activity continued in 2016, but at a significantly lower total value than transactions announced in 2015. There were 91 insurance M&A deals, valued at $21.6 billion, announced in 2016. In comparison, the 77 transactions announced in 2015 were valued at $143 billion. The Report also provides a brief overview of regulatory review of foreign acquisitions.

B. Domestic Regulatory and Market Developments

Next, the Report addresses a number of regulatory and market developments in the United States relating to insurance.

The cyber insurance market continues to develop although it faces challenges, including lack of historical and actuarial data as well as an incomplete understanding of insurers' exposure to accumulation risk. This section also addresses increasing regulatory interest in cyber insurance, and examines state, federal, and international initiatives relating to insurance sector cybersecurity.

The Report also discusses the evolving role of innovation and technology in the insurance industry. Reliance on InsurTech, or the innovative use of technology in insurance, is growing, with increased funding for innovations such as big data, blockchain, telematics, and peer-to-peer (P2P) insurance. These technologies present both potential opportunities and challenges for insurers, consumers, and regulators. The Report also examines the relationship between the sharing economy and insurance as an example of how the insurance industry responds to technological innovations in other sectors.

Storms, wildfires, flooding, earthquakes, and other natural disasters cause significant annual losses in the United States. The Report examines the way that insurance supports recovery from such hazards, and the important role the insurance industry plays in supporting hazard mitigation through innovation. The federal government also plays a role in reducing the risk of, and supporting recovery from, natural hazards. Two examples highlighted in the Report are the Mitigation Framework Leadership Group (MitFLG), which coordinates mitigation efforts across the federal government, and the National Flood Insurance Program (NFIP), a federal insurance and risk management program.

The Financial Stability Oversight Council (Council) monitors potential risks to U.S. financial stability and serves as a forum for discussion and coordination among its member agencies. In April 2017, President Trump issued a Presidential Memorandum directing the U.S. Department of the Treasury (Treasury) to review the process established under the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (Dodd-Frank Act) by which the Council determines that a nonbank financial company could pose a threat to the financial stability of the United States, as well as the process by which the Council designates financial market utilities as systemically important.

The Terrorism Risk Insurance Program (TRIP), administered by the Secretary of the Treasury (Secretary) with the assistance of FIO, was reauthorized in 2015. In December 2016, following a request for public comment, Treasury issued an interim final rule concerning the process for certification of an "act of terrorism," and a final rule concerning the balance of the program. In 2017, FIO conducted its first mandatory data call to analyze the overall effectiveness of TRIP. In June 2017, FIO relied upon information from this data call to submit a report to Congress on the competitiveness of small insurers in the terrorism risk insurance marketplace. This section of the Report also reviews the activities of the Advisory Committee on Risk-Sharing Mechanisms

(ACRSM), which provides FIO with advice, recommendations, and encouragement with respect to the creation and development of non-governmental risk-sharing mechanisms to protect against losses arising from acts of terrorism. The ACRSM met three times in 2017.

The Report next addresses the U.S. Department of Labor (DOL) rule expanding the types of retirement investment advice covered by the fiduciary provisions of the Employee Retirement Income Security Act of 1974 (ERISA).

The Report also discusses challenges facing the private long-term care insurance (LTCI) market, highlighting the potential impact of the failure of Penn Treaty American Corp. (Penn Treaty). Persistently low interest rates, longer lifespans, and lower than expected policy lapses have eroded the profitability of LTCI and led to significant financial losses for some insurers and contraction in the market. State insurance regulators, federal policymakers, and the insurance industry continue to focus on addressing challenges in this market.

This section of the Report concludes with an update on several state-level regulatory developments. First, the Report discusses the importance of capital in the context of insurance regulation, and outlines the current U.S. regulatory treatment of capital and ongoing developments at the state and federal levels. Second, the Report discusses life insurance reserving requirements, focusing on the states' recently adopted principles-based reserving rules and the 2017 Commissioners' Standard Ordinary Table (CSO). Third, the Report discusses developments concerning unclaimed death benefits from life insurance policies. Finally, this section provides an update on activities of the National Association of Insurance Commissioners (NAIC), including accreditation requirements effective in 2017, model law developments, and consideration of the standard of care applicable to annuity recommendations.

C. U.S. Competitiveness in Global Insurance Markets

In view of the internationalization of the insurance industry, and the benefits of global risk diversification, the Report's final section surveys and summarizes key developments with respect to global insurance markets, including FIO's engagement with international standard-setting and other international prudential insurance matters.

First, this section of the Report compares the U.S. insurance industry size and market penetration to that of various global jurisdictions. While the United States remains the world's largest single-country insurance market by direct premiums written ($1.3 trillion in 2016), with 29 percent of the global market, the figures for the European Union (EU) are similar when viewed as a single market. Insurance is growing rapidly in emerging markets; China is now the third largest insurance market, after the United States and Japan. These growing markets present attractive business opportunities for U.S. insurers and reinsurers.

The Report highlights U.S. progress in concluding the negotiation of a "covered agreement" with the EU. A covered agreement is an international agreement that relates to the recognition of prudential measures with respect to the business of insurance or reinsurance that achieves a level of protection for insurance or reinsurance consumers that is substantially equivalent to the level of protection achieved under state insurance or reinsurance regulation. Treasury, through FIO, and the Office of the United States Trade Representative (USTR) successfully concluded negotiations of a U.S.-EU covered agreement addressing important areas of regulatory cooperation between these two large insurance markets: group supervision; reinsurance (including collateral and local presence requirements); and exchange of information between regulatory authorities. The agreement, which was signed by the United States and the European Union on September 22, 2017 will deliver lasting benefits to the United States by providing regulatory certainty for U.S. insurers and reinsurers operating in the EU, and is expected to reduce costs for insurers and personal and commercial policyholders in the United States, while preserving important U.S. consumer protection provisions. In conjunction with signing the agreement, the United States issued a policy statement to provide additional clarity for U.S. insurance regulators and industry participants with respect to implementation of the agreement.

The United States participates in a number of initiatives in various international forums, including the International Association of Insurance Supervisors (IAIS) and the Financial Stability Board (FSB). FIO participates in a leadership role at the IAIS, as do other U.S. representatives from state insurance regulators, the NAIC, and the Board of Governors of the Federal Reserve System (Federal Reserve). The Report highlights FIO's increasing and improved efforts to engage with U.S. stakeholders, as well as to better consult with the other U.S. representatives to the IAIS, to ensure that the United States speaks at the IAIS with a unified voice and with the benefit of advice from the U.S. insurance community. The Report then discusses IAIS and other international work during 2016, including: (1) Common Framework for the Supervision of Internationally Active Insurance Groups and Insurance Core Principles; (2) ongoing development of international capital standards for insurance groups; (3) cross-border resolution planning; and (4) combating financial crime in insurance.

In January 2017, the IAIS Systemic Risk Assessment Task Force (SRATF) was created to assess and measure systemically-risky activities through an activity-based approach, and improve cross-sectoral consistency in systemic risk measurement. Relatedly, the Report notes that jointly with the Basel Committee on Banking Supervision, the IAIS created the Task Force on Systemically Important Banks and Insurers (TFBI) in 2017, which will address inconsistencies between the assessment methodology framework for Global Systemically Important Banks (G-SIBs) and that for Global Systemically Important Insurers (G-SIIs). The Report also discusses the work of the IAIS's Governance Working Group, Insurance Groups Working Group, Supervisory Materials Review Task Force, and Reinsurance Task Force.

Finally, the Report summarizes certain recent FSB activities. Working with the IAIS, in 2016 the FSB identified nine companies (including three U.S. companies) as G-SIIs using an updated assessment methodology released by the IAIS in 2016. The three U.S. insurers identified as G-SIIs by the FSB using the revised assessment methodology were American International Group Inc., MetLife Inc., and Prudential Financial Inc.

II. INTRODUCTION

This Report is submitted by the Federal Insurance Office pursuant to Section 502(a) of the 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 [FIO] Director or requested by such committees."[1]

A. Structure of Report

The Report begins with an overview of the financial performance and condition of two key U.S. insurance industry sectors: (1) life and health; and (2) property and casualty. This section also includes a brief preview of industry financial performance and trends for 2017 based on interim results reported through June 30, 2017; full-year 2017 results will be more fully addressed in FIO's 2018 annual report.

The Report next addresses a range of developments – at the state, federal, and international levels – which have occurred over the past year, and which will or may have implications for the U.S. insurance sector. Discussions of domestic activities include updates on: (1) cybersecurity and the cyber insurance market; (2) innovation and technology in the insurance industry; (3) natural hazards and mitigation; (4) the Financial Stability Oversight Council; (5) TRIP; (6) the DOL Fiduciary Rule; (7) LTCI; and (8) additional state-level regulatory developments, including with respect to capital.

The Report proceeds to discuss U.S. competitiveness in global insurance markets, including a review of 2016 and 2017 developments in concluding a bilateral agreement with the EU regarding prudential insurance and reinsurance measures (known in the United States as a covered agreement). The international section also addresses FIO's engagement with the IAIS and FSB. FIO's work on the EU-U.S. Insurance Project, and its role at the Organisation for Economic Co-operation and Development (OECD) are also addressed below in the discussion of FIO activities.

B. Federal Insurance Office

Title V of the Dodd-Frank Act established FIO within Treasury.[2] 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 Council, FIO is authorized to:

---

[1] Federal Insurance Office Act of 2010, 31 U.S.C. § 313(n)(2) (2015).

[2] Federal Insurance Office Act of 2010, 31 U.S.C. § 313(a) (2015). Title V also designates the Secretary as advisor to the President on "major domestic and international prudential policy issues in connection with all lines of insurance except health insurance." 31 U.S.C. § 321(a)(9).

- 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 Federal Reserve;
- assist the Secretary in the administration of 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 IAIS and assisting the Secretary in negotiating covered agreements;
- determine whether state insurance measures are preempted by covered agreements;
- 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.[3]

In addition, before the Secretary may make a determination as to whether to seek the appointment of the Federal Deposit Insurance Corporation (FDIC) 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.[4] 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.[5]

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.

In August 2016, FIO hosted a *Long-Term Care Insurance Roundtable* for stakeholders, including insurers, trade associations, state and federal regulators, industry experts, and consumer groups. Topics covered included the need for long-term care services, the state of the private market and public programs, and state review of proposed rate increases.

[3] Federal Insurance Office Act of 2010, 31 U.S.C. § 313(c)(1) (2015).

[4] Dodd-Frank Act, 12 U.S.C. § 5383(a)(1)(C) (2015).

[5] 12 U.S.C. § 5365(i)(1)(A).

In September 2016, FIO hosted an *Insurance Supervision in the Americas* forum and invited leading insurance authorities from North, Central, and South America to attend. Lead supervisors from 16 countries attended. The United States was represented by FIO, state insurance regulators, the NAIC, and the Federal Reserve. Participants addressed topics including natural catastrophes, financial stability, cybersecurity, and retirement security.

FIO partnered with the Federal Emergency Management Agency (FEMA) to jointly host stakeholder meetings about flood insurance and the NFIP in September and October 2016 with private sector, public sector, consumer advocate, and academic participants. Topics covered included the customer experience and incentivizing community resilience, as well as the NFIP's "mandatory purchase requirement" which requires the purchase and retention of flood insurance by homeowners who live in designated high flood risk areas, and have either federally-backed or federally-insured loans.

In November 2016, FIO published a *Report on Protection of Insurance Consumers and Access to Insurance,* presenting topics related to insurance and consumer protection, including: (1) insurance and technology; (2) environmental hazards and insurance; (3) fairness in insurance practices; (4) fairness in state insurance standards; (5) retirement; and (6) related issues.[6]

Treasury issued an interim final rule with a request for public comment on December 7, 2016, reforming the process for certifying an act of terrorism under TRIA.[7] On December 21, 2016, Treasury issued a final rule updating TRIP regulations to reflect additional changes included in the Terrorism Risk Insurance Program Reauthorization Act of 2015 (TRIP Reauthorization Act).[8]

Treasury also published guidance in December 2016 confirming that stand-alone cyber liability insurance policies written in lines of insurance covered by TRIP and not otherwise excluded from the program are subject to all aspects of TRIP, including its mandatory offer and disclosure requirements.[9]

---

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

[7] Treasury, Terrorism Risk Insurance Program; Interim Final Rule, Certification, 81 Fed. Reg. 88592 (December 7, 2016), *https://www.federalregister.gov/documents/2016/12/07/2016-29313/terrorism-risk-insurance-program-certification*.

[8] Treasury, Terrorism Risk Insurance Program; Final Rule, 81 Fed. Reg. 93756 (December 21, 2016) (to be codified at 31 C.F.R. pt. 50), *https://www.federalregister.gov/documents/2016/12/21/2016-29987/terrorism-risk-insurance-program*.

[9] Treasury, Guidance Concerning Stand-Alone Cyber Liability Insurance Policies Under the Terrorism Risk Insurance Program, 81 Fed. Reg. 95312 (December 27, 2016), *https://www.federalregister.gov/documents/2016/12/27/2016-31244/guidance-concerning-stand-alone-cyber-liability-insurance-policies-under-the-terrorism-risk*.

In January 2017, FIO released a *Study on the Affordability of Personal Automobile Insurance*, providing quantifiable information on auto insurance affordability for traditionally underserved communities and consumers, minorities, and low- and moderate-income persons.[10]

In furtherance of FIO's statutory duty to assist the Secretary in administering TRIP, in June 2017, FIO participated in the annual meeting of the International Forum of Terrorism Risk Insurance Pools (IFTRIP). IFTRIP is an international organization of national terrorism risk pools that provides a forum for members to discuss best practices and issues of common interest in the provision of terrorism risk insurance. The annual meeting considered a range of topics, including the provision of insurance for cyber attacks by terrorists and gaps in terrorism risk insurance coverage.

Pursuant to the TRIP Reauthorization Act, in June 2017, FIO published a *Study of Small Insurer Competitiveness in the Terrorism Risk Insurance Marketplace*, analyzing small insurers participating in TRIP.[11] This study was based in part on the first phase of FIO's first mandatory TRIP data call of insurers, conducted between January and May 2017. The second phase of the TRIP data call will be completed on October 1, 2017.

The Federal Advisory Committee on Insurance (FACI), which provides advice and recommendations to FIO in performing its duties and authorities, convened in January, May, and August 2017.[12] These meetings addressed a variety of topics (some of which are discussed in further detail in this Report), including auto insurance, blockchain technology, big data, IAIS initiatives, cyber insurance, InsurTech, infrastructure, and the insurance market.

In addition, the ACRSM, which provides advice and recommendations to FIO with respect to private market risk-sharing mechanisms for protection against losses arising from acts of terrorism, met in December 2016, as well as in March, June, and July 2017.[13]

Throughout 2016 and 2017, 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 "ComFrame," the Common Framework for the Supervision of Internationally Active Insurance Groups (IAIGs); the evaluation of systemic risk; and on its work developing an Insurance Capital Standard (ICS) – including its adoption of a

[10] FIO, *Study on the Affordability of Personal Automobile Insurance* (2017), *https://www.treasury.gov/initiatives/fio/reports-and-notices/Documents/FINAL%20Auto%20Affordability%20Study_web.pdf*.

[11] FIO, *Study of Small Insurer Competitiveness in the Terrorism Risk Insurance Marketplace* (2017), *https://www.treasury.gov/initiatives/fio/reports-and-notices/Documents/Study_of_Small_Insurer_Competitiveness_in_the_Terrorism_Risk_Insurance_Marketplace_(June_2017).pdf*.

[12] "Initiatives, Federal Advisory Committee on Insurance (FACI)," Treasury, *https://www.treasury.gov/initiatives/fio/Pages/faci.aspx*. Presentation materials are available on the FACI website.

[13] "Initiatives: Advisory Committee on Risk-Sharing Mechanisms (ACRSM)," Treasury, *https://www.treasury.gov/initiatives/fio/acrsm/Pages/default.aspx*.

Version 1.0 and related plans for field testing. FIO also continued its involvement with working groups and task forces at the IAIS and FSB on a variety of issues, including resolution, financial crimes, and governance.

FIO has taken numerous actions to coordinate U.S. efforts on international insurance matters to ensure that U.S. stakeholders have regular U.S.-based opportunities to meet and work with all U.S. participants at the IAIS: FIO; state insurance regulators; the NAIC; and the Federal Reserve. FIO will continue to improve and expand its engagement efforts going forward, in order to ensure that FIO and other U.S. members of the IAIS receive input from a wide range of U.S. stakeholders and advocates for U.S. interests. FIO also has improved its coordination with the U.S. members of the IAIS in order to promote a unified "Team USA" position at the IAIS.

Internationally, FIO also remains engaged in the Insurance and Private Pensions Committee (IPPC) at the OECD. The OECD serves as a source of advice for the Group of Twenty (G-20) and the public on various policymaking and implementation matters, and collects and publishes statistical data and analyses on various topics.[14] The Department of Commerce leads the official delegation from United States to the IPPC, which also includes Treasury and the NAIC. The IPPC has recently conducted research on the cyber risk insurance market, which is discussed further in Section IV.A.

FIO has continued its work with the EU-U.S. Insurance Project, which was established in 2012 as a collaborative effort among U.S. and EU authorities in the insurance sector to "contribute to an increased mutual understanding and enhanced cooperation between the EU and the United States to promote business opportunity, consumer protection, and effective supervision."[15] On October 19, 2016, the Project Steering Committee hosted its fourth public event in Frankfurt, Germany to discuss supervisory cooperation, consumer trends and their impact on the insurance industry, and to consider the direction of the Project's future work.[16] In January 2017, the Project convened a teleconference to discuss cybersecurity efforts in the financial services sector, and to enhance transatlantic coordination on these and related issues.[17] In the remainder of 2017 and in 2018, the Project will focus on: insurer cybersecurity and cyber risk insurance products;

[14] OECD, *Secretary-General's Report to Ministers* (2017), 12, *http://www.oecd.org/publications/secretary-general-s-report-to-ministers-22223843.htm*.

[15] The Project was first convened by FIO as a Steering Committee in 2012. In addition to FIO, its members now include the European Insurance and Occupational Pensions Authority (EIOPA), the European Commission, the Bank of England, the NAIC, and the Federal Reserve. *See* EU-U.S. Dialogue Project, *EU-U.S. Dialogue Project: The Way Forward, Objectives and Initiatives for the Future* (2012), *http://www.naic.org/documents/eu_us_dialogue_wayforward_121220.pdf*.

[16] EIOPA, "The Steering Committee of the EU-U.S. Insurance Project Defines Priority Areas for the Coming Year," news release, October 19, 2016, *https://eiopa.europa.eu/Publications/Press%20Releases/2016-10-19%20EU-US%20Insurance%20Project%20Public%20Forum.pdf*.

[17] EIOPA, "The EU-U.S. Insurance Project Addresses Cyber Risk," news release, January 17, 2017, *https://eiopa.europa.eu/Publications/Press%20Releases/2017-01-17%20THE%20EU%20%e2%80%93%20U.S.%20INSURANCE%20PROJECT%20ADDRESSES%20CYBER%20RISK.doc.pdf*.

the use and implications of big data in insurance underwriting; and building increased cooperation and understanding on insurance-related intracompany transactions.

FIO, working with USTR, continued negotiations with the EU during 2016 on a covered agreement addressing certain prudential insurance and reinsurance measures, and in January 2017 notified Congress that the Parties had reached agreement on a final legal text and submitted that text.[18] In July 2017, Treasury and USTR announced the intention of the United States to sign the agreement,[19] and the parties signed the agreement on September 22, 2017.[20]

[18] *See* Treasury and USTR, "Treasury, USTR Successfully Complete Negotiations for a Covered Agreement with the European Union," news release, January 13, 2017, *https://www.treasury.gov/press-center/press-releases/Pages/jl0705.aspx*. The final legal text also appeared in the Federal Register. *See* Treasury and USTR, Notice of Availability of Bilateral Agreement Between the European Union and the United States of America on Prudential Measures Regarding Insurance and Reinsurance, 82 Fed. Reg. 8488 (January 25, 2017), *https://www.federalregister.gov/documents/2017/01/25/2017-01638/notice-of-availability-of-bilateral-agreement-between-the-european-union-and-the-united-states-of*.

[19] Treasury and USTR, "Treasury, USTR Notice of Intent to Sign," news release, July 14, 2017, *https://www.treasury.gov/press-center/press-releases/Pages/sm0124.aspx*.

[20] For more on the covered agreement, *see* Section V.B. of this Report.

III. INSURANCE INDUSTRY FINANCIAL OVERVIEW

This Report provides financial data and analysis about two key U.S. insurance sectors: (1) life and health; and (2) property and casualty. 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. L&H insurers may offer products to individuals or groups (such as employers for use in their employee benefits plans).

Insurers in the P&C sector also generally offer products in two segments: (1) personal lines, which protect individuals and families against the risk of financial loss associated with damage to property or exposure to liability; and (2) commercial lines, which protect against the risk of financial loss for businesses. P&C insurers may offer products in both lines, or focus on just one.

The third U.S. insurance sector is the health sector. The health sector includes companies licensed solely as health insurers or Health Maintenance Organizations. Detailed analysis of the health sector is not included in this Report; however, some high-level information is provided for comparative purposes.

In the aggregate, the U.S. insurance industry, i.e., those U.S.- or foreign-owned, regulated insurance entities operating in the United States, reported a year of mixed financial performance, but remained in sound financial condition through 2016.[21] The industry continues to be affected by the low interest rate environment. While the low interest rate environment has been a factor for a number of years, its negative effect on the industry's financial performance has become more visible in the past two years. Investment income for both L&H and P&C insurers has stagnated, and net yields on invested assets have continued to decline, reaching their lowest levels of the past ten years in 2016. Insurers, particularly life insurance and annuities underwriters, face increased reinvestment risk – the inability to reinvest funds from maturing investments at rates of return equal to those which existed when the maturing investments were originally purchased – making it difficult to match asset and liability cash flows. Insurers have taken measured steps to address the effect of low interest rates, but those steps may not be adequate if interest rates continue to remain historically low.

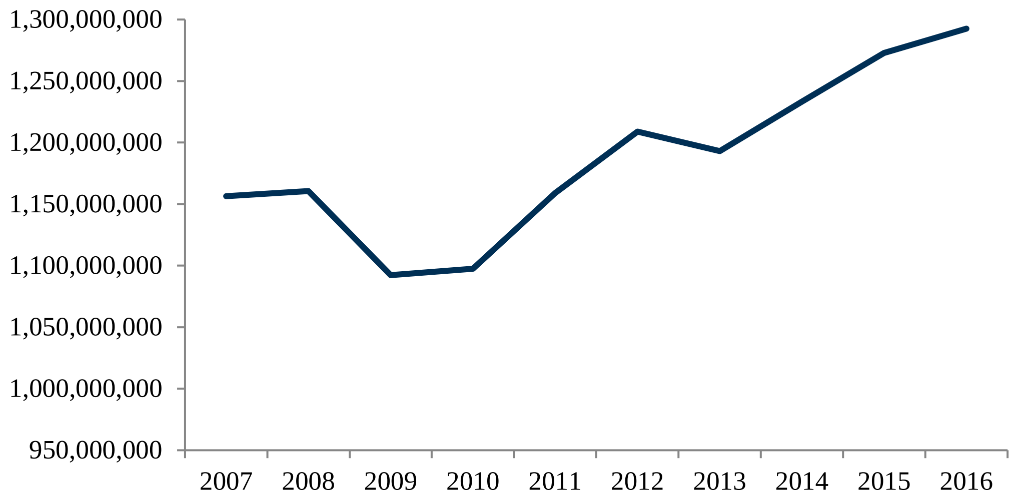
[21] Except as otherwise indicated, data cited in Section III of the Report are as of December 31, 2016, as derived from SNL Financial, LC (SNL Financial) on May 1, 2017. These data are reported on a statutory accounting basis. SNL Financial continuously updates its data for corrections in filings; 2015 data in this Report are based on updated data available as of May 1, 2017, and thus may be different in some respects from corresponding figures reported in FIO's *2016 Annual Report on the Insurance Industry*. Due to certain conventions used by SNL Financial for aggregation of industry data, some columns in the accompanying tables may not sum to the totals which have been separately accumulated by SNL Financial from individual legal entity data. In addition, some figures may not add to 100 percent due to rounding. *See* SNL Financial (as of May 1, 2017), https://www.snl.com.

Economic conditions guide the Federal Reserve as it works to meet its mandate of maximizing employment in the United States, stabilizing U.S. prices, and achieving moderate long-term interest rates.[22] Higher interest rates in the future should beneficially affect liquidity levels and other aspects of the financial health of the L&H sector. At the end of 2015, the Federal Reserve began to gradually raise the target Federal Funds rate, which had remained close to zero since the 2007-2008 financial crisis. That year the Federal Reserve raised the benchmark rate by 25 basis points. The Federal Reserve has since raised the benchmark rate an additional 75 basis points (25 basis points on one occasion in December 2016, and on two occasions in 2017), with the latest hike occurring in June 2017.[23]

A. Domestic Insurance Marketplace Overview

For 2016, total direct premiums written for the combined L&H and P&C sectors were $1.29 trillion, marking a two percent increase over 2015 levels, as shown in Figure 1.

Figure 1: Total Direct Premiums Written for L&H and P&C Sectors ($ thousands)



Source: SNL Financial

[22] *See* Federal Reserve, *The Federal Reserve System: Purposes and Functions* (October 2016), 23, *https://www.federalreserve.gov/aboutthefed/files/pf_complete.pdf*.

[23] *See* Federal Reserve Reform Act, Pub. L. 95-188, 91 Stat. 1387 (1977); "Policy Tools: Open Market Operations," Federal Reserve, June 14, 2017, *https://www.federalreserve.gov/monetarypolicy/openmarket.htm*.

1. Financial Performance and Condition

This section focuses on the financial performance and condition of the 780 L&H insurers and 2,655 P&C insurers in the United States, and provides high-level data on the 1,095 health insurers licensed in the United States as well.[24]

Net premiums written for the L&H sector were approximately $600 billion in 2016, or 34 percent of net premiums written for the combined L&H, P&C, and health sectors.[25] For the P&C sector, net premiums written were approximately $534 billion, or 30 percent of net premiums written for the combined L&H, P&C, and health sectors. The health sector reported $631 billion of net premiums written for 2016, or 36 percent of the combined total for the three sectors. At the end of 2016, the L&H sector held approximately $6.6 trillion of total assets (including $2.5 trillion held in separate accounts), the P&C sector held approximately $1.9 trillion, and the health sector held approximately $377 billion. As of December 31, 2016, capital and surplus in the L&H sector stood at approximately $381 billion, the P&C sector reported capital and surplus of approximately $712 billion, and the health sector reported approximately $164 billion.

Figures 2 and 3 present snapshots of the L&H sector market in the United States, showing the ten largest L&H insurance groups measured by direct premiums written and market share for the life and annuities subsector and for A&H lines of business, respectively. Premiums shown in Figures 2 and 3 aggregate all L&H sector products and all geographies of the United States. The data presented in Figures 2 and 3 for the life and annuities subsector, 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.

[24] SNL Financial; A.M. Best, *Best's Aggregates & Averages* (2016), http://www3.ambest.com/aggavg/toc/archive.aspx.

[25] Net premiums written are the net amounts of an insurer's premiums after taking into account direct premiums written and net reinsurance premiums.

Figure 2 below shows A&H premiums written by insurers authorized to conduct life and annuities insurance business.

Figure 2: L&H Insurance Groups by 2016 U.S. Life and Annuities Subsector Direct Premiums Written

2015 Rank	**2016 Rank**	**Insurance Group**	2015 Direct Premiums Written ($000)	Share of Total (%)	**2016 Direct Premiums Written ($000)**	**Share of Total (%)**
1	**1**	MetLife Inc.	$ 102,487,074	16.42	**$ 95,110,811**	15.22
2	**2**	Prudential Financial Inc.	43,134,670	6.91	**45,902,327**	7.34
3	**3**	New York Life Insurance Group	29,647,519	4.75	**30,922,462**	4.95
7	**4**	Principal Financial Group Inc.	23,416,059	3.75	**28,186,098**	4.51
8	**5**	Massachusetts Mutual Life Insurance Co.	23,117,904	3.70	**23,458,883**	3.75
6	**6**	American International Group	24,976,781	4.00	**22,463,202**	3.59
4	**7**	Jackson National Life Group	27,457,195	4.40	**22,132,278**	3.54
10	**8**	AXA SA	19,478,236	3.12	**21,920,627**	3.51
5	**9**	AEGON NV	24,983,201	4.00	**21,068,180**	3.37
9	**10**	Lincoln National Corp.	22,676,916	3.63	**19,441,555**	3.11
		Combined Top 10	$ 341,375,555	54.68	**$ 330,606,423**	52.89
		Combined Top 25	$ 497,410,941	79.70	**$ 492,133,340**	78.74
		Combined Top 100	$ 615,636,993	98.62	**$ 616,338,749**	98.63
		Total U.S. Life Insurance Lines	$ 624,175,403		**$ 624,950,037**	

Source: SNL Financial [includes Life Insurance (No Annuity), Annuity Considerations, Deposit-type Contracts (State Page), Other Considerations (State Page)]

In reviewing the market share rankings of the five largest writers of life insurance and annuities in 2016, the rankings for the top three positions remained unchanged from 2015. MetLife Inc. remained the largest writer of life insurance products in the United States. Increased premiums at Principal Financial Group Inc. elevated the firm to fourth place in 2016 from its seventh-largest position in 2015. Continued growth at Massachusetts Mutual Life Insurance Co. raised the firm to the fifth-largest writer of life insurance products from its eighth place position in 2015, marking its second consecutive year of notable market share increase. Additionally, continued growth from AXA SA's U.S. businesses (primarily AXA Equitable Life Insurance Company and MONY Life Insurance Company of America) raised it into the eighth-largest spot from tenth place in 2015, also marking the second year of market share gains for the firm.

Figure 3 below 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 7 below).

Figure 3: L&H Insurance Groups by 2016 U.S. A&H Lines Direct Premiums Written

2015 Rank	**2016 Rank**	**Insurance Group**	2015 Direct Premiums Written ($000)	Share of Total (%)	**2016 Direct Premiums Written ($000)**	**Share of Total (%)**
1	**1**	UnitedHealth Group Inc.	$ 43,817,056	25.79	**$ 46,669,151**	26.44
2	**2**	Aetna Inc.	24,962,250	14.69	**28,358,852**	16.07
3	**3**	Cigna Corp.	14,795,932	8.71	**15,505,890**	8.78
4	**4**	Aflac Inc.	13,643,143	8.03	**14,872,435**	8.43
5	**5**	MetLife Inc.	6,979,479	4.11	**7,407,695**	4.20
6	**6**	Unum Group	5,528,316	3.25	**5,739,627**	3.25
7	**7**	Mutual of Omaha Insurance Co.	3,473,325	2.04	**3,740,570**	2.12
8	**8**	Guardian Life Insurance Co. of America	3,413,472	2.01	**3,629,131**	2.06
10	**9**	Genworth Financial Inc.	2,637,316	1.55	**2,676,522**	1.52
11	**10**	AEGON NV	2,150,211	1.27	**2,079,926**	1.18
		Combined Top 10	$ 122,308,095	71.98	**$ 130,679,799**	74.05
		Combined Top 25	$ 145,756,216	85.79	**$ 153,742,118**	87.13
		Combined Top 100	$ 164,856,966	97.00	**$ 173,688,976**	98.41
		Total U.S. A&H Lines	$ 169,895,327		**$ 176,522,262**	

Source: SNL Financial

Thus, for example, the data presented in Figure 3 for UnitedHealth Group Inc. does 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 Inc. also writes health insurance business through subsidiaries that offer only health insurance, and those premiums are reflected in Figure 7.

There was little change in the top ten writers of A&H lines of business in 2016. United Health Group Inc. remained the largest writer of A&H lines in 2016. Genworth Financial Inc. rose one spot to ninth from tenth, and AEGON NV entered the top ten in tenth position.

As noted above, P&C insurers underwrite a variety of products, generally categorized as either personal lines or commercial lines. Figure 4 reports market share information on a combined P&C sector basis (including all lines of P&C business).

Figure 4: P&C Insurance Groups by 2016 U.S. Combined Lines Direct Premiums Written

2015 Rank	**2016 Rank**	**Insurance Group**	2015 Direct Premiums Written ($000)	Share of Total (%)	**2016 Direct Premiums Written ($000)**	**Share of Total (%)**
1	**1**	State Farm Mutual Automobile Insurance	$ 59,361,685	10.03	**$ 62,189,311**	10.19
3	**2**	Berkshire Hathaway Inc.	29,967,354	5.06	**33,300,439**	5.46
4	**3**	Liberty Mutual Group	29,848,412	5.04	**31,077,066**	5.09
2	**4**	Allstate Corp.	30,180,756	5.10	**30,875,771**	5.06
6	**5**	Progressive Corp.	21,383,662	3.61	**23,951,690**	3.93
5	**6**	Travelers Companies Inc.	23,200,304	3.92	**23,918,048**	3.92
7	**7**	Chubb Ltd.[26]	20,671,147	3.49	**20,728,330**	3.40
8	**8**	Nationwide Mutual Group	19,577,849	3.31	**19,756,093**	3.24
9	**9**	Farmers Insurance Group of Cos.	19,050,733	3.22	**19,677,601**	3.22
11	**10**	USAA Insurance Group	16,744,764	2.83	**18,273,675**	2.99
		Combined Top 10	$ 271,249,081	45.82	**$ 283,748,024**	46.50
		Combined Top 25	$ 383,385,662	64.76	**$ 397,042,076**	65.08
		Combined Top 100	$ 506,847,957	85.61	**$ 524,967,972**	86.04
		Total U.S. P&C Sector	$ 591,757,790		**$ 610,166,276**	

Source: SNL Financial (including all lines of business)

On a combined basis, State Farm Mutual Automobile Insurance Co. remained the largest writer of P&C business in 2016. Berkshire Hathaway, Inc. and Liberty Mutual Group each rose one position, to second and third, respectively, while Allstate Corp. slipped to fourth place from its second place ranking in 2015. There was little change among the remaining six insurers.

[26] 2015 data for The Chubb Corp. is provided on a combined basis with ACE Ltd. In January 2016, ACE Ltd. acquired The Chubb Corp. and changed the name of the combined insurer to Chubb Ltd. *See* "ACE Limited acquires Chubb Corporation," *SNL Financial*, *https://www.snl.com/web/client?auth=inherit#mna/dealOverview?id=203560*.

Figures 5 and 6 reflect market share information for P&C commercial lines (Figure 5) and P&C personal lines (Figure 6). Market share rankings did not change significantly among the top ten writers of commercial lines or the top ten writers of personal lines.

Figure 5: P&C Insurance Groups by 2016 Commercial Lines Direct Premiums Written

2015 Rank	**2016 Rank**	**Insurance Group**	2015 Direct Premiums Written ($000)	Share of Total (%)	**2016 Direct Premiums Written ($000)**	**Share of Total (%)**
1	**1**	Chubb Ltd.	$ 16,675,155	5.71	**$ 16,482,259**	5.61
2	**2**	Travelers Companies Inc.	16,347,492	5.60	**16,463,566**	5.60
4	**3**	Liberty Mutual Group	13,801,267	4.73	**14,049,356**	4.78
3	**4**	American International Group	15,921,080	5.45	**13,080,949**	4.45
5	**5**	Zurich Insurance Group	13,403,445	4.59	**12,554,597**	4.27
6	**6**	CNA Financial Corp.	9,203,419	3.15	**9,763,122**	3.32
7	**7**	Nationwide Mutual Group	8,401,984	2.88	**8,335,275**	2.83
8	**8**	Hartford Financial Services Group Inc.	7,635,701	2.61	**7,679,737**	2.61
9	**9**	Berkshire Hathaway Inc.	7,056,856	2.42	**7,650,236**	2.60
10	**10**	Tokio Marine Group	5,956,554	2.04	**6,248,195**	2.13
		Combined Top 10	$ 114,402,953	39.18	**$ 112,307,292**	38.20
		Combined Top 25	$ 174,171,894	60.62	**$ 174,555,327**	59.37
		Combined Top 100	$ 249,529,480	85.40	**$ 252,269,401**	85.81
		Total U.S. P&C Commercial Lines	$ 291,999,817		**$ 294,021,050**	

Source: SNL Financial

Figure 6: P&C Insurance Groups by 2016 Personal Lines Direct Premiums Written

2015 Rank	**2016 Rank**	**Insurance Group**	2015 Direct Premiums Written ($000)	Share of Total (%)	**2016 Direct Premiums Written ($000)**	**Share of Total (%)**
1	**1**	State Farm Mutual Automobile Insurance	$ 54,340,977	18.53	**$ 57,083,833**	18.43
2	**2**	Allstate Corp.	27,963,957	9.54	**28,717,388**	9.27
3	**3**	Berkshire Hathaway Inc.	22,828,453	7.78	**25,553,714**	8.25
4	**4**	Progressive Corp.	18,463,485	6.30	**20,559,851**	6.64
6	**5**	USAA Insurance Group	15,562,507	5.31	**17,032,072**	5.50
5	**6**	Liberty Mutual Group	16,039,932	5.47	**17,026,207**	5.50
7	**7**	Farmers Insurance Group of Cos.	15,270,479	5.21	**15,819,900**	5.11
8	**8**	Nationwide Mutual Group	11,163,343	3.81	**11,414,637**	3.68
9	**9**	Travelers Companies Inc.	6,852,414	2.34	**7,454,481**	2.41
10	**10**	American Family Insurance Group	6,420,260	2.19	**6,980,730**	2.25
		Combined Top 10	$ 194,905,807	66.48	**$ 207,642,813**	67.04
		Combined Top 25	$ 233,942,544	79.78	**$ 249,171,554**	80.46
		Combined Top 100	$ 273,734,365	93.34	**$ 290,588,723**	93.79
		Total U.S. P&C Personal Lines	$ 293,257,615		**$ 309,778,137**	

Source: SNL Financial

Figure 7 shows A&H premiums written by insurers authorized to offer only health insurance.

Figure 7: Health Insurance Groups by 2016 U.S. Health Lines Direct Premiums Written

2015 Rank	**2016 Rank**	**Insurance Group**	2015 Direct Premiums Written ($000)	Share of Total (%)	**2016 Direct Premiums Written ($000)**	**Share of Total (%)**
1	**1**	UnitedHealth Group Inc.	$ 68,041,707	11.69	**$ 79,473,071**	12.46
2	**2**	Anthem Inc.	54,715,501	9.40	**58,748,993**	9.21
3	**3**	Humana Inc.	51,405,175	8.83	**53,601,025**	8.40
4	**4**	HealthCare Services Corp. a Mutual	32,644,621	5.61	**32,157,585**	5.04
5	**5**	Aetna Inc.	24,417,307	4.19	**24,414,237**	3.83
6	**6**	Centene Corp.	20,261,187	3.48	**24,070,523**	3.77
8	**7**	Independence Health Group Inc.	13,869,064	2.38	**17,013,754**	2.67
7	**8**	Kaiser Foundation Health Plan Inc.	15,155,609	2.60	**16,166,834**	2.53
10	**9**	Molina Healthcare Inc.	11,918,163	2.05	**15,317,439**	2.40
9	**10**	WellCare Health Plans Inc.	13,072,554	2.25	**13,451,891**	2.11
		Combined Top 10	$ 305,500,887	52.48	**$ 334,415,351**	52.42
		Combined Top 25	$ 421,926,055	72.48	**$ 459,615,681**	72.05
		Combined Top 100	$ 554,167,344	95.20	**$ 607,899,577**	95.30
		Total U.S. Health Insurance Lines	$ 582,097,176		**$ 637,902,483**	

Source: SNL Financial

Market share rankings among the top six health insurance groups were unchanged from 2015. Independence Health Group and Kaiser Foundation Health Plan swapped seventh and eighth places, while Molina Healthcare and WellCare Health Plans likewise swapped ninth and tenth places. Similarly, the overall market concentration among the top 10, 25, and 100 groups was little changed in 2016 compared to 2015.

a. Life and Health Sector

This section presents additional analysis of the financial performance of the L&H sector in 2016, followed by an analysis of the L&H sector's overall financial condition.

L&H sector net premiums written decreased by six percent, including the negative effect on sector aggregates of a large, one-time reinsurance transaction.[27] Absent this transaction, the comparison to 2015 net premiums written would have still been negative, but less so, continuing the decline from the record level reached in 2014. Investment yield continued to decline as a result of the current low interest rate environment because of a higher invested asset base, however net investment income showed a slight increase for the year. Total expenses decreased

[27] In December 2016, Hannover Life Reassurance Company of America and American International Group Inc. (AIG) entered into a series of reinsurance transactions for $23 billion, in which Hannover Re assumed liability for certain AIG in-force term and universal life business; AIG characterized the deal as part of a "strategic restructuring." *See* Tim Zawacki, "US Life Industry Results Also Impacted by Large AIG Reinsurance Deal," *SNL Financial*, March 17, 2017, https://www.snl.com/web/client?auth=inherit#news/article?id=39852796.

slightly, while total revenues were essentially flat, leading to an increase in operating income compared to 2015. An increase in realized capital losses primarily brought 2016 L&H sector net income and return on average equity to a slight decrease from 2015 levels. Nonetheless, capital and surplus reached a record high, and leverage increased slightly as growth in total general account assets exceeded growth in capital and surplus.

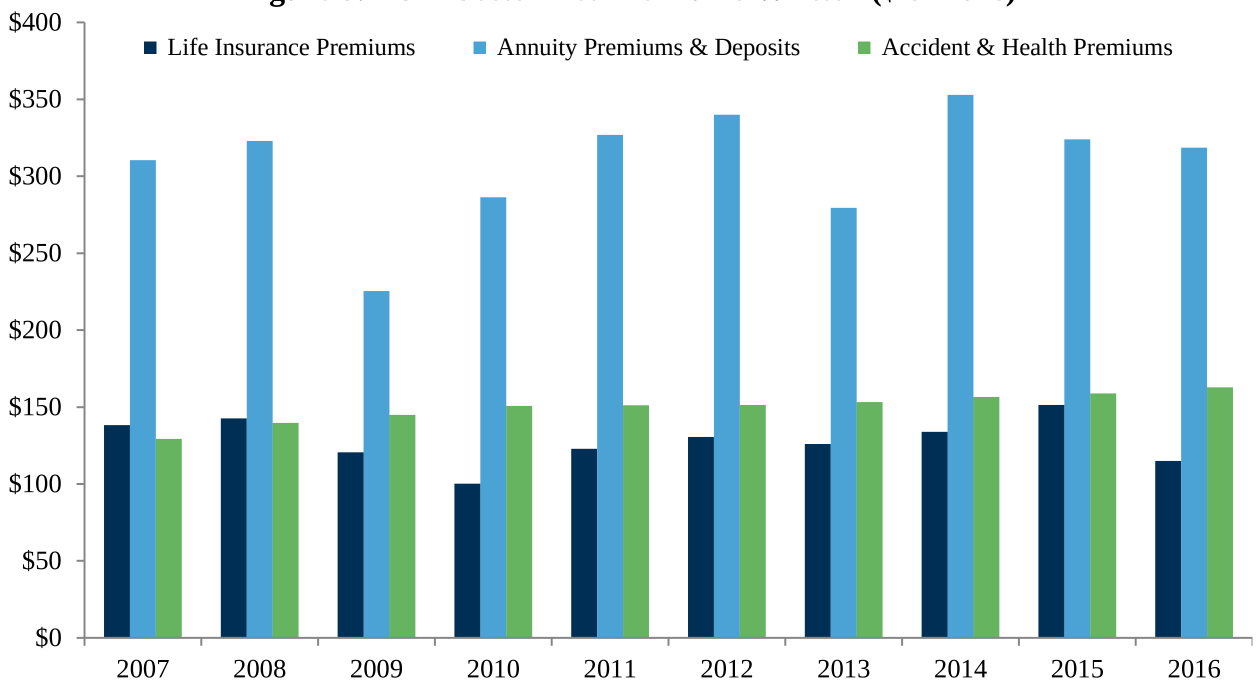
i. Performance

The following section discusses the financial performance of the L&H sector in 2016, with a detailed analysis of the aggregated income statement for the L&H sector.

(a) Net Premiums Written

Net premiums written is a principal measure of the size and growth of the insurance industry. Net premiums written accounted for over 70 percent of total L&H sector revenues, a level slightly lower than the historical average. Figures 8 and 9 show aggregate L&H sector premiums, considerations, and deposits.

Figure 8: L&H Sector Net Premiums Written ($ billions)



Source: SNL Financial

Figure 9: L&H Sector Net Premiums, Considerations, and Deposits ($ thousands)

	2012	2013	2014	2015	2016
Life Insurance Premiums	$ 130,546,216	$ 125,958,978	$ 133,902,121	$ 151,399,614	$ 115,034,616
Annuity Premiums & Deposits	339,914,846	279,434,360	352,823,672	324,041,791	318,539,291
A&H Premiums	151,396,375	153,305,130	156,605,802	158,826,518	162,856,484
Credit Life & Credit A&H Premiums	1,556,674	1,445,214	1,388,591	1,379,933	1,261,511
Other Premiums & Considerations	2,247,325	2,345,600	2,554,797	2,497,634	2,192,329
Total	**$ 625,664,756**	**$ 562,585,964**	**$ 647,274,984**	**$ 638,191,067**	**$ 599,884,231**
Share of Total	**2012**	**2013**	**2014**	**2015**	**2016**
Life Insurance Premiums	21%	22%	21%	24%	19%
Annuity Premiums & Deposits	54%	50%	55%	51%	53%
A&H Premiums	24%	27%	24%	25%	27%
Credit and Other	1%	1%	1%	1%	1%
	100%	**100%**	**100%**	**100%**	**100%**

Source: SNL Financial

Aggregate net premiums written growth has recently reflected a downward trajectory, declining in both 2016 and 2015; however, on an annual basis, growth in net premiums has averaged 3.2 percent since year-end 2009. In 2016, L&H sector net premiums written were $600 billion, marking a 6.0 percent decrease from the $638 billion reported in 2015. Net premiums written declined in all categories except A&H, led by a 24.0 percent drop in life insurance premiums and a 1.7 percent decrease in annuity considerations and deposits. It should be noted, however, that a large, one-time reinsurance transaction between American International Group subsidiaries and Hannover Life Reassurance Company of America negatively skewed the industry measure by approximately $20 billion.[28] Still, even adjusting for this transaction, net premiums written comparisons to 2015 for the sector would have remained negative.

In 2016, annuity premiums and deposits still represented the majority (53 percent) of total net premiums written for the L&H sector, an increase from the 51 percent reported in 2015, as shown in Figures 8 and 9. Sales of traditional life insurance products declined to 19 percent of 2016 L&H sector net premiums written from 24 percent in 2015, while A&H premiums largely made up the remainder with a 27 percent share in 2016 compared to 25 percent in 2015.

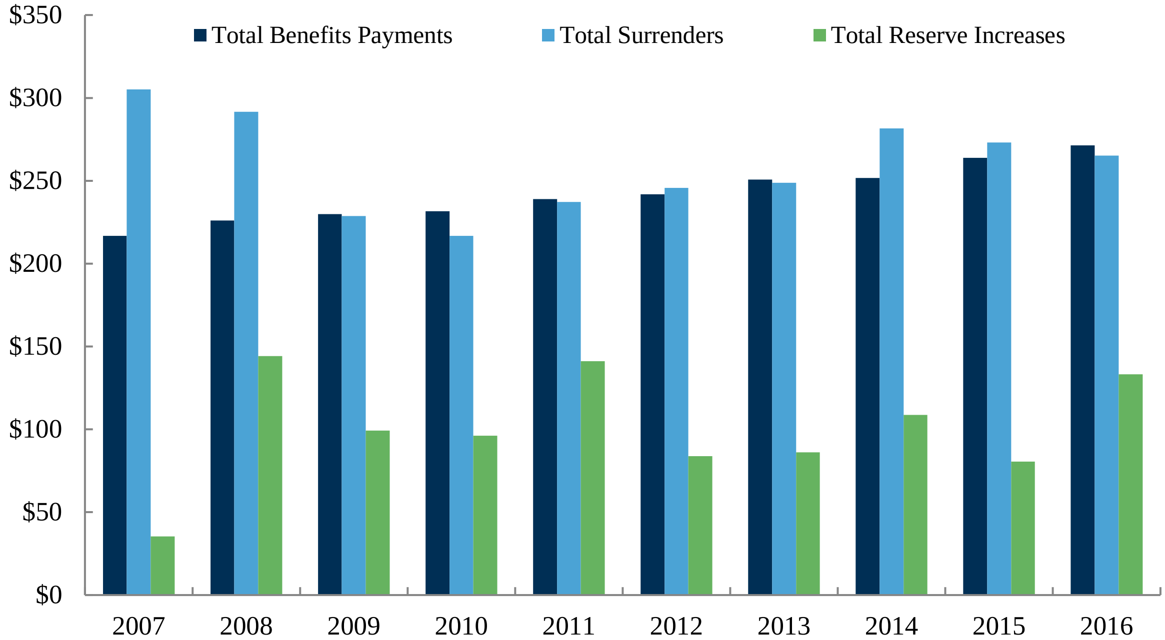
(b) Policyholder Contract Benefits, Surrenders, and Other Expenses

Policyholder contract benefits are claims or obligations of L&H insurers under life insurance, annuity, or 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 receive its accumulated cash value. Contract benefits payments and contract surrenders comprise the majority of total expenses for L&H insurers. Expenses unrelated to benefits 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.

[28] *See also* footnote 27, Zawacki, "US Life Industry Results."

Figures 10 and 11 show total L&H sector benefit payments, total surrenders, and total reserve increases for recent years.

Figure 10: L&H Sector Expenses ($ billions)



Source: SNL Financial

Figure 11: L&H Sector Expenses ($ thousands)

	2012	2013	2014	2015	2016
Total Benefits Payments	$ 241,773,268	$ 250,650,267	$ 251,752,460	$ 263,910,125	$ 271,374,749
Total Surrenders Payments	245,728,327	248,702,088	281,532,892	272,998,652	265,095,155
Total Increase in Reserves	83,760,841	86,223,072	108,734,429	80,546,645	133,126,573
Total Transfers to Separate Accounts	61,550,446	(771,523)	(16,464,689)	36,922,715	(38,046,582)
Commissions	52,614,950	53,015,154	52,063,514	55,501,271	64,569,215
General & Administrative Expenses	57,208,315	58,465,900	58,950,563	60,074,097	62,361,621
Insurance Taxes, Licenses, and Fees	8,039,539	8,194,034	9,981,158	10,481,379	10,827,970
Other Expenses	6,681,631	(373,487)	65,993,619	(4,916,529)	(2,715,556)
Total	**$ 757,357,317**	**$ 704,105,504**	**$ 812,543,945**	**$ 775,518,356**	**$ 766,593,145**

Source: SNL Financial

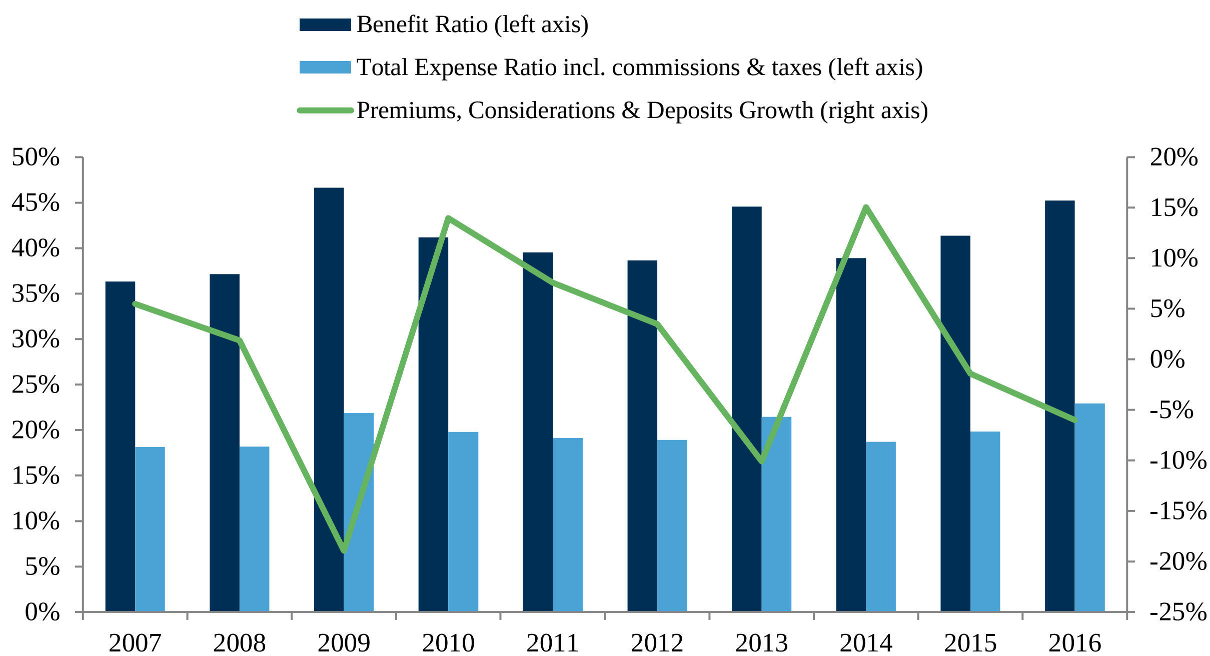
Total L&H sector expenses decreased by 1.2 percent in 2016. Transfers between general and separate accounts shifted from a net transfer *to* separate accounts in 2015, to a net transfer *from* separate accounts in 2016.[29] Though partially offset by a 65.3 percent increase in additions to

[29] Separate accounts, as the name implies, are held apart from an insurer's general investment account. These accounts hold and invest proceeds from the sales of products for which contract holders retain the investment risks. For statutory accounting in the United States, a transfer from an insurer's general account to a separate account is not eliminated as an intracompany transaction, because the separate account is viewed as a separate entity for reporting purposes.

reserves and increased commissions of 16.3 percent, this shift in net transfers was a significant contributor to reduced total expenses in 2016. A 2.8 percent increase in benefits was offset by a 2.9 percent decrease in surrenders, allowing for the overall net decrease in total expenses. The benefit ratio rose to 45.2 percent at year-end 2016 from 41.4 percent at year-end 2015, primarily caused by an increase in the benefit ratio for the ordinary life business.[30] The benefit ratio for the ordinary life business line was 61.4 percent at the current year-end, increasing by over 19 percentage points from the prior year-end, in large part due to a considerable reduction in net premium growth in this business line (as discussed above, a large one-time reinsurance transaction skewed net premiums in this line of business lower). Total benefits of $53.0 billion and $51.1 billion were reported for the ordinary life business in 2016 and 2015, respectively. Largely driven by increased commissions and lower net premiums, the total expense ratio for the L&H sector was slightly higher at year-end 2016, increasing to 23 percent, compared to 19.8 percent at year-end 2015.

Figure 12 below describes the L&H sector's underwriting performance over the last decade.

Figure 12: L&H Sector Underwriting Performance



Source: SNL Financial

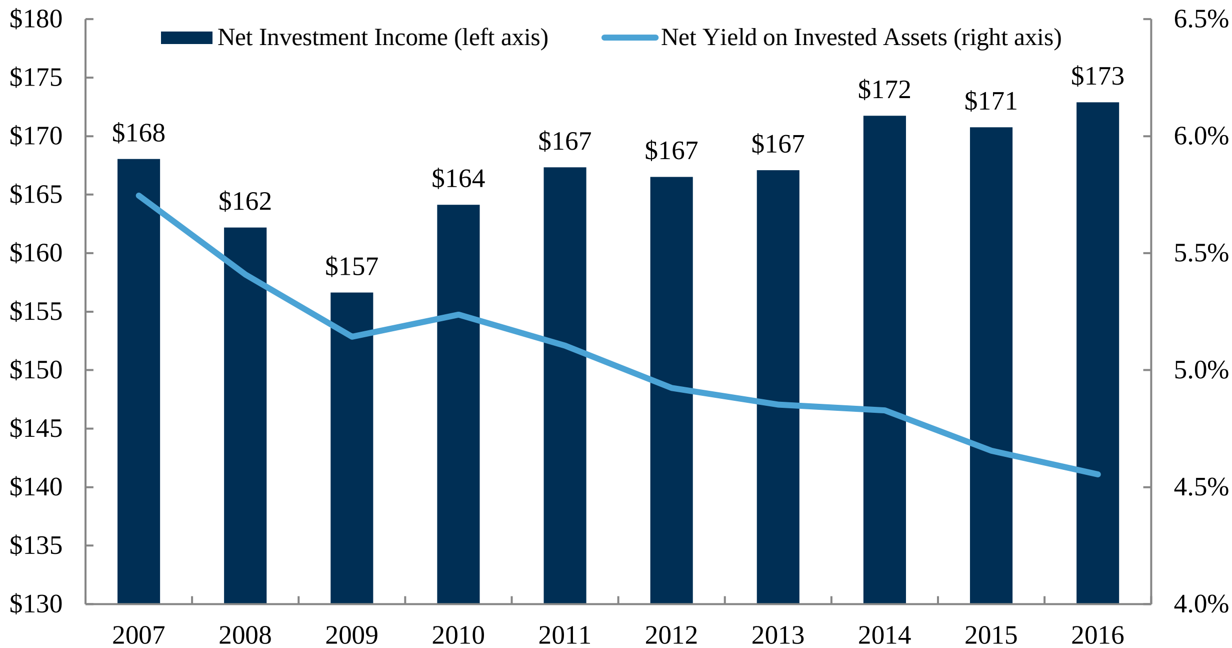
As illustrated above, recent underwriting performance appears to be under growing strain, as reduced net premium growth, stemming mainly from growth in cessions, has been a primary factor in exerting upward pressure on the L&H sector's benefit and total expense ratios.

[30] Ordinary life insurance policies are guaranteed to remain in force for the policyholder's entire lifetime, or until the contractual maturity date, provided required premiums are paid.

(c) Investment Income

Investment income is derived from interest payments, dividends, capital gains collected on the sale of a security or other assets, and any other profit made through an investment vehicle of any kind. Net investment income refers to income received from investment assets (before taxes) such as bonds, stocks, mutual funds, loans and other investments (less related expenses). Net investment income represented about 20.3 percent of aggregate L&H sector revenues in 2016, slightly below the annual average for the post-crisis period. Figures 13 and 14 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 13: L&H Sector Annual Net Investment Income ($ billions) and Net Yield on Invested Assets



Source: SNL Financial (Net Yield based on Average Net Admitted Invested Assets)

Figure 14: L&H Sector Investment Income ($ thousands) and Net Yield

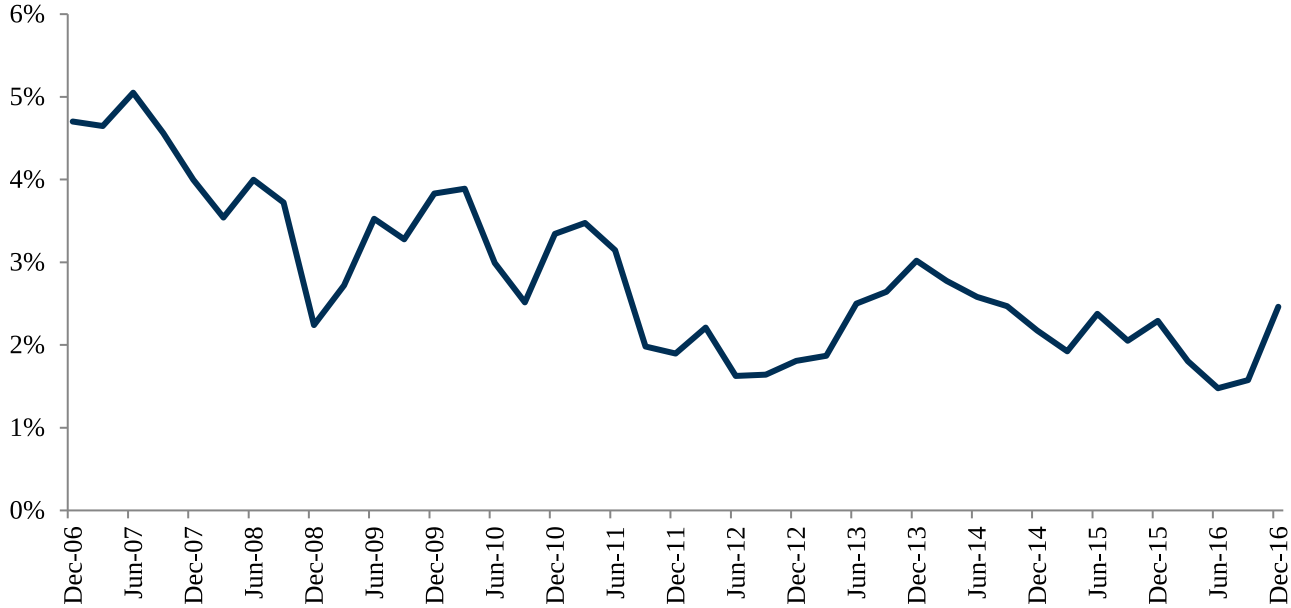
	2012	2013	2014	2015	2016
Net Investment Income	$ 166,522,938	$ 167,085,528	$ 171,733,049	$ 170,753,967	$ 172,890,313
Total Cash & Investments	3,403,292,657	3,482,338,468	3,631,569,037	3,703,860,635	3,888,186,773
Net Yield on Invested Assets	**4.92%**	**4.85%**	**4.83%**	**4.66%**	**4.55%**

Source**:** SNL Financial (Net Yield based on Average Net Admitted Investment Assets)

Despite falling during the first half of 2016, longer-term interest rates rose sharply in the fourth quarter and closed slightly higher by the end of 2016 compared to the year-end 2015 rate (see Figure 15); nonetheless, the L&H sector continued to experience lower investment yields, which declined to 4.56 percent in 2016 and marked the lowest level in the past ten years. Net investment income actually increased by 1.30 percent, but solid growth in total invested assets (up 5.10 percent) led to the decline in yield. The continued low interest rate environment continued to present risks to the L&H sector, as previously discussed in FIO's *2016 Annual Report on the Insurance Industry*.[31]

Figure 15 below shows the percentage yield on 10-year U.S. Treasury bonds.

Figure 15: Percentage Yield on 10-Year U.S. Treasury Bonds



Source: SNL Financial

In 2016, the L&H sector recorded net realized capital losses of $11 billion, more than triple the $3.5 billion in net realized capital losses reported in 2015, and the second consecutive year of a significant increase in losses. Increased losses on derivative securities (almost exclusively used for hedging transactions) were the primary cause of the increase in net realized capital losses.

(d) Net Income and Return on Equity

Figure 16 presents a summary income statement for the L&H sector. Total revenues in the L&H sector were $852 billion in 2016, an essentially flat comparison to the $848 billion reported in 2015. The decrease in net premiums written (discussed above) and a 32 percent drop in "other income" were somewhat offset by an 80 percent decrease in the reinsurance allowance, i.e., reserve adjustments on reinsurance ceded. Total expenses decreased by 1.2 percent to $767 billion, leading to a 23 percent gain in pre-tax operating income. Net income decreased by 2.1 percent to $39 billion in 2015, largely due to the increase in net realized capital losses.

[31] *See* FIO, *2016 Annual Report on the Insurance Industry* (2016), *https://www.treasury.gov/initiatives/fio/reports-and-notices/Documents/2016_Annual_Report_FINAL.pdf*.

Figure 16: L&H Sector Net Income ($ thousands)

	2012	2013	2014	2015	2016
Premiums, Considerations & Deposits	$ 625,664,756	$ 562,585,964	$ 647,274,984	$ 638,191,067	$ 599,884,231
Net Investment Income	166,522,938	167,085,528	171,733,049	170,753,967	173,024,361
Reinsurance Allowance	(30,779,711)	(21,247,568)	(14,987,927)	(86,443,933)	(16,975,046)
Separate Accounts Revenue	29,516,587	31,425,593	34,270,975	35,197,929	34,652,744
Other Income	41,547,171	42,814,138	39,700,564	90,478,871	61,318,965
Total Revenue	**832,471,742**	**782,663,655**	**877,991,645**	**848,177,900**	**851,905,255**
Total Expenses	757,357,317	704,105,504	812,543,945	775,518,356	766,593,145
Policyholder Dividends	15,211,990	15,660,306	16,430,515	18,271,884	18,230,320
Net Gain from Operations before Tax	59,568,028	62,897,846	49,012,243	54,389,094	67,081,791
Federal Income Tax	9,865,190	8,553,612	10,106,154	10,566,567	16,279,836
Net Income before Capital Gains	49,709,026	54,344,234	38,905,344	43,825,635	50,801,955
Net Realized Capital Gains (Losses)	(9,448,488)	(12,026,928)	(1,306,441)	(3,543,569)	(11,378,697)
Net Income	**$ 40,260,418**	**$ 42,317,305**	**$ 37,605,615**	**$ 40,278,063**	**$ 39,423,258**

Source: SNL Financial

Figure 17 shows key operating ratios for the L&H sector, indicators of the sector's profitability over the last five years.

Figure 17: L&H Sector Operating Ratios

	2012	2013	2014	2015	2016
Pre-Tax Operating Margin	7.16%	8.04%	5.58%	6.41%	7.87%
Return on Average Equity	12.64%	12.85%	10.96%	11.17%	10.54%
Pre-Tax Operating Return On Average Equity	18.70%	19.10%	14.29%	15.08%	17.94%
Return on Average Assets	0.73%	0.73%	0.61%	0.64%	0.61%

Source: SNL Financial

The L&H sector's 2016 pre-tax operating margin improved to 7.9 percent from 6.4 percent in 2015. The increase in operating income led to an increase in the sector's pre-tax operating return on average equity to 17.9 percent from 15.1 percent in 2015. Reduced net income, however, contributed to the drop in the return on average equity to 10.5 percent in 2016 from 11.2 percent in 2015.

ii. Condition

This section presents information on the 2016 financial condition of the L&H sector, highlighting common industry metrics associated with solvency and financial stability.

(a) Capital and Surplus

Figure 18 shows the financial condition of the L&H sector as represented by its assets, capital and surplus, and its financial leverage ratio.

Figure 18: L&H Sector Financial Leverage ($ thousands)

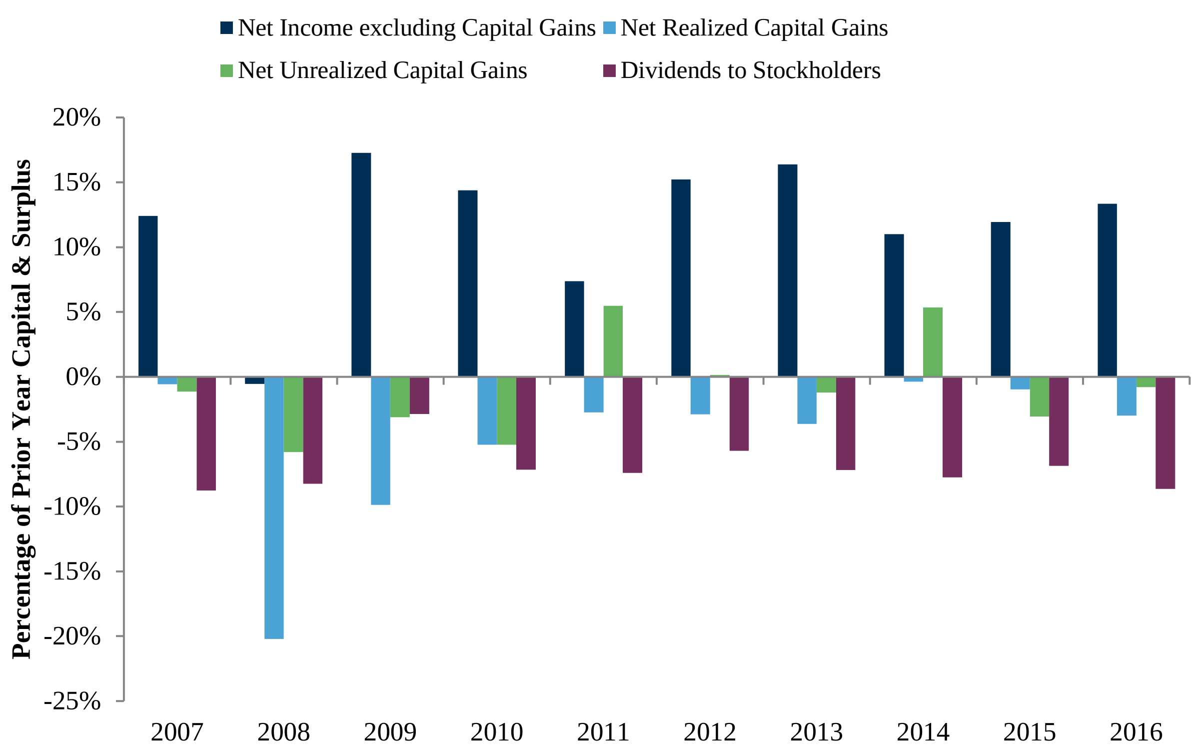
	2012	2013	2014	2015	2016
Capital & Surplus	$ 326,647,273	$ 331,982,056	$ 353,968,597	$ 367,237,674	$ 380,645,678
General Account Assets	3,587,753,293	3,675,915,856	3,835,978,902	3,912,008,760	4,117,425,775
General Account Assets-to-Surplus Ratio	**10.98x**	**11.07x**	**10.84x**	**10.65x**	**10.82x**

Source: SNL Financial

In 2016, the L&H insurance sector demonstrated an improved surplus base, with capital and surplus growing by 3.7 percent to $380.7 billion from the previous year-end and exhibiting an average annual growth rate of 3.9 percent over the post-crisis period.[32]

Figure 19 shows key contributors to the L&H sector's capital and surplus position, with positive earnings primarily enhancing the sector's capital position.

Figure 19: Key Contributors to L&H Sector Capital and Surplus



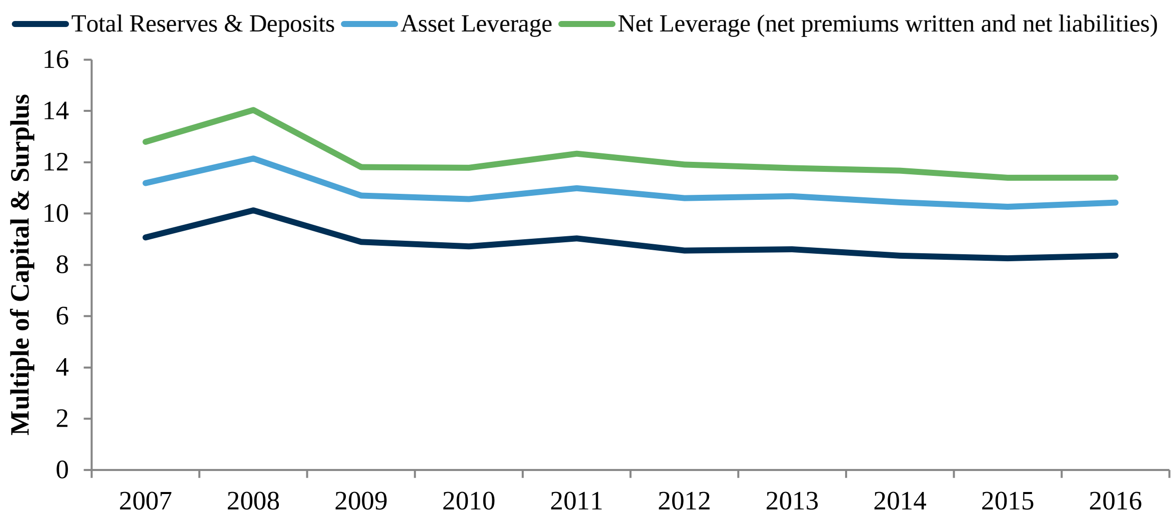
Source: SNL Financial

[32] The recent 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 of 2010 through 2016 and percentage changes are calculated from year-end 2009.

Eliminating the effect of capital contributions in the form of surplus notes, organic growth in capital and surplus has averaged 4.4 percent annually in the post-crisis period, mainly due to consistently strong underwriting results that have boosted net income. Partially offsetting that growth have been stockholder dividends, which reached a post-crisis high of $32.9 billion in 2016, rising by 30.6 percent from 2015. Though peaking in 2016, stockholder dividends comprised less than 9 percent of prior year-end capital and surplus and have not exceeded that percentage in any of the previous post-crisis years.

Insurers balance two goals: (1) returning a profit by investing the premiums received from underwriting activities; and (2) limiting the risk exposure created by the policies that insurers underwrite. Insurers may cede premiums to reinsurance companies in order to move some of the risks off of their balance sheets. Stable general account leverage ratios are further evidence of the L&H sector's resilient capital position throughout the post-crisis period. Figure 20 shows general account leverage ratios for the L&H sector holding steady.

Figure 20: General Account Leverage for the L&H Sector



Source: SNL Financial

The net leverage ratio[33] for the L&H sector stood at 11.4 at year-end 2016, unmoved from the prior year-end and declining from a post-crisis high of 12.3 at year-end 2011. Specifically, the liabilities-to-equity multiple of 9.8 at year-end 2016, reflecting general account liabilities of $3.7 trillion as a multiple of capital and surplus, was slightly up from 9.7 at year-end 2015 and has averaged at a multiple of 10 annually over the past seven years. Net premiums written have averaged 1.8 times capital and surplus per year during the post-crisis period. Surplus relief through reinsurance for the L&H sector has increased recently, rising to 5.0 percent at year-end

[33] Net leverage ratio is an indicator of the sector's exposure to pricing and estimation errors, determined by calculating net liabilities and net premiums written as a multiple of capital and surplus.

2016 from 3.7 percent at year-end 2014.[34] Cessions to reinsurers accounted for 24.7 percent of gross premiums at year-end 2016, climbing from 22.9 percent at year-end 2015 and surpassing the post-crisis average of 20.3 percent.

Exhibiting an annual growth rate of 3 percent on average since year-end 2009, general account policy reserves and deposit-type contract reserves were $3.2 trillion at year-end 2016, up by 5 percent from $3.0 trillion at year-end 2015. The multiple of reserves and deposits to capital and surplus, however, has held firm, standing at 8.4 and 8.3 for the years ending 2016 and 2015, respectively, declining from a high of 9.0 in the post-crisis period.

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. The L&H sector's asset leverage multiple has ranged between 10.3 and 11.0 during the post-crisis period, averaging 10.6 annually, suggesting that no substantial deviations have occurred in the sector's exposure to investment, interest rate, and credit risks in the last seven years.

(b) Asset Base

The L&H sector's capital position has been supported by growth in total assets as well as consistency in the composition of the sector's asset portfolio. Total L&H insurance sector assets, including separate accounts, were $6.6 trillion and $6.3 trillion for the years ending 2016 and 2015, respectively, growing annually by 4.5 percent on average post-crisis. The annual growth rate of separate account assets has exceeded that of general account assets over the post-crisis period, averaging 6.5 percent versus 3.5 percent.

Figure 21 shows the composition of the L&H sector's asset portfolio. General account assets have averaged about 63 percent of total asset holdings annually over the post-crisis period, while separate account assets have made up the remainder.

[34] 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, *The Breadth and Scope of the Global Reinsurance Market and the Critical Role Such Market Plays in Supporting Insurance in the United States* (December 2014), *https://www.treasury.gov/initiatives/fio/reports-and-notices/Documents/FIO%20-Reinsurance%20Report.pdf*.

Figure 21: Composition of General Account Asset Portfolio for the L&H Sector

	2012	2013	2014	2015	2016
Bonds	74.7%	74.7%	73.9%	73.8%	73.5%
Preferred Stocks	0.2%	0.2%	0.3%	0.3%	0.2%
Common Stocks	2.1%	2.1%	2.1%	2.0%	2.2%
Mortgage Loans	9.9%	10.1%	10.3%	10.9%	11.2%
Real Estate	0.6%	0.6%	0.6%	0.6%	0.6%
Contract Loans	3.7%	3.7%	3.6%	3.4%	3.3%
Derivatives	1.2%	1.1%	1.6%	1.5%	1.6%
Cash & Short Term Investments	3.1%	2.7%	2.8%	2.8%	2.6%
Other Investments	4.4%	4.7%	4.9%	4.7%	4.7%
Total Cash & Invested Assets	**100%**	**100%**	**100%**	**100%**	**100%**
Share of Total General Account Assets	**94.9%**	**94.7%**	**94.7%**	**94.7%**	**94.5%**
General Account Assets / Total Assets	63.6%	61.2%	61.3%	61.8%	62.3%
Separate Account Assets / Total Assets	36.4%	38.8%	38.7%	38.2%	37.7%

Source: SNL Financial

Nearly 95 percent of the general account asset portfolio at year-end 2016 was comprised of cash and invested assets, mirroring the sector's average since 2010. At year-end 2016, and on average each year over the post-crisis period, approximately three-quarters of the L&H sector's investment portfolio has consisted of bond holdings. Of total bonds, almost 97 percent have invariably been long-term – in line with the long-term nature of obligations assumed under life policies and contracts. This concentration reflects sound insurer risk management practices that match asset and liability durations with the aim of mitigating the impact of interest rate fluctuations on capital and surplus.

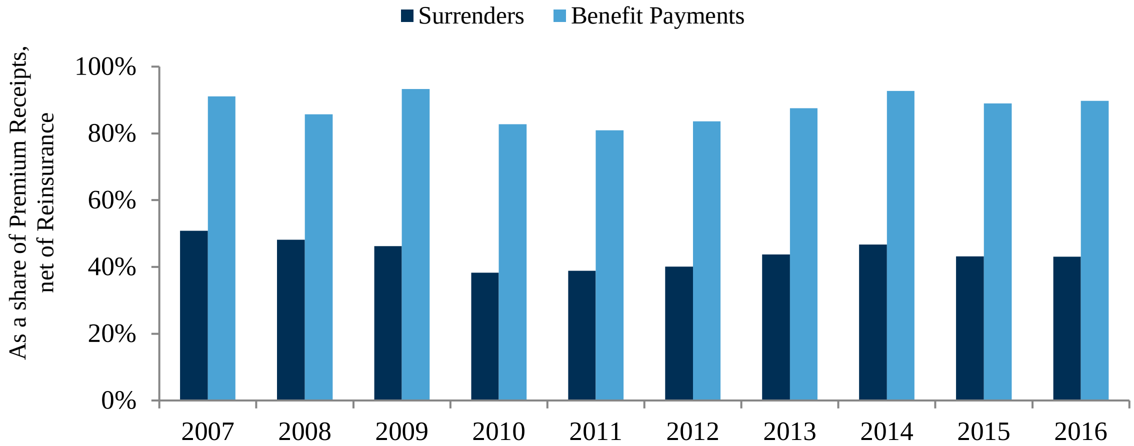
Mortgage loans remain the second largest investment class held by the L&H sector, averaging 10.2 percent of cash and invested assets annually in the post-crisis period.

While Figure 21 captures the details for the past five years, bond investments actually decreased by over 2 percentage points as a share of the L&H investment portfolio in the post-crisis period, falling to 73.5 percent of cash and invested assets at year-end 2016 from a high of 75.8 at year-end 2010. At the same time, the L&H sector raised its holdings of mortgage loans by close to 2 percentage points over the same period. This reallocation may be indicative of the impact of the low interest rate environment and the L&H sector's search for yield.

(c) Liquidity

Despite some weakening observed in the quality of the L&H sector's investment portfolio, the liquidity position in aggregate has remained sound, evidenced by positive cash flows from operations, growth in cash and invested assets, and a stable level of surrenders during the post-crisis period. Figure 22 below illustrates that the L&H sector's liquidity position has remained steady.

Figure 22: Cash Flows from Operations for the L&H Sector



Source: SNL Financial

A current liquidity ratio[35] that has averaged over 92 percent annually during the last seven years, and a ratio of surrenders to premium receipts that has not deviated beyond a high of 46.7 percent over that same period, have contributed toward maintaining liquidity levels. Benefit payments have comprised on average 86.6 percent of premiums collected each year in the post-crisis period. Surrenders were $265.1 billion in 2016 relative to $273.0 billion in 2015, while benefit and loss-related payments were $553.1 billion and $562.9 billion for the same years, respectively.

Cash and invested assets grew to $3.9 trillion at year-end 2016 from $3.7 trillion at year-end 2015, resulting in a ratio of general account liabilities to cash and invested assets of 96.1 percent at year-end 2016, slightly up from 95.8 percent at year-end 2015 and the post-crisis annual average of 95.9 percent. Bonds have steadily made up the bulk of cash and investments, totaling $2.9 trillion at year-end 2016 and $2.8 trillion at year-end 2015. Over 70 percent of long-term bond holdings were publicly traded at year-end 2016, compared to about 71 percent at the prior year-end. Just over 30 percent of the bond portfolio had maturities that ranged between 5 and 10 years in 2016, compared to 30.4 percent in 2015. Another 37.1 percent, or $1.1 trillion of bonds, had maturities of greater than 10 years as of year-end 2016, up slightly from 36.7 percent and $1.0 trillion as of year-end 2015 – more than half of which consisted of bonds with maturities in excess of 20 years at both points in time.

Some indications of weakening in the quality of the L&H sector's investment portfolio have been evident over the post-crisis period. As a share of capital and surplus, cash and short-term

[35] 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 common stock, 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.

investments have shown a continual decline from a post-crisis high of 32.6 percent at year-end 2012 to 26.6 percent at year-end 2016. The value of mortgage loans in foreclosure or past due by at least 90 days accounted for 0.24 percent of capital and surplus at year-end 2016, gradually rising each year from a post-crisis low of 0.07 percent at year-end 2013. The share of total bonds rated below investment grade has gradually increased, accounting for 6.1 percent and 5.9 percent of total bonds as of year-ends 2016 and 2015, respectively, up from 5.8 percent at year-end 2013. At year-end 2016, bonds near or in default increased sharply to $17.9 billion, a 31 percent jump from $13.6 billion at the prior year-end, and comprised 4.7 percent and 3.7 percent of capital and surplus at the same points in time, respectively.

Due to the 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. The L&H sector's affiliated holdings (including cash as well as invested assets) have gradually climbed in the post-crisis period, averaging an annual growth rate of 6.7 percent. Affiliated cash and invested assets of $167.7 billion as of year-end 2016 represented 44 percent of capital and surplus, up from $156.8 billion and 42.7 percent of capital as of year-end 2015. Affiliated investments consisted of 33 percent of common stock holdings at year-end 2016, while other investments[36] made up another 43.3 percent. By comparison, affiliated common stock and affiliated other investments made up 29.8 percent and 45.1 percent of total affiliated holdings, respectively, at year-end 2015.

These recent negative trends observed in liquidity are mitigated by the L&H sector's overall financial profile. Specifically, the value of mortgage loans in foreclosure or past due by at least 90 days accounted for 0.21 percent of the total value of mortgage loan holdings, while the value of mortgage loans in good standing has consistently made up more than 99 percent of the total value of the L&H loan portfolio. Bonds near or in default have continued to comprise less than 1.0 percent of aggregate bond holdings and their shares of capital and surplus have dropped from a high of 9.7 percent at year-end 2009. Affiliated cash and investments have averaged only 3.9 percent of total cash and invested assets annually over the post-crisis period. Finally, the bulk of the unaffiliated investment portfolio is aligned with the L&H sector's asset/liability matching philosophy, with long-term bond holdings representing the bulk of investments. Unaffiliated cash and invested assets were $3.7 trillion at year-end 2016, up by 5 percent from $3.5 trillion at year-end 2015. The ratio of unaffiliated investments to capital and surplus was at a multiple of 9.8 at year-end 2016, rising from 9.7 at year-end 2015, while the ratio of unaffiliated cash and invested assets to total general account liabilities has remained at a multiple of 1 since year-end 2009.

[36] "Other" investments include, but are not limited to: surplus notes, limited partnerships, joint ventures, hedge funds, private equity funds, and direct investments.

b. Property and Casualty Sector

Total P&C insurance premiums increased to yet another record level in 2016. Underwriting activities in 2016, however, failed to produce positive results for the first time since 2012, as the combined ratio[37] for the P&C sector increased significantly to approximately 101 percent from 98 percent in 2015. The increase in the combined ratio was driven by higher catastrophe losses and higher loss trends in both commercial and personal automobile lines of business. Net investment income and investment yield also decreased in 2016, with investment yield reaching new lows. The P&C sector's net income decreased for the second consecutive year, driven by underwriting losses. Despite the decline in net income, the P&C sector's policyholder surplus reached a new record level in 2016, and leverage increased slightly.

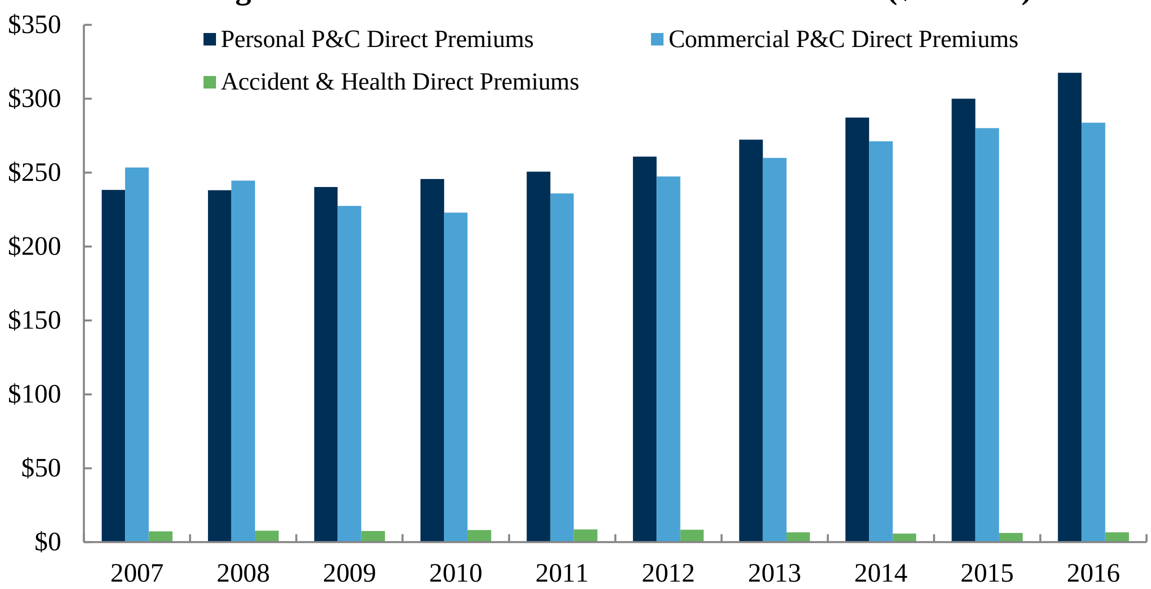
i. Performance

This section presents additional analysis of the financial performance of the P&C sector in 2016.

(a) Net Premiums Written

Figure 23 shows the level and composition of P&C sector direct premiums written by major lines of business, and Figure 24 shows the corresponding dollar values and a reconciliation to net premiums earned.

Figure 23: P&C Sector Direct Premiums Written ($ billions)



Source: SNL Financial

[37] The combined ratio is an accepted metric used to compare underwriting performance in the P&C sector; it is the sum of the loss ratio (incurred loss divided by premiums earned) and the expense ratio (incurred expenses divided by premiums written).

Figure 24: P&C Sector Premiums ($ thousands)

	2012	2013	2014	2015	2016
Personal P&C Direct Premiums	$ 260,931,593	$ 272,367,335	$ 287,272,384	$ 300,054,135	$ 317,604,443
Commercial P&C Direct Premiums	247,322,865	259,943,105	271,209,044	280,072,580	283,836,615
A&H Direct Premiums	8,424,278	6,701,202	5,766,660	6,142,327	6,544,767
Direct Premiums Written	**523,914,193**	**546,334,118**	**570,782,303**	**591,757,789**	**612,313,789**
Net Reinsurance Premiums	(62,759,609)	(64,406,185)	(67,958,293)	(71,247,200)	(78,643,034)
Net Premiums Written	**461,154,584**	**481,927,933**	**502,824,010**	**520,510,588**	**533,670,755**
Change in Unearned Premiums Reserve	7,927,935	9,853,047	9,093,095	8,400,413	4,866,400
Net Premiums Earned	**$ 453,226,649**	**$ 472,074,886**	**$ 493,730,916**	**$ 512,110,175**	**$ 528,804,355**

Source: SNL Financial

For 2016, total P&C sector net premiums written reached a record level at $534 billion, marking a 2.5 percent increase over the 2015 result. However, this growth slowed compared to year-over-year growth of 3.5 percent and 4.3 percent for the 2014 to 2015 and 2013 to 2014 periods, respectively. Direct premiums written for personal lines of business grew by 5.8 percent, while direct premiums written for commercial lines of business increased by 1.3 percent. Net reinsurance premiums ceded increased by 10.4 percent, but the dollar amount of this increase was small relative to the gain in personal lines premiums, and supported the growth in net premiums written. Modest economic growth in the United States and premium rate increases continued to drive overall premium growth, with private passenger auto liability and auto physical damage leading the way.[38]

(b) Underwriting Results

The combined ratio is a commonly accepted metric used to assess underwriting performance in the P&C sector. Figure 25 shows the P&C combined ratio and its components for the past several years.[39]

[38] "A.M. Best First Look – 4Qtr 2016 U.S. Property/Casualty Financial Results," *A.M. Best*, March 15, 2017, *http://www3.ambest.com/bestweek/DisplayBinary.aspx?TY=P&record_code=259693*.

[39] SNL Financial ratios include the policyholder dividend ratio for transparency because dividends represent a cash outlay.

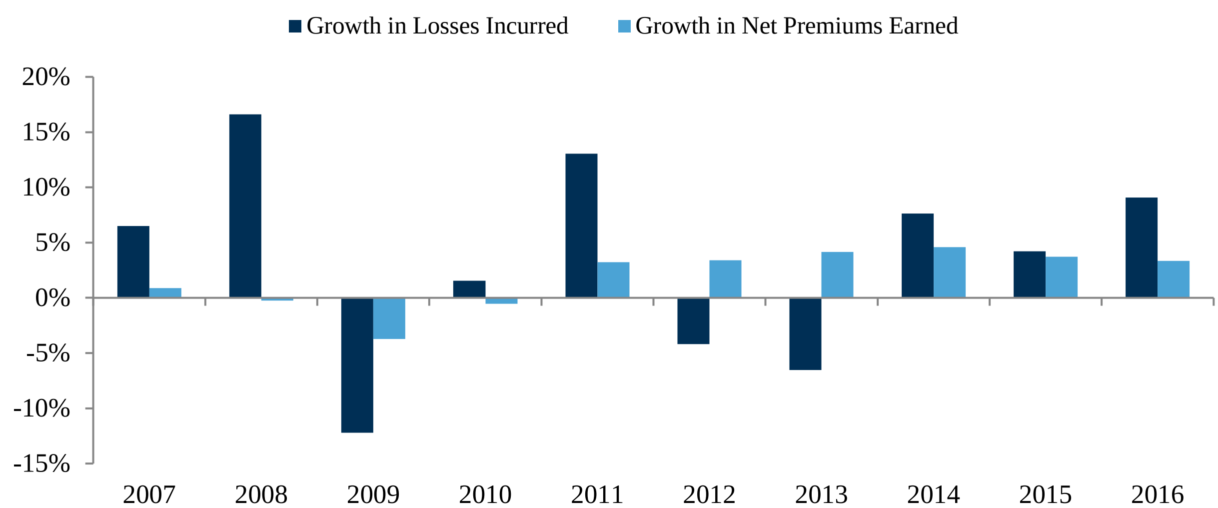
Figure 25: P&C Sector Operating Ratios

	2012	2013	2014	2015	2016
Loss Ratio	61.96%	55.60%	57.21%	57.48%	60.67%
Loss Adjustment Expense Ratio	12.39%	11.94%	11.82%	11.83%	11.61%
Loss and Loss Adjustment Expense Ratio	**74.35%**	**67.54%**	**69.04%**	**69.31%**	**72.28%**
Net Commissions Ratio	10.20%	10.24%	10.38%	10.55%	10.40%
Salaries & Benefits Ratio	8.41%	8.54%	8.14%	8.24%	8.32%
Tax, License, & Fees Ratio	2.62%	2.60%	2.51%	2.55%	2.51%
Administrative & Other Expense Ratio	6.99%	6.78%	6.55%	6.72%	6.68%
Expense Ratio	**28.22%**	**28.17%**	**27.58%**	**28.05%**	**27.91%**
Policyholder Dividend Ratio	0.59%	0.64%	0.60%	0.59%	0.56%
Combined Ratio	**103.15%**	**96.35%**	**97.21%**	**97.95%**	**100.74%**

Source: SNL Financial

The combined ratio for the P&C sector increased significantly to 100.7 percent in 2016, rising above 100 percent for the first time since 2012. 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. Notably higher catastrophe losses in 2016, along with higher loss trends in commercial and personal automobile insurance, drove the increase in the combined ratio.[40]
Figure 26 illustrates that the loss ratio – the largest component of the combined ratio – has also been affected by slower growth in net premiums earned over the last three years.

Figure 26: Recent Trends Underlying Loss Ratio



Source: SNL Financial

[40] A.M. Best, "4Qtr 2016 P&C Financial Results."

Box 1: The Effect of Auto Claims on P&C Insurer Performance

Rising costs associated with increased frequency and severity of automobile accidents have negatively affected P&C insurer performance in recent years. This rise in the frequency and severity of auto claims has aggravated a ten-year downward trend for auto insurers; since 2007, auto insurance losses and expenses have exceeded premiums.[41] Numerous insurers reported auto business losses in 2016, including State Farm Mutual Automobile Insurance Co. (which announced that it lost $7 billion on its auto insurance underwriting, contributing to a P&C pre-tax operating loss of $1.2 billion),[42] GEICO Corp.,[43] Travelers Companies Inc.,[44] Allstate Corp.,[45] and Hartford Financial Services Group Inc.[46] Analysts have described U.S. commercial auto insurance as a "chronically underperforming product segment."[47] Exacerbating these trends is a low interest rate environment, which constrains investment income for automobile insurers.[48]

The frequency of automobile insurance claims has been on the rise for several years, with collision claim frequency increasing by 2.6 percent between first quarter 2014 and first quarter 2016. Likewise, claim severity has also increased in recent years, growing 8.2 percent between 2014 and 2016.[49] Although car accidents have been decreasing for years, collision rates are now increasing – possibly due to factors such as lower gas prices and lower unemployment (leading to more drivers on the road), higher speed limits, and increases in distracted driving.[50] Increases in claim severity have been caused, at least in part, by increased healthcare costs and car repair bills attributable to expensive technological features in cars, such as bumper cameras, as well as

[41] Insurance Information Institute, *Personal Automobile Insurance: More Accidents, Larger Claims Drive Costs Higher* (October 2016), 4, *http://www.iii.org/sites/default/files/docs/pdf/auto_rates_wp_092716-62.pdf*.

[42] "State Farm Lost $7 Billion on Auto in 2016," *Insurance Journal*, March 1, 2017, *http://www.insurancejournal.com/news/national/2017/03/01/443224.htm*.

[43] Susanne Sclafane, "Berkshire Hathaway's Insurance Keeps Growing and Hiring, Despite Auto, Reinsurance Blips," *Insurance Journal*, February 27, 2017, *http://www.insurancejournal.com/news/national/2017/02/27/442908.htm*.

[44] Jordyn Holman, "Travelers' Q3 Results Hurt by Auto, Flood Claims," *Insurance Journal*, October 20, 2016, *http://www.insurancejournal.com/news/national/2016/10/20/429912.htm*.

[45] "Allstate Profit Up for 2016 Despite Higher Catastrophe Losses," *Insurance Journal*, February 3, 2017, *http://www.insurancejournal.com/news/national/2017/02/03/440883.htm*.

[46] Susanne Sclafane, "Hartford's Execs Make Plea to End 'Real Issue, Real Pain' of Distracted Driving," *Insurance Journal*, December 16, 2016, *http://www.insurancejournal.com/news/national/2016/12/16/435024.htm*.

[47] Andrew Simpson, "Commercial Auto Insurance Remains a Loser on the Whole: Fitch," *Insurance Journal*, May 3, 2016, *http://www.insurancejournal.com/news/national/2016/05/03/407213.htm*.

[48] Insurance Information Institute, *More Accidents, Larger Claims*, 14.

[49] Insurance Information Institute, *More Accidents, Larger Claims*, 3.

[50] Distracted driving led to 3,477 deaths in 2015 alone. National Highway Traffic Safety Administration, *Traffic Safety Facts (Research Note): Distracted Driving 2015* (March 2017), *https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/812_381_distracteddriving2015.pdf*. *See also* Sclafane, "Hartford's Execs Make Plea."

other new safety technologies that can raise safety and liability issues when not properly maintained by drivers.[51]

In response to these increased losses, insurers are increasing premiums for automobile insurance. Commercial auto rates have increased by 25 percent since 2012, far exceeding rate increases for the commercial market as a whole.[52] Personal lines auto insurance rates are also increasing.[53]

In addition, state legislators are acting to reduce one of the root causes of higher insurance premiums: increased claim costs from distracted driving. In 2017, at least eleven states and the District of Columbia advanced legislation to address distracted driving.[54]

(c) Investment Income

Net investment income for the P&C sector remained on a declining trend in 2016, decreasing by 2.7 percent to $47 billion. Commensurately, the net yield on invested assets dropped 14 basis points to 3.04 percent, marking the lowest net yield level in the past ten years. Figure 27 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 28 provides this data for the past five years.

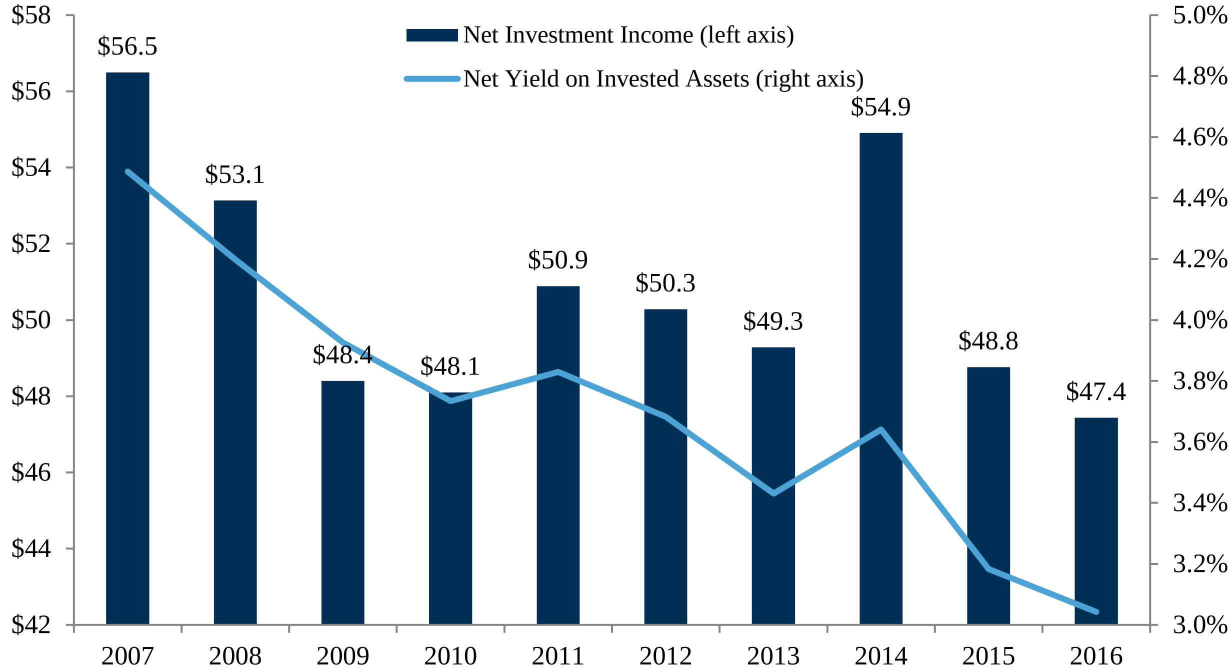
[51] Lisa Du and Sonali Basak, "Insurance Bills Rise as Texters Crash Cars," *Bloomberg Businessweek*, February 16, 2017, *https://www.bloomberg.com/news/articles/2017-02-16/insurance-bills-rise-as-texters-crash-cars*.

[52] Rob Lenihan, "Auto Rates Accelerate on Rising Accidents, Costs," *Business Insurance*, April 3, 2017, *http://www.businessinsurance.com/article/20170403/NEWS06/912312706/Auto-insurance-rates-accelerate-on-rising-accidents-higher-repair-costs*.

[53] Du and Basak, "Insurance Bills Rise."

[54] *See* Property Casualty Insurers Association of America, *2017 Legislation: Distracted Driving*, May 30, 2017, *http://www.pciaa.net/pciwebsite/common/page/attachment/70223*.

Figure 27: P&C Sector Annual Net Investment Income ($ billions) and Net Yield on Admitted Invested Assets



Source: SNL Financial

Figure 28: P&C Sector Investment Income ($ thousands) and Net Yield

	2012	2013	2014	2015	2016
Net Investment Income	$ 50,284,734	$ 49,280,948	$ 54,904,547	$ 48,765,011	$ 47,434,614
Total Cash & Investments	1,389,359,572	1,483,929,648	1,532,509,401	1,531,283,525	1,586,777,369
Net Yield on Invested Assets	**3.68%**	**3.43%**	**3.64%**	**3.18%**	**3.04%**

Source: SNL Financial

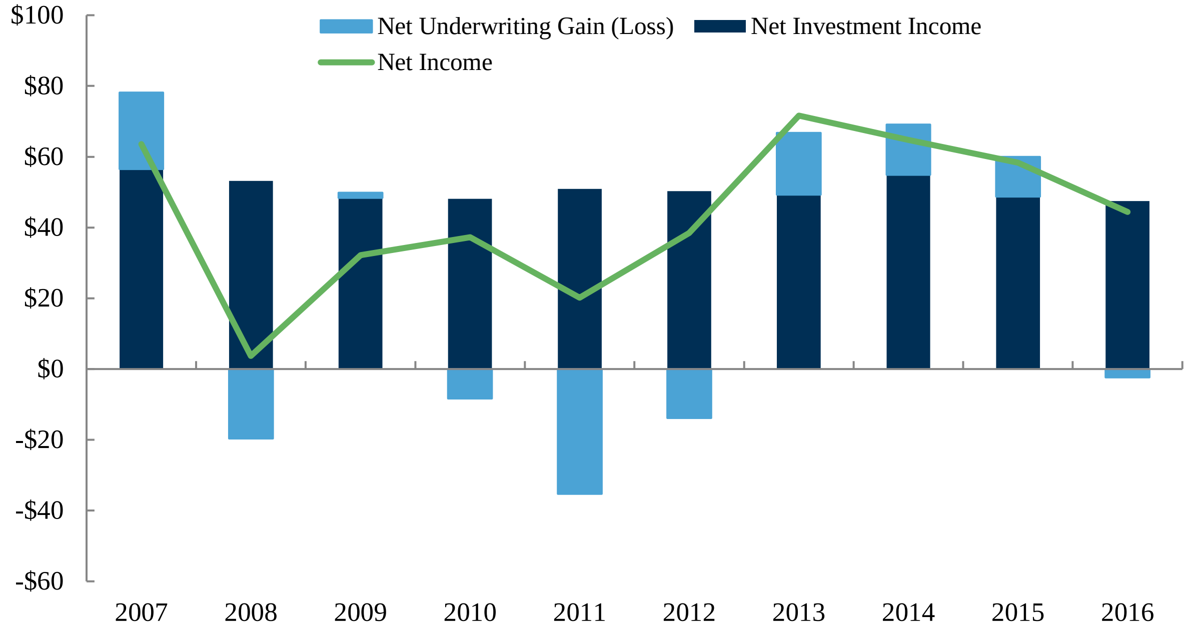
Realized capital gains and losses are not a component of net investment income, and are reported separately. P&C insurers are typically less dependent on net investment income to fund losses and expenses than are L&H insurers; net investment income accounted for 9 percent of total sector revenues in 2016 (compared to approximately 20 percent in the L&H sector).

Realized capital gains on investments also contributed to the P&C sector's profitability in 2016, although to a lesser extent than in the prior year. Over 2016, the P&C sector recorded net realized capital gains of $8 billion, which was 16 percent less than the 2015 level. Higher interest rates toward the end of the year contributed to the decrease in capital gains. This marked the second consecutive year of declining realized capital gains.

(d) Net Income

The P&C sector's net income decreased for the third consecutive year in 2016, dropping 24 percent to $44 billion from the $58 billion reported in 2015, as shown in Figure 29. Figure 30 provides a summary income statement for the P&C sector.

Figure 29: P&C Sector Net Income ($ billions)



Source: SNL Financial

Figure 30: P&C Sector Net Income ($ thousands)

	2012	2013	2014	2015	2016
Net Premiums Earned	$ 453,226,649	$ 472,074,886	$ 493,730,916	$ 512,110,175	$ 528,804,355
Losses and Loss Adjustment Expense Incurred	336,968,884	318,842,292	340,855,210	354,959,012	382,199,155
Other Underwriting Expense Incurred	129,816,139	136,211,881	139,137,758	145,136,436	147,859,261
Other Underwriting Deductions	321,969	(471,225)	(475,218)	857,268	1,064,057
Net Underwriting Gain (Loss)	**(13,878,425)**	**17,489,999**	**14,213,165**	**11,157,459**	**(2,318,118)**
Policyholder Dividends	2,655,149	3,017,264	2,943,412	3,016,579	2,943,624
Net Investment Income	50,284,734	49,280,948	54,904,547	48,765,011	47,434,614
Net Realized Capital Gains (Losses)	8,681,770	18,399,919	11,789,595	10,073,274	8,482,005
Finance Service Charges	3,287,835	3,403,200	3,271,709	3,333,008	3,452,608
All Other	(1,085,132)	(1,892,032)	(6,158,765)	(1,808,648)	(2,407,635)
Net Income After Capital Gain (Loss) Before Tax	**44,670,672**	**83,663,527**	**75,076,697**	**68,503,525**	**51,699,849**
Federal Income Tax	6,257,395	12,038,618	10,318,140	10,188,465	7,330,710
Net Income	**$ 38,415,881**	**$ 71,624,732**	**$ 64,757,509**	**$ 58,315,060**	**$ 44,369,139**

Source: SNL Financial

A $13 billion swing from an $11 billion underwriting gain in 2015 to a $2 billion underwriting loss in 2016 was the main cause of the decrease in net income. The decrease in investment results, including both investment income and realized capital gains (discussed above), also contributed to the overall decline in net income. Pre-tax operating income fell 25 percent, but a 28 percent drop in federal income taxes led to the end result of the 24 percent decrease in net income for 2016.

Figure 31 displays key measures of returns for the P&C sector.

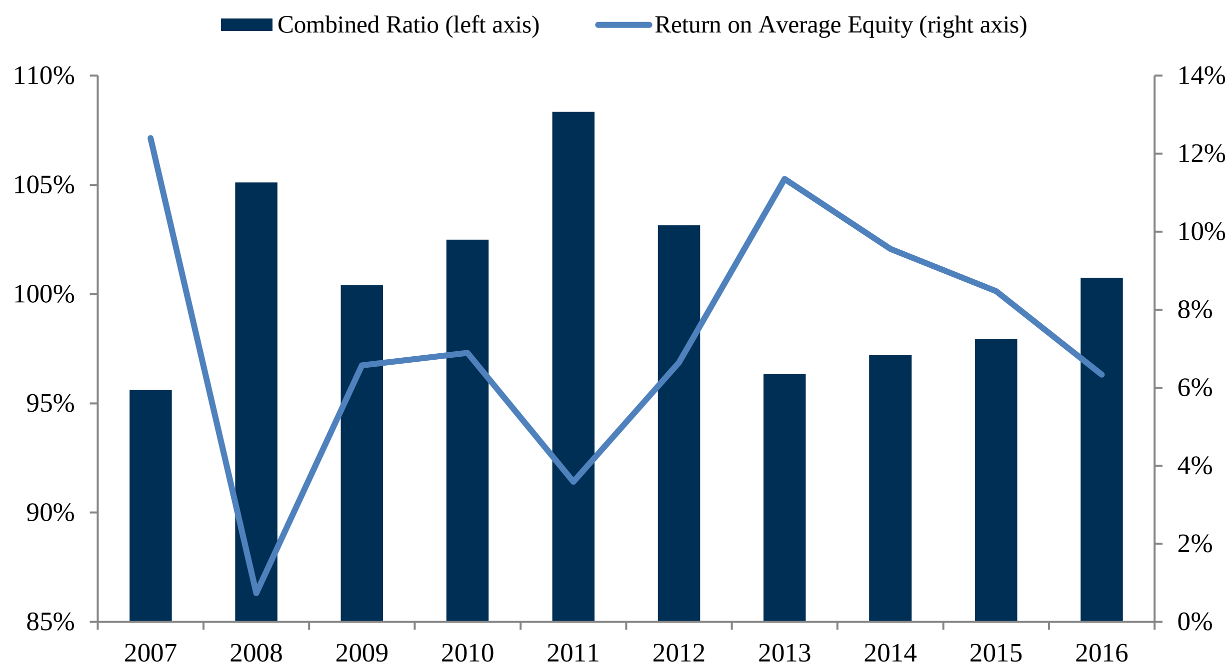
Figure 31: P&C Sector Operating Ratios

	2012	2013	2014	2015	2016
Pre-Tax Operating Margin	7.11%	12.48%	11.60%	10.39%	7.49%
Return on Average Equity (Capital & Surplus)	6.65%	11.35%	9.56%	8.47%	6.34%
Pre-Tax Operating Return on Average Equity	6.23%	10.34%	9.34%	8.49%	6.17%
Return on Average Assets	2.37%	4.23%	3.66%	3.24%	2.41%

Source: SNL Financial

Each of these metrics declined for a third consecutive year. The 2016 return on average equity of 6.3 percent was well below the recent ten-year average of 9.0 percent, and marked the second-lowest post-crisis measurement. As Figure 32 demonstrates, the combined ratio fell to a post-crisis low of 96.4 percent in 2013, contributing to a peak for return on average equity. Since then, however, the combined ratio has gradually trended upward, putting downward pressure on the sector's earnings and return on average equity.

Figure 32: Recent Pressure on Earnings



Source: SNL Financial

ii. Condition

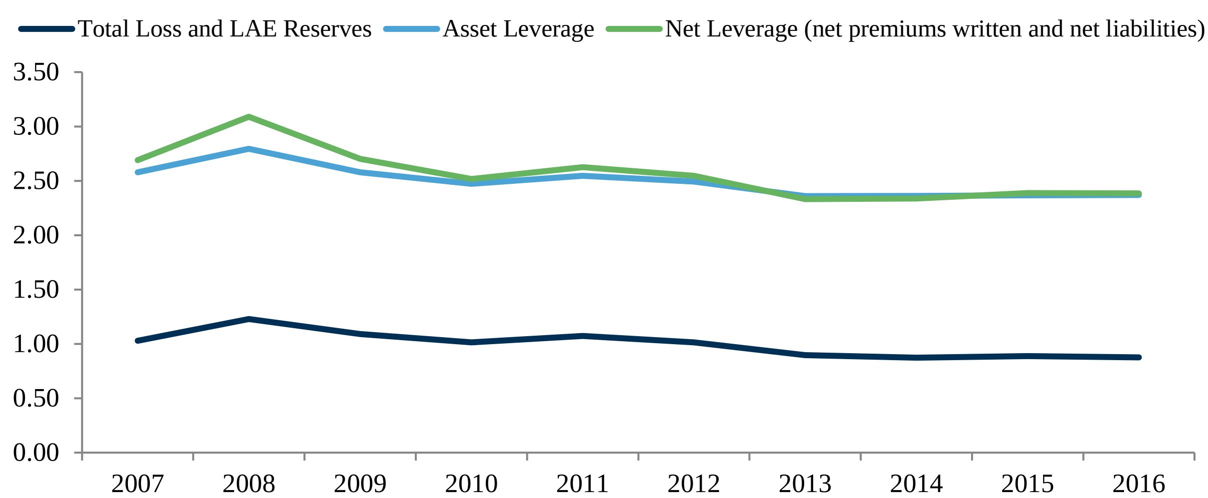
This section of the Report analyzes the financial condition of the P&C sector at the end of 2016, focusing on surplus, assets, and liquidity.

(a) Policyholder Surplus

The P&C insurance sector exhibited a healthy surplus position in 2016, with steady debt-to-equity and asset leverage ratios bolstering the balance sheet. Policyholder surplus was $712.3 billion at year-end 2016, up by 3.6 percent from $687.8 billion at year-end 2015, primarily due to an increase in net unrealized capital gains. The annual growth rate in surplus has averaged 4.7 percent over the post-crisis period. Removing capital infusions in the form of surplus notes still resulted in policyholder surplus growth of 4.9 percent on average every year during the post-crisis period. Like the L&H sector, organic surplus growth for the P&C sector can mainly be attributed to positive earnings and offset in part by stockholder dividends. Stockholder dividends of $28.5 billion and $38.5 billion were issued in 2016 and 2015, respectively. As a share of prior year-end policyholder surplus, stockholder dividends have averaged 5.2 percent annually since year-end 2009; less than the L&H sector average, due to the P&C sector's larger surplus base. Another factor that has generated capital for the P&C sector has been steady net realized capital gains year after year in the post-crisis period. As a share of prior year-end policyholder surplus, net realized capital gains have averaged about 2 percent annually.

As shown in Figure 33, and similar to observations above regarding the L&H sector, leverage ratios for the P&C sector have shown improvement over the post-crisis period, enhancing the sector's financial capacity. Though they measure different exposures, the asset and net leverage ratios began to converge in 2012 for the P&C sector, nearly mirroring each other in recent years.

Figure 33: Stable Leverage Enhancing Financial Capacity of P&C Sector (Multiple of Policyholder Surplus)



Source: SNL Financial

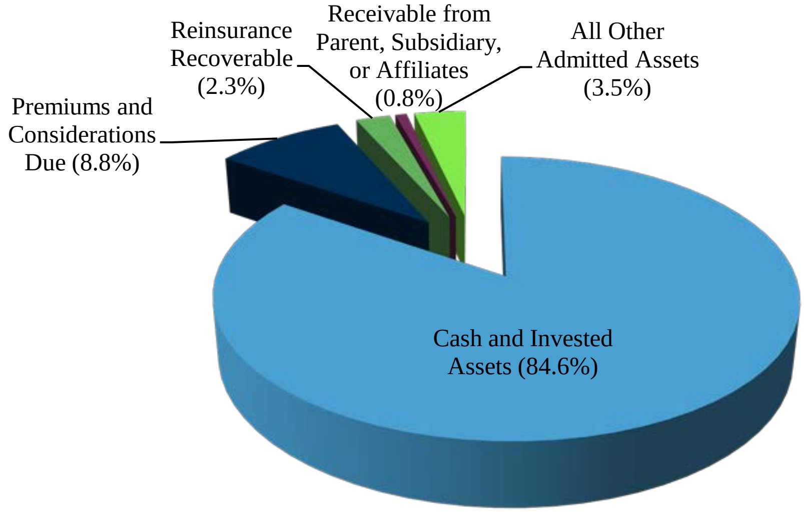
Balance sheet strength can be affected by the volatility and credit quality of the investment portfolio, reinsurance recoverables, and agents' balances. The P&C sector's asset leverage ratio, however, has held constant at 2.4 for the last four years, suggesting that the sector's exposure to investment, interest rate, and credit risks has not changed materially. The liabilities-to-equity ratio combined with the operating leverage ratio (together representing the net leverage ratio) has averaged 2.45 annually for the last seven years. Specifically, liabilities were 1.6 times surplus at year-end 2016 (not changing significantly since year-end 2013); for the prior three years of the post-crisis period, the liabilities-to-equity ratio stood at or below 1.84. Operating leverage for the sector has averaged less than one percent annually – that is, net premiums written have comprised less than 0.8 times policyholder surplus each year. A steady uptick in net reinsurance premiums, representing increased cessions of risk to reinsurers, has occurred over the post-crisis period, growing at an annual rate of 4.1 percent on average. Recently, ceded premiums were $79.4 billion and $71.2 billion in 2016 and 2015, respectively.

At year-end 2016, the ratio of loss and loss adjustment reserves to policyholder surplus was 0.88 and has averaged at a multiple of less than one annually over the post-crisis period. Catastrophe activity in 2016, however, has led the P&C sector to benefit less from favorable prior accident year loss reserves development compared to recent years. As a result, reserve strengthening efforts have continued for the last three years, with loss and loss adjustment reserves climbing to $624.7 billion at year-end 2016 from $610.1 billion and $601.5 billion at year-ends 2015 and 2014, respectively.

(b) Asset Base

Contributing to the strength of the P&C sector's capital position has been the growth and consistency of asset holdings. Total assets of $1.9 trillion as of year-end 2016, slightly up from $1.8 trillion as of the prior year-end, have grown at an annual rate of 3.3 percent on average, and have represented between 2.6 and 2.8 times policyholder surplus annually, since year-end 2009. The composition of the sector's asset portfolio has remained unwavering, with the bulk of holdings allocated to cash and investments. Figure 34 shows the sector's asset composition at year-end 2016.

Figure 34: 2016 Composition of Asset Portfolio for the P&C Sector



Source: SNL Financial

On average, more than 84 percent of total assets has consistently been made up of cash and invested assets each year during the post-crisis period, while premiums and considerations due have averaged in excess of 8 percent.

As Figure 35 details, over the last five years the P&C sector has generally allocated nearly two-thirds of its investment portfolio to bonds over the post-crisis period, while common stock holdings have averaged almost 20 percent of cash and invested assets.

Figure 35: Composition of Investment Portfolio for P&C Sector

	2012	2013	2014	2015	2016
Bonds	65.4%	62.5%	61.5%	62.1%	61.3%
Preferred Stocks	0.9%	0.8%	1.0%	0.9%	0.7%
Common Stocks	18.3%	21.4%	21.5%	21.1%	21.8%
Mortgage Loans	0.4%	0.5%	0.7%	0.8%	0.9%
Real Estate	0.7%	0.7%	0.7%	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	6.0%	5.6%	5.9%	5.8%	5.8%
Other Investments	8.3%	8.4%	8.7%	8.5%	8.6%
Total Cash & Invested Assets	**100%**	**100%**	**100%**	**100%**	**100%**

Source: SNL Financial

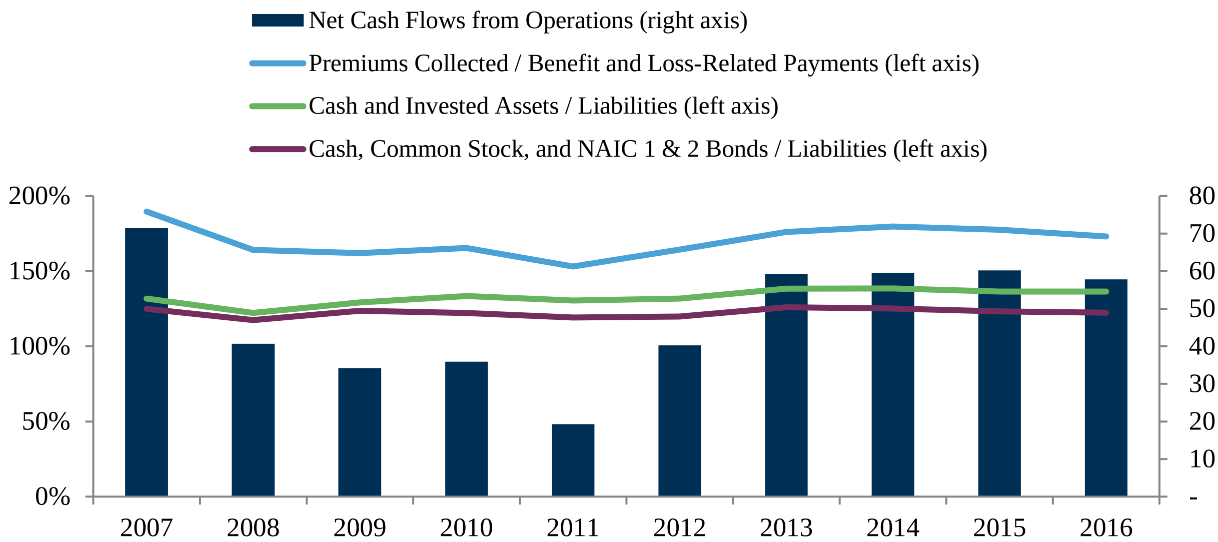
This composition of investment holdings aligns with the risk management practices in use by the P&C sector to address both the shorter-term obligations of some P&C lines (such as auto liability) as well as longer-tailed liabilities (such as medical malpractice and workers' compensation). Annual growth in total bonds has held steady, averaging 1.5 percent in the post-crisis period, whereas common stocks have grown by 7.7 percent on average. Total bonds were $1.0 trillion in 2016, not materially changed from 2015 and 2014, of which nearly 94 percent were comprised of long-term bonds with durations largely falling between one and ten years. With less than ten percent of total bonds on average comprised of private placements each year, bond holdings have largely been publicly-traded issuances. Of note is the shift from bonds to equities since year-end 2009. Bond holdings declined by over 7 percentage points, while common stock holdings rose by over 5 percentage points since year-end 2009. Figure 35 reflects this trend between 2012 and 2016. As with the L&H sector, the P&C sector demonstrated a shift in investment holdings, which can be attributable to both market performance and the search for yield. Specifically, the risk exposures highlighted by the financial crisis compelled insurers to increase their holdings of safe but low-yielding bonds. As funding gaps grew, pressure to close these exposures also grew, leading insurers to increase their equity holdings with the prospect of higher returns.

(c) Liquidity

The P&C sector has maintained a sound liquidity position during the post-crisis period, reflecting effective liquidity management of its business needs. The sector has sustained positive net cash flows from operations each consecutive year for the last decade, with recent net cash flows from operations of $57.5 billion and $60.2 billion in 2016 and 2015, respectively. On a cash basis, premium receipts have averaged an annual growth rate of 3.3 percent since year-end 2009 and have covered benefit and loss-related payments by 1.7 times on average. As Figure 36 illustrates, premiums collected, net of reinsurance, exceeded benefit and loss-related payments by more than 72 percent and 77 percent at year-end 2016 and year-end 2015, respectively.[55] Consistent net cash inflows from operations have contributed to the P&C sector's stability.

[55] 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.

Figure 36: P&C Sector Cash Flows from Operations



Source: SNL Financial

Positive net cash flows from operations have contributed to annual growth in cash and invested assets averaging 3.4 percent since year-end 2009, expanding the P&C sector's financial flexibility. In particular, the ratio of cash and invested assets to liabilities has averaged 135 percent each year post-crisis, while cash, cash equivalents, common stock, and investment-grade bonds have averaged 122.6 percent of liabilities. Furthermore, cash and invested assets have represented at least 2.2 times the level of aggregate policyholder surplus each year since year-end 2009.

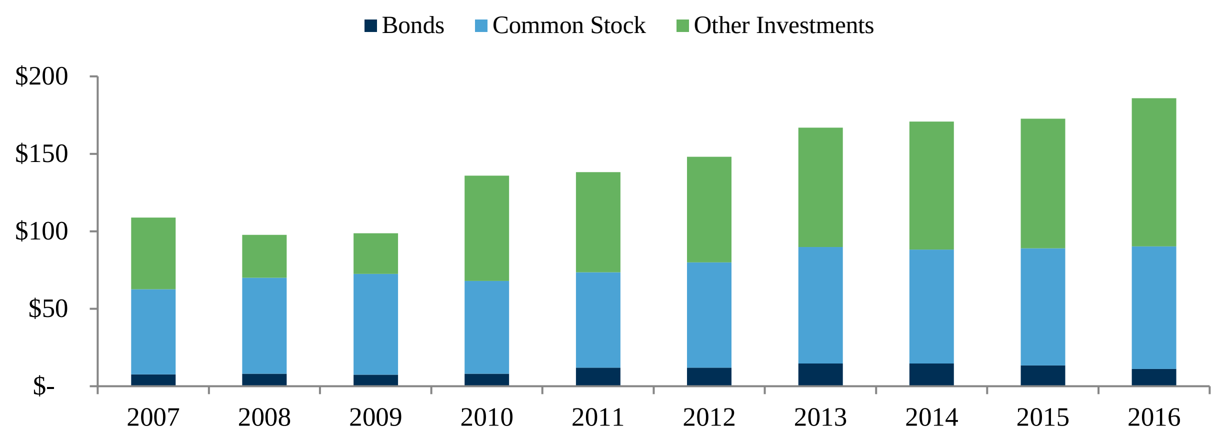
Although certain concentrations of risk exist within the sector's investment portfolio, the credit risk profile has remained relatively constant. Within the investment portfolio, the proportion of bonds rated below investment grade has remained below five percent of total bond holdings in each year during the post-crisis period, averaging 6.1 percent of policyholder surplus annually during that period. While the P&C sector nearly tripled its holdings of bonds near or in default to $11.0 billion at year-end 2012 from $4.1 billion at year-end 2011, the sector has gradually reduced that exposure in the last three years. Bonds near or in default totaled $10.5 billion and $10.6 billion at year-ends 2016 and 2015, respectively. Moreover, the bulk of total bond holdings (at least 86 percent) have consistently been issued by U.S. government entities in the last seven years – that is, the federal government, municipalities, and state governments. Finally, total mortgages have grown by over 19 percent on average each year in the post crisis-period, totaling $15.1 billion at year-end 2016; however, more than 95 percent of the mortgage loan portfolio has consistently remained in good standing during this period. Mortgages in foreclosure or past due by 90 days have dropped sharply from 1.64 percent of the loan portfolio at year-end 2009 to just 0.02 percent at year-end 2016.

Some risk exposures have surfaced within the P&C sector's investment portfolio. Specifically, municipal revenue and assessment bonds have ranged between 18 and 21 percent of total bond holdings in each of the last seven years. A revenue and assessment bond is a special type of municipal bond distinguished by its guarantee of repayment solely from revenues generated by a specified entity associated with the purpose of the bonds, rather than from a tax or other resources of the sponsoring government entity. Unlike general obligation bonds, only the revenues specified in the legal contract between the bond holder and bond issuer are required to be used for repayment of the principal and interest due on the revenue bonds. Other revenues, such as tax revenues and the general credit of the issuing agency, are not encumbered.

For revenue and assessment bonds, the sponsoring agency, and therefore the bond holders, are exposed to the credit risk of the business/project that is being funded by the bonds. The guarantee of repayment may become a risk exposure if the specific entity responsible for repayment becomes distressed. The P&C sector held revenue and assessment bonds of $187.9 billion at year-end 2016 (comprising 11.8 percent of cash and investments), compared to $188.1 billion and 12.3 percent at year-end 2015.

Growth in affiliated investments presents another potential liquidity risk exposure for the P&C sector. Affiliated cash and investments have been on the rise in the post-crisis period, representing 11.7 percent of total cash and invested assets and 26.1 percent of policyholder surplus at year-end 2016, up from 7.8 percent of cash and investments and 19.1 percent of policyholder surplus at year-end 2009. Figure 37 shows the growth and shift in the composition of affiliated investments over the post-crisis period.

Figure 37: P&C Sector's Affiliated Investments ($ billions)



Source: SNL Financial

Other types of investments have come to dominate affiliated holdings, more than doubling their share of total affiliated investments from year-end 2009 and surpassing common stock investments. As of year-end 2016, affiliated cash and invested assets were $185.9 billion, up 7.6 percent from $172.7 billion as of year-end 2015.

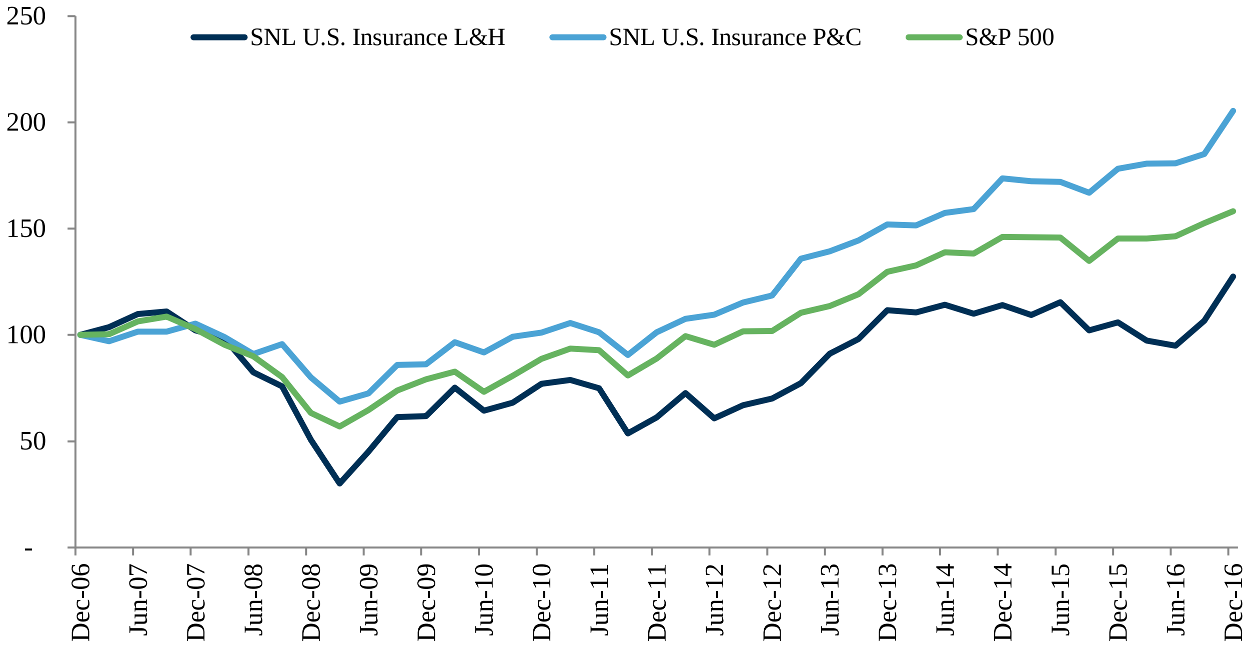
There are several factors that mitigate the sector's vulnerability to these risk exposures, should market conditions weaken. First, high quality bonds have made up the bulk of total bond holdings. Specifically, investment grade bonds have averaged more than 96 percent of total bonds and nearly two-thirds of cash and invested assets each year post-crisis. Second, investment grade bonds have continued to comprise 1.4 times policyholder surplus for the last four years. Likewise, affiliated investments have averaged only 11 percent of cash and invested assets each year during the post-crisis period. Of total unaffiliated cash and invested assets, bond holdings have averaged 70 percent of the investment portfolio annually over the same period, while unaffiliated common stocks have accounted for 16.7 percent on average. Finally, unaffiliated cash and invested assets have remained at least twice the level of policyholder surplus since year-end 2009.

2. 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, 2006 through December 31, 2016, the SNL Stock Price Index for the P&C sector outperformed the S&P 500, as shown in Figure 38. On the other hand, the L&H sector stock index underperformed the S&P 500 during this period.

Figure 38: Insurance Industry's Stock Indices vs. S&P 500



Source: SNL Financial

The P&C sector was generally a market performer leading up to the financial crisis, and has outperformed the S&P 500 since the crisis as well. The L&H sector slightly outperformed the S&P 500 leading up to the financial crisis, but has underperformed the broader market during and since the crisis. Since the end of 2006, the P&C stock index gained 105 percent and the

L&H stock index increased 27 percent; over the same period, the S&P 500 gained 58 percent. For 2016, both the P&C stock index and L&H stock index significantly outperformed the S&P 500, gaining 15 percent and 20 percent, respectively, compared to a 9 percent increase for the S&P 500 (Figure 39).

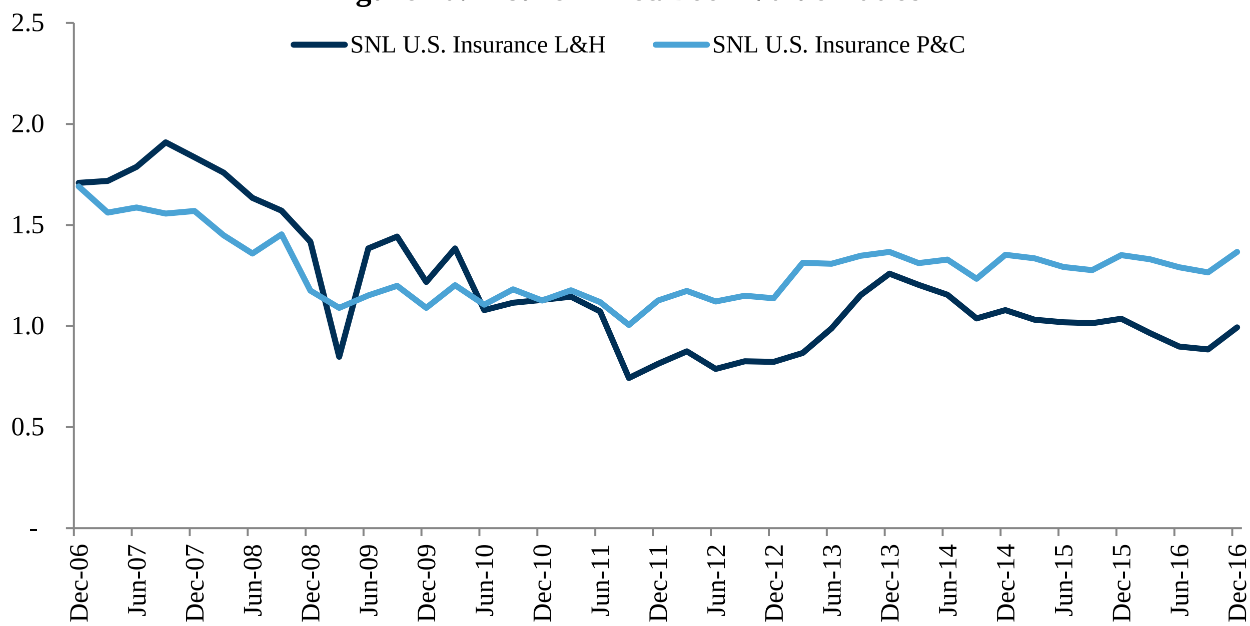
Figure 39: Insurance Sector Indexed Stock Indices vs. S&P 500

	Dec – 15	Mar - 16	Jun - 16	Sep - 16	Dec - 16	Qtr/Qtr	Yr/Yr
SNL L&H	106	97	95	107	127	19.50%	20.27%
SNL P&C	178	181	181	185	205	10.96%	15.28%
S&P 500	145	145	146	153	158	3.72%	8.83%

Source: SNL Financial

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 40 compares L&H and P&C sector price-to-book value ratios from year-end 2006 through year-end 2016.

Figure 40: Insurer Price/Book Value Ratios



Source: SNL Financial

The narrowing in the premium of L&H sector stocks compared to book value that began in 2014 continued through 2016, settling at a multiple of 0.99 times book value at the end of the year, down slightly from the 1.03 multiple at the end of 2015. P&C sector stocks saw premium over book value remain essentially flat, ending 2016 at a multiple of 1.37 times book value compared to a multiple of 1.35 times book value at the end of 2015.

3. Infrastructure Investments

Infrastructure may be defined as permanent systems that facilitate the orderly operation and development of the economy. Physical infrastructure includes systems relating to transportation, communication, water, sewer, and the generation and distribution of electrical power.[56] Such systems are generally capital intensive and tend to have high costs, but often provide stable cash flows to investors because of high barriers to entry.[57]

The need for investment in infrastructure has become a global policy issue. For a number of years, the OECD has reported on this issue to the G-20 Finance Ministers and Central Bank Governors.[58] Domestically, President Trump recently called for legislation that would produce a $1 trillion investment of public and private capital in the infrastructure of the United States,[59] and released a Plan to Rebuild America's Infrastructure.[60]

Infrastructure projects may be funded publicly, privately, or through public-private partnerships. In the United States, the main funding vehicle for infrastructure projects has historically been the municipal bond market.[61] More recently, and particularly for transportation and energy projects, as well as some water projects, private equity investment in infrastructure projects has increased.[62] The performance of privately-financed investment infrastructure is often related to the performance of the project or the strength of the established infrastructure companies.

Insurers are significant investors, and infrastructure may be particularly attractive to insurers as an investment class. As detailed above, the U.S. insurance industry, including the L&H (excluding separate accounts) and P&C sectors, had approximately $5.5 trillion in cash and invested assets at the end of 2016. Over the past 10 years, the net yield on invested assets achieved by insurers has been on a steady decline due to the persistent low interest rate environment. As a result, insurers have increasingly sought out higher-yielding alternatives. Infrastructure projects present appealing opportunities to insurers in view of the higher yields and longer durations that may improve profitability and asset-liability management, particularly

---

[56] *See, e.g.*, Oliver Wyman, "Infrastructure as an Asset Class" (presentation, FACI, Washington, DC, May 11, 2017), *https://www.treasury.gov/initiatives/fio/Documents/3d-Oliver_Wyman_Infrastructure.pdf*.

[57] *See, e.g.*, Wyman, "Infrastructure as an Asset Class."

[58] *See, e.g.*, OECD, *Infrastructure Financing Instruments and Incentives* (2015), *http://www.oecd.org/finance/private-pensions/Infrastructure-Financing-Instruments-and-Incentives.pdf*.

[59] *See* The White House, "President Trump is Working to Rebuild our Nation's Infrastructure," news release, February 28, 2017, *https://www.whitehouse.gov/the-press-office/2017/02/28/president-trump-working-rebuild-our-nations-infrastructure*.

[60] "President Trump's Plan to Rebuild America's Infrastructure," *The White House*, June 8, 2017, *https://www.whitehouse.gov/blog/2017/06/08/president-trumps-plan-rebuild-americas-infrastructure*.

[61] *See, e.g.*, Wyman, "Infrastructure as an Asset Class."

[62] Brian Chappatta, "Obama Proposes New Muni Bonds for Public-Private Investments," *Bloomberg Business*, January 16, 2015, *https://www.bloomberg.com/amp/news/articles/2015-01-16/obama-proposes-new-muni-bonds-for-public-private-infrastructure*.

for life insurers.[63] For example, when TIAA explained its infrastructure strategy to Treasury's FACI, it noted that it had an infrastructure and energy portfolio of about $13 billion.[64] At the same FACI meeting, MetLife noted that it managed $43.7 billion in infrastructure debt investments out of its $558.9 billion in combined managed assets.[65] Infrastructure investments are also attractive to P&C insurers, which are historically among the largest investors in municipal bonds, representing 10 percent of the $3.8 trillion market.[66]

Other global jurisdictions have considered whether infrastructure investments deserve distinct treatment under their regulatory regimes. In June 2016, for example, the European Insurance and Occupational Pensions Authority (EIOPA) published Technical Advice to the European Commission in which EIOPA suggested that high quality infrastructure investments should be treated differently than other equity investments from a regulatory capital requirement perspective. [67] Specifically, EIOPA's advice called for reduced risk charges for such investments.

In the United States, the NAIC is in the early stages of discussing and investigating the possibility of different, and incentivized, treatment for equity infrastructure investments by insurers.[68]

4. 2017 Insurance Market Outlook

Full-year 2017 industry results will be reviewed in FIO's 2018 Annual Report on the Insurance Industry. Based on financial results reported by insurers in the first six months of 2017, the outlook for the U.S. insurance industry appears stable for the rest of 2017. The P&C sector's third quarter 2017 financial performance, however, may be impacted by Hurricanes Harvey, Irma, and Maria. In addition, interest rates are expected to continue to place pressure on insurer margins in the near term, as indicated by the trajectory of investment yields during the first half of the year.

[63] Swiss Re, *Underwriting the U.S. Infrastructure Gap* (March 21, 2017), 9, *http://media.swissre.com/documents/Underwriting_the_US_infrastructure_gap.pdf*.

[64] TIAA, "Federal Insurance Office Federal Advisory Committee on Insurance Infrastructure Investments" (presentation, FACI, Washington, DC, May 11, 2017), *https://www.treasury.gov/initiatives/fio/Documents/3a-TIAA_ACLI_Infrastructure.pdf*.

[65] MetLife, "Insurance and Infrastructure Investing" (presentation, FACI, Washington, DC, May 11, 2017), *https://www.treasury.gov/initiatives/fio/Documents/3b-MetLife_Infrastructure.pdf*.

[66] Sonali Basak, Romy Varghese, and Lisa Du, "Insurers Caught in Municipal Bond Slump While Awaiting Trump Tax Plan," *Insurance Journal*, February 28, 2017, *http://www.insurancejournal.com/news/national/2017/02/28/443053.htm*.

[67] EIOPA, *Final Report on Consultation Paper No. 16/004 on the Request to EIOPA for Further Technical Advice on the Identification and Calibration of Other Infrastructure Investment Risk Categories, i.e. Infrastructure Corporates* (June 30, 2016), *https://eiopa.europa.eu/Publications/Consultations/EIOPA-16-490_Final-Report_advice_infrastructure_corporates.pdf*.

[68] NAIC, *Valuation of Securities (E) Task Force Special Session: Infrastructure Investment (Agenda)* (August 28, 2016), *http://www.naic.org/meetings1608/committees_e_vos_ssi_2016_summer_nm_agenda.pdf*.

As policyholder surplus reached an all-time high of $714.6 billion at the end of the second quarter of 2017, the P&C sector was challenged by excess capacity. Return on average equity through the second quarter of 2017 continued downward to 4.52 percent, reaching its lowest level in the last five years, as P&C insurers continued to compete with new and existing market players.[69] As of September 2017, the P&C sector's robust capital position was expected to help cushion insurers from losses arising from Hurricanes Harvey, Irma, and Maria. For Hurricane Harvey, early projections of total insured losses were approximately $10 billion to $25 billion, excluding losses under the NFIP.[70] For Hurricane Irma, early projections of total insured losses were approximately $20 billion to $40 billion, again excluding NFIP losses.[71] At the time of publication, it was too early to provide an estimate of private sector insured losses arising from Hurricane Maria.

In addition to the ongoing implications of low interest rates, the financial performance of life and annuity insurers are expected to continue to be affected by moderate to modest economic growth[72] and flat sales through the last half of 2017. During the first half of 2017, the L&H sector experienced reduced net premium growth compared to the same period a year ago. Net premiums, annuities, and considerations at the end of the current second quarter represented 47 percent of full-year 2016 levels, an indication that premium growth may decelerate farther. While slowing premium growth is expected to place pressure on the sector's profitability in 2017, healthy real estate conditions, largely driven by an improving labor market, and a steady U.S. corporate bond market will likely contribute to limiting credit-related losses, easing the strain to earnings.

B. Capital Markets Activity

Generally favorable equity market conditions have afforded the U.S. domestic insurance industry continued access to new funds from capital markets. There were 22 insurance-related equity offerings completed during 2016, with an aggregate value of $5.4 billion.[73] This level of activity was slightly lower in terms of both the number of deals and the aggregate value compared to 2015 (27 offerings valued at $5.9 billion). Only two of these transactions (valued at $1.3 billion)

---

[69] Insurance industry P&C and L&H financial data for 2017 was obtained from SNL on September 12, 2017.

[70] "Harvey Industry Loss Seen Up to $25bn (Ex-NFIP) by Morgan Stanley," *Artemis*, September 1, 2017, *http://www.artemis.bm/blog/2017/09/01/harvey-industry-loss-seen-up-to-25bn-ex-nfip-by-morgan-stanley/*. *See also* Box 6 below (Hurricane Harvey).

[71] AIR Worldwide, "AIR Worldwide Updates Estimates of Insured Losses for Hurricane Irma's Impacts in the United States," news release, September 11, 2017, *http://www.air-worldwide.com/Press-Releases/AIR-Worldwide-Updates-Estimates-of-Insured-Losses-for-Hurricane-Irma%E2%80%99s-Impacts-in-the-United-States/*.

[72] Federal Reserve, *The Beige Book: Summary of Commentary on Current Economic Conditions By Federal Reserve District* (August 2017), 1, *https://www.federalreserve.gov/monetarypolicy/beige-book-default.htm*.

[73] All data in this section sourced from SNL Financial, as collected and calculated by FIO. This data includes Bermuda-based holding companies for which primary insurance underwriting subsidiaries are domiciled in the United States.

were initial public offerings, but they marked a significant increase from the one initial public offering valued at $35 million that occurred in 2015. Private equity investors continued to cash out investments in the insurance industry, as seven of the equity offerings in 2016 included some level of selling of interests by private equity investors; this compares to 12 such transactions in 2015.

Debt markets remained the preferred source of additional capital for insurers in 2016. During the year, U.S. insurers raised an aggregate $64.7 billion[74] in 96 separate debt offerings, continuing to benefit, in that respect, from the historically low interest rate environment. Debt issuance increased significantly from the $46.1 billion raised in 89 offerings in 2015. Berkshire Hathaway, Inc. (combined with its finance subsidiary) was the largest issuer of debt in the insurance sector, raising $12.6 billion (20 percent of the industry total) through 14 separate offerings. The next largest issuer of debt was Aetna, Inc. which raised $12.3 billion, or 19 percent of the industry total, through eight separate offerings. The remainder of the top five issuers of debt in 2016 included Centene Corp. ($7.9 billion), New York Life Insurance Company ($3.5 billion), and American International Group ($3.5 billion). Together, the funds raised by the top five issuers of debt accounted for 61 percent of the 2016 industry total. The largest single offering during 2016 was a $2.8 billion issue sold by Aetna, Inc.

1. Mergers & Acquisitions of U.S. Insurers

The remainder of this section outlines 2016 insurance M&A activity, and describes certain state and federal restrictions on foreign acquisitions of insurers.

Over the course of 2016, there were 91 M&A transactions announced involving U.S. insurance companies, with a total value of $21.6 billion.[75] While the number of deals increased over the 2015 level (77 transactions in 2015), the total value was significantly lower ($143 billion in 2015) due to several major deals that occurred in 2015.[76] The level of 2016 M&A activity was more consistent with recent experience other than 2015. Almost all of the largest M&A deals announced in 2016 were in specialty lines of insurance, rather than more "traditional" L&H or P&C business lines.

[74] Foreign currency exchange rates applied at date of announcement. "Currencies," Bloomberg Markets, *https://www.bloomberg.com/markets/currencies*.

[75] Transactions were announced between January 1, 2016 and December 31, 2016, and were either completed during the year or remained pending at the end of 2016. All information related to M&A activity obtained from SNL Financial, except where otherwise noted.

[76] The acquisitions of Chubb Corp. by ACE Limited ($28.2 billion), Humana, Inc. by Aetna, Inc. ($35.5 billion), and Cigna Corp. by Anthem, Inc. ($54.2 billion) accounted for the majority of the total transaction value in 2015.

Figure 41: 2016 Largest Completed Mergers and Acquisitions

Rank	Acquiring Company	Acquired Company	Transaction Value
1	ACE Limited	Chubb Corporation	$ 28.3 billion
2	Centene Corporation	Health Net, Inc.	6.3 billion
3	Exor SpA	PartnerRe Ltd.	6.1 billion
4	Meiji Yasuda Life Insurance Company	StanCorp Financial Group, Inc.	5.1 billion
5	Sumitomo Life Insurance Company	Symetra Financial Corporation	3.7 billion

Source: SNL Financial

2. Regulatory Review of Foreign Acquisitions

Recent years have seen an increase in M&A activity involving U.S. insurers and foreign companies. Such transactions are subject to approval by state insurance regulators, and also may be subject to a federal national security review.

State insurance regulators review all transactions involving insurance entities licensed in their states. State laws consistent with the NAIC Model Insurance Holding Company System Regulatory Act provide state insurance regulators with the authority and tools to review all licensed entity transactions, including those involving foreign purchase of licensed entities.[77] Any person or entity that seeks to acquire control of a U.S. insurer is required to file a Pre-Acquisition Notice (Form A) under oath or affirmation with the insurance regulatory authority in the target's state of domicile.[78] The acquisition cannot be completed until the state insurance regulator has approved the transaction. The regulator may disapprove a proposed acquisition if, for example: the regulator determines that the acquiring parties lack sufficient competence, experience, and integrity to successfully manage the insurer; the acquiring parties' plans for the insurer are unfair or prejudicial to consumers; the acquisition might jeopardize the insurer's financial condition; or other circumstances exist such that the transaction may not be in the best interests of consumers, owners, or the public.[79] In addition, more than half of the states have laws prohibiting direct or indirect foreign government ownership of insurers operating in their states.[80]

The foreign acquisition of a U.S. insurer also may be subject to review by the Committee on Foreign Investment in the United States (CFIUS) to evaluate the transaction's effect on national security.[81] CFIUS is a federal interagency committee chaired by the Secretary which is

---

[77] Model Insurance Holding Company System Regulatory Act (NAIC January 2015), http://www.naic.org/store/free/MDL-440.pdf.

[78] *See, e.g.*, Model Insurance Holding Company System Regulatory Act § 3(A)(3).

[79] Model Insurance Holding Company System Regulatory Act § 3(D).

[80] *See, e.g.*, Ala. Code § 27-3-4(4) (2017); Cal. Ins. Code § 699.5 (West 2017); N.C. Gen. Stat. Ann. § 58-16-20 (West 2017).

[81] *See* Defense Production Act of 1950, 50 U.S.C. § 4565 (2015); Foreign Investment in the United States, Exec. Order No. 11,858, 31 C.F.R. pt. 800 (2016).

authorized to review transactions that could result in a foreign person's control of a U.S. business. Notification to CFIUS is voluntary but, in the absence of a voluntary notification, CFIUS may initiate its own review, even after a transaction closes. If CFIUS finds that a transaction does not present any national security risks – or that other provisions of law adequately address the risks – it informs the parties in writing. If a transaction presents national security risks and other provisions of law do not provide adequate authority to address the risks, then CFIUS may enter into an agreement with, or impose conditions on, the involved parties to mitigate such risks, or may refer the case to the President for action.[82] Information filed with CFIUS may generally not be made public and is not subject to Freedom of Information Act requests.[83]

[82] "Committee on Foreign Investments in U.S.: Process Overview," Treasury, December 1, 2010, *https://www.treasury.gov/resource-center/international/foreign-investment/Pages/cfius-overview.aspx*.

[83] *See* Defense Production Act of 1950 § 4565(c); 31 C.F.R. § 800.702.

IV. DOMESTIC REGULATORY AND MARKET DEVELOPMENTS

This section of the Report provides an overview of certain domestic regulatory and market developments in the insurance sector, including with respect to (1) cyber insurance and insurance sector cybersecurity; (2) insurance industry innovation and technology; (3) natural hazards and insurance; (4) the Financial Stability Oversight Council; (5) TRIP; (6) the DOL Fiduciary Rule; (7) LTCI; and (8) additional state-level regulatory developments concerning capital, life insurance reserving requirements, unclaimed life insurance policy benefits, the state adoption of model laws, and other NAIC-related activities.

A. The Cyber Insurance Market and Insurance Sector Cybersecurity

Cyber risks present challenges and opportunities for the insurance sector, from both business and operational perspectives. From a business perspective, the market for cyber insurance products continues to grow, leading to additional focus by regulators. From an operational perspective, insurers and regulators are developing improved approaches to address cyber risk. Both cyber insurance and cybersecurity in the insurance sector are discussed below.

1. The Cyber Insurance Market

Cyber insurance refers to a broad range of insurance products that cover risks arising "from the use of electronic data and its transmission, including technology tools such as the internet and telecommunications networks," as well as "physical damage that can be caused by cyber attacks, fraud committed by misuse of data, any liability arising from data storage, and the availability, integrity and confidentiality of electronic information."[84] A variety of insurance products may provide coverage for cyber risks, including standalone policies and policy endorsements. By one measure, 19 different categories of explicit cyber risk coverages are available in the insurance market.[85] These products often provide policyholders with access to pre-claim risk mitigation and post-claim incident response services,[86] which insurers offer through partnerships with cybersecurity firms.[87] In addition to coverages under specialized products, insurers also may have exposure to cyber-related losses under traditional P&C policies – such as commercial general liability policies – that do not explicitly mention cyber risk, even to exclude it. Such exposure is called "silent" cyber risk.[88]

[84] CRO Forum, *Cyber Resilience: The Cyber Risk Challenge and the Role of Insurance* (December 2014), 5, https://www.thecroforum.org/wp-content/uploads/2015/01/Cyber-Risk-Paper-version-24-1.pdf.

[85] Cambridge Centre for Risk Studies and Risk Management Solutions, Inc., *Managing Cyber Insurance Accumulation Risk* (February 2016), 10, http://static.rms.com/email/documents/managing-cyber-insurance-accumulation-risk-rms-crs-jan2016.pdf.

[86] Peter Westerman, "Cyber Insurance Claims: What Happens When a Breach Occurs," *PropertyCasualty360*, June 22, 2017, http://www.propertycasualty360.com/2017/06/22/cyber-insurance-claims-what-happens-when-a-breach.

[87] Sonali Basak, "How AIG Is Using Cyber Intelligence to Protect Property from Cyber Attacks," *Insurance Journal*, July 22, 2015, http://www.insurancejournal.com/news/national/2015/07/22/375991.htm.

[88] James Evans and Judy Selby, "Urgent Need on 'Silent' Cyber Risks," *Insurance Thought Leadership*, January 4, 2017, http://insurancethoughtleadership.com/urgent-need-on-silent-cyber-risks/.

Box 2: Ransomware

Ransomware is a form of cyber extortion used by cyber criminals that employs malicious software ("malware") to deny access to systems or data until a ransom is paid.[89] In 2016, more than 4,000 ransomware infections typically occurred on a daily basis – more than a 300 percent increase over 2015.[90] Ransomware increased from the 22nd most common variety of malware as reported in 2014 to the 5th most common in 2017, and accounted for 72 percent of malware incidents in the healthcare industry in 2016.[91] This increase has been fueled by the sale of relatively inexpensive ransomware "kits" that make it easy for criminals to engage in such cyber extortion.[92] Ransomware has increasingly shown the potential for significant losses, with as much as $209 million lost in the first quarter of 2016 alone.[93] In May 2017, hundreds of thousands of computers in at least 150 countries were affected by ransomware known as "WannaCry."[94] Some have estimated that financial losses related to WannaCry will reach $4 billion.[95]

This growing risk can be managed in part through insurance solutions, yet as with other forms of cyber insurance, policy language regarding cyber extortion coverage varies.[96] Cyber extortion policies often have consent requirements, which require a policyholder to obtain insurer approval prior to paying a ransom or incurring other costs.[97] However, insurers also provide services to help policyholders prevent cyber extortion, such as performing threat assessments and sharing intelligence, identifying and repairing weaknesses that make organizations vulnerable to ransomware, and building relationships with vendors that can immediately respond to an incident.[98]

---

[89] U.S. Department of Homeland Security (DHS), Department of Justice (DOJ), and Department of Health and Human Services (HHS), *Ransomware: What Is It and What to Do About It*, https://www.justice.gov/criminal-ccips/file/872766/download.

[90] DOJ, et al., *How to Protect Your Networks from Ransomware* (2016), https://www.justice.gov/criminal-ccips/file/872771/download.

[91] Verizon, *2017 Data Breach Investigation Report* (April 2017), 23, 35, http://www.verizonenterprise.com/verizon-insights-lab/dbir/2017/.

[92] Alastair Sharp, "Hackers' Ransom Demands Rise as Victims Keep Paying: Symantec," *Insurance Journal*, April 27, 2017, http://www.insurancejournal.com/news/international/2017/04/27/449147.htm.

[93] SonicWall, *2017 Annual Threat Report* (2017), 10, https://www.sonicwall.com/en-us/lp/2017-sonicwall-annual-threat-report.

[94] Anick Jesdanun, Jill Lawless, and Aritz Parra, "Dozens of Countries Hit by Huge Cyberextortion Attack," *Associated Press*, May 13, 2017, https://www.apnews.com/e8402f2faf934f7ab5419d4961d3dafe.

[95] Jonathan Berr, "'WannaCry' Ransomware Attack Losses Could Reach $4 Billion," *CBS Moneywatch*, May 16, 2017, http://www.cbsnews.com/news/wannacry-ransomware-attacks-wannacry-virus-losses/.

[96] James S. Carter, "The Ins and Outs of Cyber Extortion Insurance Coverage," *Risk Management*, December 1, 2016, http://www.rmmagazine.com/2016/12/01/the-ins-and-outs-of-cyber-extortion-insurance-coverage/.

[97] Carter, "Cyber Extortion Insurance Coverage."

[98] William Kelly, "Move, Countermove: The Best Way to Fight Ransomware," *PropertyCasualty360.com*, May 1, 2017, http://www.propertycasualty360.com/2017/05/01/move-countermovethe-best-way-to-fight-ransomware.

Access to cyber extortion coverage highlights the important question of whether victims should pay such ransoms in the first place. The Department of Justice, Department of Homeland Security, and Department of Health & Human Services have stated that the risks of paying ransom to a cyber extortionist include:

(1) paying a ransom does not guarantee renewed access to systems or data;
(2) some victims who have paid a ransom have reported being targeted again by the same or different cyber criminals;
(3) some victims have reported that the payment of a ransom has led only to demands for increased amounts in order to regain access to systems or data; and
(4) paying ransom creates a moral hazard that encourages the ransomware business model.[99]

Globally, the cyber insurance market reached an estimated $3 billion to $4 billion in gross premiums in 2016.[100] Demand for cyber insurance products has been growing,[101] and significant future growth is expected. Studies have estimated that the global market will generate $14 billion in premium by 2022,[102] and will reach $20 billion by 2025.[103] While such projections should be viewed cautiously,[104] this predicted growth will likely be driven in part by new demand from outside of the United States, which accounts for approximately 90 percent of the market.[105] In particular, the passage of the General Data Protection Regulation in the EU,[106]

---

[99] DHS, DOJ, and HHS, *Ransomware: What Is It.*

[100] Rob Lenihan, "Cyber Insurance Market to See Rapid Growth Through 2022," *Business Insurance*, December 7, 2016, *http://www.businessinsurance.com/article/20161207/NEWS06/912310865/Cyber-insurance-market-to-grow-says-Allied-Market-Research*; Richard S. Betterley, *Cyber/Privacy Insurance Market Survey – 2017: Executive Summary*, The Betterley Report (June 2017), *https://www.irmi.com/online/betterley-report-free/cyber-privacy-media-liability-summary.pdf*.

[101] The Council of Insurance Agents & Brokers, *Cyber Insurance Market Watch Survey Executive Summary* (May 2017), 2, *https://www.ciab.com/wp-content/uploads/2017/05/Spring2017_CyberSurvey_ExecSummary_FINAL.pdf*; Terri Cotton Santos, *Cyber Insurance: Considerations for Businesses*, RIMS (2017), 1, *https://www.rims.org/RiskKnowledge/RISKKnowledgeDocs/2017-Cyber-Ins-Considerations-for-Business_3212017_14345.pdf*.

[102] Lenihan, "Cyber Insurance Market."

[103] AIR Worldwide, *Insuring Cyber Risks* (July 2017), 2, *https://www.air-worldwide.com/publications/white-papers/documents/insuring-cyber-risk*.

[104] A.M. Best, *Special Report: Cyber Line Expected to be One of the Leading P/C Growth Areas* (June 22, 2017), 1, *http://www3.ambest.com/bestweek/DisplayBinary.aspx?TY=P&record_code=263055*.

[105] "Looking Before They Leap: U.S. Insurers Dip Their Toes in the Cyber-Risk Pool," *S&P Global Market Intelligence*, June 9, 2015, *https://www.globalcreditportal.com/ratingsdirect/renderArticle.do?articleId=1403078&SctArtId=320678*.

[106] Council Regulation 2016/679 of April 26, 2016, General Data Protection Regulation, 2016 O.J. (L 119) (EU), *http://ec.europa.eu/justice/data-protection/reform/files/regulation_oj_en.pdf*.

which goes into force in May 2018, is expected to lead to increased demand for cyber insurance products by companies active in the EU.[107]

Reinsurers are also a component of the cyber insurance market, providing risk transfer opportunities for insurers offering cyber risk insurance products. Leading reinsurers have been investing significantly to improve their understanding and internal capabilities related to cyber risk.[108]

Various challenges may stand in the way of continued growth in the market for cyber insurance products. Obstacles to increasing the supply of cyber insurance products include a lack of relevant data, the evolving nature of cyber risks, the threat of accumulation (e.g., the sum of losses resulting from the same cause, such as a cyber attack on a cloud service provider or a vulnerability exhibited by commonly used hardware or software), and an overreliance on insurance products focused on losses related to personally identifiable information.[109] At least one rating agency has highlighted uncertainty in pricing and underwriting cyber risks, noting that aggressive expansion into this market could be a credit negative for insurers.[110]

Similarly, obstacles exist to increasing the demand for cyber insurance products. These include a lack of understanding about cyber risk and insurance options, a lack of standardization among cyber insurance policies, and uncertainty about coverage gaps.[111] Gaps may still exist in cyber insurance coverage, such as higher limits for large data aggregators, bodily injury stemming from cyber perils, and the value of information lost to a cyber incident or accident.[112] A global survey of more than 2,000 individuals involved in cyber risk management or enterprise risk management activities found that companies remain reluctant to purchase cyber insurance. In that survey, 64 percent of respondents believed that exposure to cyber risk will increase over the next two years, but only 24 percent of respondents reported that their companies purchase cyber insurance coverage.[113]

Insurance supervisors are continuing to adapt regulatory structures in response to the growth in the cyber insurance market. In the United States, state insurance regulators continue to collect

[107] "Munich Re, Beazley Partner to Provide Enhanced Cover for Large Cyber Risks," *Insurance Journal*, April 20, 2017, *http://www.insurancejournal.com/news/international/2017/04/20/448519.htm*.

[108] "Reinsurance Execs Weigh In on Cyber Risk," *Carrier Management*, October 26, 2015, *http://www.carriermanagement.com/features/2015/10/26/147025.htm*.

[109] Sam Friedman and Adam Thomas, "Demystifying Cyber Insurance Coverage," *Deloitte University Press*, February 23, 2017, *https://dupress.deloitte.com/dup-us-en/industry/financial-services/demystifying-cybersecurity-insurance.html*.

[110] "Fitch Urges Insurer Caution as Cyber Insurance Demand Grows," *Insurance Journal*, May 17, 2017, *http://www.insurancejournal.com/news/national/2017/05/17/451333.htm*.

[111] Friedman and Thomas, "Demystifying Cyber Insurance Coverage."

[112] Cotton Santos, "Cyber Insurance: Considerations."

[113] *See* Ponemon Institute LLC, *2017 Global Cyber Risk Transfer Comparison Report* (April 2017), 4, *http://www.aon.com/attachments/risk-services/cyber/2017-Global-Cyber-Risk-Transfer-Report-Final.pdf*.

and report on data regarding cyber and identity theft insurance products through the *Cybersecurity and Identity Theft Insurance Coverage Supplement*, now in its second annual reporting cycle. This supplement includes information regarding the number of claims reported and policies in force.[114] In the United Kingdom, the Prudential Regulation Authority (PRA) released a November 2016 consultation paper, *Cyber Insurance Underwriting Risk*, and a proposed supervisory statement setting out the PRA's expectations for the prudent management of cyber underwriting risk by U.K. non-life and reinsurance firms, which it finalized in July 2017.[115] In the consultation paper, the PRA noted that its supervised firms generally lacked: (1) an understanding of silent cyber risk (named "non-affirmative" cyber risks in the supervisory statement); (2) board-level strategies for managing cyber underwriting risk; and (3) sufficient expertise about cyber underwriting risk.[116] The final supervisory statement sets regulatory expectations related to these issues.[117]

2. Insurance Sector Cybersecurity

Financial service organizations, including insurers, are the most frequent victims of reported data breaches, accounting for nearly a quarter of all breaches. These organizations, located around the world, reported 998 cyber incidents in 2016, with 471 resulting in confirmed data disclosures.[118] Denial of service attacks were the most common incident type.[119] As the 2015 data breaches at health insurers Anthem Inc. and Premera Blue Cross illustrate,[120] insurers – which collect and manage large stores of personally identifiable information and private health information from consumers – are attractive targets for cyber criminals and other hackers. In response to the risks posed by cyber criminals to the insurance sector, regulators and policy makers at the state, federal, and international level – including FIO – are taking steps to enhance the cybersecurity posture of the insurance sector.

---

[114] NAIC and The Center for Insurance Policy and Research (CIPR), *Report on the Cybersecurity Insurance Coverage Supplement* (August 6, 2017), *http://www.naic.org/documents/cmte_ex_cybersecurity_tf_rpt_cyber_ins_coverage_suppliment.pdf*.

[115] PRA, *Cyber Insurance Underwriting Risk (Consultation Paper CP39/16)* (November 2016), *http://www.bankofengland.co.uk/pra/Documents/publications/cp/2016/cp3916.pdf*; PRA, *Cyber Insurance Underwriting Risk (Supervisory Statement SS4/17)* (July 2017), *http://www.bankofengland.co.uk/pra/Documents/publications/ss/2017/ss417.pdf*.

[116] PRA, *Consultation Paper CP39/16*.

[117] PRA, *Supervisory Statement SS4/17*.

[118] Verizon, *2017 Data Breach Investigation*, 3, 9.

[119] Verizon, *2017 Data Breach Investigation*, 19.

[120] Anthem Insurance Companies, Inc., "Statement Regarding Cyber Attack Against Anthem," news release, February 5, 2015, *https://www.anthem.com/health-insurance/about-us/pressreleasedetails/WI/2015/1813/statement-regarding-cyber-attack-against-anthem*; "About the Cyberattack," Premera Blue Cross, *https://www.premera.com/wa/visitor/about-the-cyberattack*.

a. State Cybersecurity Measures

In 2017, the NAIC elevated a Cyber Security Task Force (first formed in 2014) into the Cybersecurity Working Group. The 2017 charges for this group include: (1) monitoring cybersecurity developments; (2) advising the Innovation and Technology Task Force on cybersecurity issues; (3) coordinating with other NAIC committees on cybersecurity issues; (4) continuing development of the Insurance Data Security Model Law; and (5) representing the NAIC before (and communicating with) other groups regarding cybersecurity issues.[121]

Since March 2016, the NAIC has been developing an *Insurance Data Security Model Law*, which is now in its sixth, and final, public iteration.[122] Should the model law be approved by the NAIC as expected, states will then have the opportunity to adopt and implement laws consistent with the model.[123]

Meanwhile, the New York Department of Financial Services (NYDFS) implemented a new cybersecurity regulation on March 1, 2017, called *Cybersecurity Requirements for Financial Services Companies*,[124] which is similar in content to the NAIC's *Insurance Data Security Model Law*. The regulation requires banks, insurers, and other financial services institutions regulated by the NYDFS "to establish and maintain a cybersecurity program designed to protect consumers' private data and ensure the safety and soundness of New York's financial services industry."[125] The new requirements for covered entities include: (1) a cybersecurity program and policy; (2) risk assessment, testing, and compliance; (3) personnel, resources, and training; (4) access privileges, application security, and non-public information encryption; (5) audit and non-public information records retention; (6) validation that third party service providers can meet these cyber requirements; and (7) incident notification.[126] Entities with fewer than 10 employees (including independent contractors), less than $5 million in gross revenues in each of the last three fiscal years, or less than $10 million in year-end total assets are partially exempted

[121] *See* NAIC, "Cybersecurity (Ex) Working Group: 2017 Charges," *http://www.naic.org/cmte_ex_cswg.htm*.

[122] NAIC, *Insurance Data Security Model Law (Preliminary Working and Discussion Draft)* (August 7, 2017), *http://www.naic.org/documents/cmte_ex_cswg_final_model_law_v6_clean.pdf*; NAIC, *Innovation and Technology (EX) Task Force: Meeting Summary Report* (August 8, 2017), *http://naic.org/meetings1708/cmte_ex_ittf_2017_summer_nm_summary.pdf*. For a discussion of state insurance regulators' and the NAIC's previous cybersecurity initiatives, *see* FIO, *2016 Annual Report*, 58-59.

[123] For more on state adoption of NAIC model laws, *see* discussion below in Section IV.H.4.

[124] N.Y. Comp. Codes R. & Regs. tit. 23, § 500 (2017), *http://www.dfs.ny.gov/legal/regulations/adoptions/rf23-nycrr-500_cybersecurity.pdf*.

[125] NYDFS, "Governor Cuomo Announces First-In-The-Nation Cybersecurity Regulation Protecting Consumers and Financial Institutions from Cyber-Attacks to Take Effect March 1," news release, February 16, 2017, *http://www.dfs.ny.gov/about/press/pr1702161.htm*.

[126] EY, *Cybersecurity Requirements for Financial Services Companies* (February 2017), *http://www.ey.com/Publication/vwLUAssets/EY-cybersecurity-requirements-for-financial-services-companies/$FILE/EY-cybersecurity-requirements-for-financial-services-companies.pdf*.

from the regulation.[127] The NYDFS has also launched an online portal for businesses to report cybersecurity events in New York.[128]

b. Federal Cybersecurity Measures

In May 2017, President Trump issued Executive Order 13800 outlining four objectives for enhancing cybersecurity: (1) securing federal networks; (2) working with industry to protect critical infrastructure; (3) strengthening deterrence and international engagement; and (4) promoting workforce development.[129] Consistent with these objectives, Treasury, including FIO, will continue to work in support of cybersecurity across the insurance industry.

Broadly, Treasury serves as the federal interface for matters involving cyber threats and cybersecurity for institutions within the domestic and international financial services sector, including insurers. In this role, Treasury acts as the coordinating agency with the Department of Homeland Security and other relevant federal agencies, including the regulatory, law enforcement, and intelligence communities. FIO and Treasury also coordinates with state government agencies and insurance regulators, the NAIC, and the private sector.

FIO and Treasury also collaborate with insurers and state regulators to help identify and adopt best practices and baseline protections to enhance cybersecurity. In August 2017, together with the Financial Services Sector Coordinating Council, Treasury led a public-private tabletop exercise with participants from the insurance industry, state regulators and the NAIC, and law enforcement community. This tabletop exercise was designed to simulate cyber incidents and identify key challenges for effective public-private response and coordination. The exercise, hosted at Treasury, furthered discussions among parties present of current areas that need strengthening as well as recognized particular areas that are already resilient.

The National Institute of Standards and Technology (NIST) Cybersecurity Framework Version 1.0, released in February 2014, offers a number of best practices and outlines a multitude of baseline protections to assist entities in developing ways to prevent breaches of their networks, systems, and data, and to prevent damage if a breach occurs.[130] The Framework is an evolving guide, and NIST released an updated draft Cybersecurity Framework Version 1.1 in January 2017.[131] While the Framework is not designed to serve as a regulatory standard, it can be used to

[127] EY, *Cybersecurity Requirements.*

[128] NYDFS, "DFS Continues Innovative Regulatory Initiatives with the Launch of New Online Cybersecurity Portal for Businesses Seeking to Report Cybersecurity Events in New York," news release, July 31, 2017, *http://www.dfs.ny.gov/about/press/pr1707311.htm*.

[129] Strengthening the Cybersecurity of Federal Networks and Critical Infrastructure, Exec. Order No. 13,800, 82 Fed. Reg. 22391 (May 11, 2017), *https://www.federalregister.gov/documents/2017/05/16/2017-10004/strengthening-the-cybersecurity-of-federal-networks-and-critical-infrastructure*.

[130] NIST, *Framework for Improving Critical Infrastructure Cybersecurity (Version 1.0)* (February 12, 2014), *https://www.nist.gov/sites/default/files/documents/cyberframework/cybersecurity-framework-021214.pdf*.

[131] NIST, *Framework for Improving Critical Infrastructure Cybersecurity (Draft Version 1.1)* (January 10, 2017), *https://www.nist.gov/sites/default/files/documents////draft-cybersecurity-framework-v1.1-with-markup1.pdf*.

inform regulatory and supervisory processes. For example, the NAIC leveraged the Cybersecurity Framework to provide cybersecurity guidance to state insurance examiners in its *Financial Condition Examiners Handbook*.[132]

Federal supervisors are also developing rules regarding cybersecurity that, if adopted, will affect some insurers. In October 2016, the Federal Reserve, the Office of the Comptroller of the Currency, and the FDIC published an advance notice of proposed rulemaking inviting comments on a set of potential enhanced cybersecurity risk management and resilience standards for large and interconnected entities under their supervision.[133] The advance notice addresses cyber risk governance, cyber risk management, internal dependency management, external dependency management, incident response, and cyber resilience, and situational awareness. The proposed rule would apply to bank holding companies with total U.S. assets of $50 billion or more – some of which own insurers subject to consolidated supervision by the Federal Reserve – and to nonbank financial companies supervised by the Federal Reserve.[134]

c. International Cybersecurity Efforts

Cybersecurity is a global challenge, and nations are increasingly working together to address cyber risks consistently on a national and international scale. G-7 countries (Canada, France, Germany, Italy, Japan, United Kingdom, and the United States) have impaneled a "cyber expert group" to explore ways to address cybersecurity risks in the international financial system.[135] In October 2016, the finance ministers and central governors of the G-7 released the *G-7 Fundamental Elements of Cybersecurity for the Financial Sector*, a concise set of principles on best practices in cybersecurity for public and private entities in the financial sector.[136] The fundamental elements address cyber risks from both entity-specific and system-wide perspectives. They are intended to be building blocks from which financial institutions can design and implement cybersecurity strategies and supervisors and other public entities can

[132] NAIC and CIPR, *Cybersecurity: Protecting Insurance Consumers in a Digital Age* (April 2017), *http://www.naic.org/documents/government_relations_issue_brief_cybersecurity.pdf*.

[133] Federal Reserve; the Office of the Comptroller of the Currency; and the Federal Deposit Insurance Corporation; Joint Advance Notice of Proposed Rulemaking, Enhanced Cyber Risk Management Standards, 81 Fed. Reg. 74315 (October 26, 2016), *https://www.federalregister.gov/documents/2016/10/26/2016-25871/enhanced-cyber-risk-management-standards*. The comment period for this proposed rule was extended for an additional month. *See* The Board of Governors of the Federal Reserve System; the Office of the Comptroller of the Currency; and the Federal Deposit Insurance Corporation; Joint Advance Notice of Proposed Rulemaking; Re-opening of Comment Period, Enhanced Cyber Risk Management Standards, 82 Fed. Reg. 8172 (January 24, 2017), *https://www.federalregister.gov/documents/2017/01/24/2017-01539/enhanced-cyber-risk-management-standards*.

[134] 81 Fed. Reg. at 74318.

[135] FIO, *2016 Annual Report*, 59.

[136] *See, e.g.,* Treasury and Federal Reserve, "Treasury and Federal Reserve Support Adoption of the G-7 Fundamental Elements of Cybersecurity for the Financial Sector," news release, October 11, 2016, *https://www.treasury.gov/press-center/press-releases/Pages/jl0570.aspx* (providing link to G-7 Fundamental Elements at *https://www.treasury.gov/resource-center/international/g7-g20/Documents/G7%20Fundamental%20Elements%20Oct%202016.pdf*).

inform efforts to protect the financial sector from cyber incidents. These fundamental elements may help further national and discussions regarding insurance sector cybersecurity.

FIO is involved in international initiatives specific to addressing cybersecurity in the insurance sector, including through the IAIS Financial Crime Task Force (FCTF).[137] In August 2016, the IAIS released its *Issues Paper on Cyber Risk to the Insurance Sector*, which was developed by the FCTF.[138] The issues paper is intended to educate insurers and supervisors on "the challenges presented by cyber risk, including current and contemplated supervisory approaches for addressing these risks" and "provides background, describes current practices, identifies examples, and explores related regulatory and supervisory issues and challenges."[139] The IAIS recommended a follow-up application paper, which would provide further advice, illustrations, recommendations, or examples of good practices on how supervisory material may be implemented. Such an application paper also may provide guidance regarding cybersecurity examination practices for supervisors and risk management practices for insurers.[140]

FIO also participates in the OECD IPPC, which in 2016 began a project assessing cyber risk insurance and the ways that such insurance products can contribute to improved cybersecurity for consumers.[141] The Department of Commerce leads the official delegation from the United States to the IPPC, which also includes Treasury and the NAIC. In May 2017, the OECD provided a report to the G-7 Presidency titled *Supporting an Effective Cyber Insurance Market*.[142]

---

[137] The FCTF is further discussed in Section V.C.5.

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

[139] IAIS, *Cyber Risk to the Insurance Sector*, 4.

[140] IAIS, *Cyber Risk to the Insurance Sector*, 30.

[141] "Cyber Risk Insurance," OECD, April 18, 2016, http://www.oecd.org/finance/insurance/cyber-risk-insurance.htm.

[142] OECD, *Supporting an Effective Cyber Insurance Market: OECD Report for the G7 Presidency* (May 2017), https://www.oecd.org/daf/fin/insurance/Supporting-an-effective-cyber-insurance-market.pdf.

B. Innovation and Technology in the Insurance Industry

Advances in technology continue to affect the insurance industry. This section of the Report explores the relationships among innovation, technology, consumers, and insurance, focusing specifically on: (1) InsurTech, or the use of technology in the insurance sector; (2) big data; and (3) how the insurance market is developing products in response to the sharing economy.

1. The Growth of InsurTech

"InsurTech" is the innovative use of technology in insurance, and is the insurance analog to FinTech.[143] Recent technological developments have led to new insurance initiatives across the industry, from operations to marketing and product development.[144] Examples of innovations affecting the insurance sector include digital platforms; the Internet of Things; telematics; big data; robo-advisors; machine learning and artificial intelligence; blockchain; and P2P, usage-based, and on-demand insurance.[145] Innovations such as these are discussed in further detail below.

a. The InsurTech Market

In 2015, funding for InsurTech startups rose to \$2.7 billion.[146] Such funding increased in 2016 and InsurTech accelerator programs proliferated.[147] Insurers themselves have helped fund this growth, with some setting up units for venture capital deals or employing their own venture capital funds to invest in InsurTech startups.[148]

---

[143] *See, e.g.*, "InsurTech," NAIC and CIPR, April 25, 2017, *http://www.naic.org/cipr_topics/topic_insurtech.htm*; PricewaterhouseCoopers LLP, *InsurTech: A Golden Opportunity for Insurers to Innovate* (March 2016), 2, *http://www.pwc.com/us/en/insurance/publications/assets/pwc-top-issues-insurtech.pdf*.

[144] David Hollander and Charlie Mihaliak, "The future of work in insurance," *PropertyCasualty360*, August 1, 2017, *http://www.propertycasualty360.com/2017/08/01/the-future-of-work-in-insurance*.

[145] IAIS, *FinTech Developments in the Insurance Industry* (February 21, 2017), *https://www.iaisweb.org/page/supervisory-material/other-supervisory-papers-and-reports//file/65440/report-on-fintech-developments-in-the-insurance-industry*. *See also* Robert Philips, "Exploring the InsurTech-Consumer Disconnect," *Vertafore*, March 21, 2017, *http://www.vertafore.com/Resources/Blog/Exploring-the-InsurTech-Consumer-Disconnect*.

[146] Oliver Suess, "InsurTech Startups Attract Growing List of Traditional Insurer Partners," *Insurance Journal*, November 28, 2016, *http://www.insurancejournal.com/news/international/2016/11/28/433226.htm*.

[147] KPMG, *The Pulse of Fintech Q4 2016: Global Analysis of Investment in Fintech* (February 21, 2017), 8, *https://assets.kpmg.com/content/dam/kpmg/xx/pdf/2017/02/pulse-of-fintech-q4-2016.pdf*.

[148] Suess, "InsurTech Startups Attract Growing List."

Box 3: The Emergence of Blockchain Technology

Blockchain – a technology that uses a distributed, decentralized ledger to maintain a list of data records that are certifiable, permanent, and secure from tampering and revision[149] – is among the technologies being explored for use in the insurance sector. Blockchain fuses a ledger with a network, potentially reducing human error in administration, and thus increasing security, improving privacy, and speeding up transactions.[150] The Blockchain Insurance Initiative (B3i), founded by several insurers, aims to explore blockchain's potential to better serve clients through faster, more convenient, and more secure services and to make transactions between insurers and reinsurers more efficient.[151] B3i, which now has 15 member insurers, is implementing a pilot program involving reinsurance agreements.[152]

Numerous industry examples demonstrate how technology is being used to develop innovative insurance products. One such innovation is the use of P2P, or "social," insurance, which allows policyholders "to pool their capital, self-organize and self-administer their own insurance,"[153] generally by using crowdsourcing and social networking to create a shared insurance experience. For example, one P2P insurer providing homeowners' and renters insurance uses algorithms and behavioral economics to drive its business, and relies on a mobile application to help policyholders purchase insurance and submit claims without paperwork.[154] InsurTech startups are also operating in the auto insurance market, using new concepts and technologies such as usage-based insurance and telematics. Usage-based insurance, including "pay as you go" insurance, provides personalized policies.[155] As one example, insurance may be based on

[149] "Blockchain Technology," NAIC and CIPR, March 31, 2017, *http://www.naic.org/cipr_topics/topic_blockchain.htm*. *See also* Joseph S. Harrington, "The Present Use and Promise of Blockchain in Insurance," *Insurance Journal*, May 16, 2017, *available at* *http://www.insurancejournal.com/news/national/2017/05/16/451177.htm*.

[150] *See* "Blockchain Technology." *See also* The Institutes Griffith Foundation, "Understanding Blockchain Technology and its Insurance Implications" (presentation, May 29, 2017), 6, *http://www.naic.org/documents/cipr_events_blockchain_presentation_part_one.pdf*.

[151] Swiss Re, "Insurers and Reinsurers Launch Blockchain Initiative," news release, undated, *http://www.swissre.com/reinsurance/insurers_and_reinsurers_launch_blockchain_initiative.html*.

[152] Swiss Re, "Ten New Members Join Blockchain Initiative B3i," news release, undated, *http://www.swissre.com/reinsurance/ten_new_members_join_blockchain_initiative_B3i.html*.

[153] "Peer-to-Peer (P2P) Insurance," NAIC and CIPR, April 3, 2017, *http://www.naic.org/cipr_topics/topic_p2p_insurance.htm*.

[154] *See* "Lemonade Launches in New Jersey, Marks Fourth State in National Expansion," *Insurance Journal*, August 2, 2017, *http://www.insurancejournal.com/news/east/2017/08/02/459715.htm*. This P2P insurer had $179,855 in premiums written in 2016; was doing business in four states as of August 2017; and had filed applications for licenses in an additional 42 states and the District of Columbia. *See, e.g.*, Thomas Mason, "Putting Lemonade's Zesty Growth in Context," *SNL*, February 6, 2017, *https://www.snl.com/web/client?auth=inherit#news/article?id=39305227*; Andrew Simpson, "Startup Insurer Lemonade is Going National; Files for Licenses Countrywide," *Insurance Journal*, December 22, 2016, *http://www.insurancejournal.com/news/national/2016/12/22/436381.htm*.

[155] *See*, NAIC, "Understanding Usage-Based Insurance: Is Tracking Technology Right for You?" April 2017, *http://www.naic.org/documents/consumer_alert_understanding_usage_based_insurance.htm*.

mileage driven determined by a hardware device plugged into a policyholder's car.[156] Similarly, telematics offer insurers a way to receive real-time data on driving habits through smartphone apps that gather information on acceleration, braking, swerving, tailgating, distracted driving, and other related data.[157]

Box 4: Life Insurance Underwriting and Technology

InsurTech presents opportunities and challenges for the L&H sector. Although U.S. life insurance ownership has increased over the past six years, market penetration has gradually declined since the 1960s.[158]

Adoption of FinTech has generally proceeded more rapidly in the banking and securities sectors than in the insurance sector. However, life insurers are beginning to embrace technological advances to simplify the underwriting process and diversify products in an attempt to improve market penetration. The length, complexity, and invasiveness of traditional life insurance underwriting can be a deterrent to growth, particularly since such underwriting typically relies on sensitive personal health information provided through laboratory testing of fluid samples obtained from applicants.

Some life insurers have streamlined or automated the underwriting process.[159] One form of streamlining replaces a medical examination and fluids collection with information about the applicant's health obtained (with the applicant's consent) from the Medical Information Bureau,[160] prescription drug databases, and responses to a limited number of questions about health and lifestyle.[161] However, technology has not replaced traditional underwriting methods, and, according to one study, less than 15 percent of all new life insurance policies are written

[156] "Metromile: New App Resolves Some Claims in an Hour," *Insurance Journal*, December 15, 2016, *http://www.insurancejournal.com/news/national/2016/12/15/435419.htm*.

[157] Mark Hollmer, "Startup Auto Insurer Root Targets Good Drivers with Smartphones," *Insurance Journal*, October 25, 2016, *http://www.insurancejournal.com/news/national/2016/10/25/430423.htm*.

[158] LIMRA, U.S. Individual Life Insurance Handbook (2016), 10, *http://www.limra.com/Research/Abstracts/2017/2016_U_S__Individual_Life_Insurance_Yearbook.aspx.;* LIMRA, *Turn Up The Volume: $12 Trillion Sound Opportunities* (January 12, 2017), 5, *http://www.limra.com/Research/Abstracts/2017/Turn_Up_the_Volume__$12_Trillion_Sound_Opportunities_(2017).aspx*.

[159] In a survey of 78 life insurers in the United States and Canada, 50 percent had some form of automated underwriting in place. Mary M. Art and Eric T. Sondergrad, *Transforming Underwriting: Automated Underwriting Company Practices for Life Insurance in 2017* (2017), 5.

[160] The Medical Information Bureau, a non-profit organization owned and operated for L&H insurers, uses an information exchange database to assess an individual's risk and eligibility during the underwriting of life, health, disability income, critical illness, and LTCI policies. *See* "The Facts About MIB," MIB Group, Inc., *https://www.mib.com/facts_about_mib.html*.

[161] Mary M. Art, *Automating Underwriting for Life Insurance: Company Practices Study* (2016), 12.

without medical exams.[162] Life insurers have also used various forms of automated underwriting – such as prior review by underwriters (partially automated) or a program that accepts or declines risks with no involvement by underwriters (fully automated) – to simplify the application process.[163]

Globally, life insurers are using new technology, such as artificial intelligence, big data, and the Internet of Things, to both expand markets and price risks, potentially upending long-standing processes for the development, marketing, and distribution of life insurance. Similarly, the U.S. life insurance market is engaging with the possibilities presented by emerging technologies, from disruptive start-ups funded by venture capital to established insurers investing in new technology or launching in-house innovation laboratories. For example, a recently formed California-based science firm offers a facial analytics technology which extracts information on the biological, genetic, and behavioral traits of an individual insurance applicant and links these traits to variations in mortality risk.[164] Adapting to new technologies and changing consumer preferences could influence the ability of U.S. life insurers to increase their market growth.

Deployment of InsurTech may benefit insurance consumers in various ways. For example, the use of telematics and other "smart" devices could help to lower premiums through premium discounts and more tailored policies. Millennials (ages 18-34), in particular, reportedly prefer usage-based insurance to traditional coverage and are willing to provide information about their driving behavior in exchange for lower premiums.[165] Telematics and other new technologies may speed the claims process by increasing the amount of information available to resolve questions of fault and liability.[166] InsurTech also may help the development of new platforms allowing consumers to better compare companies and their products, thus increasing transparency as well as fostering improvements in products and a more competitive insurance marketplace.

InsurTech also presents potential challenges for insurers and insurance consumers. For example, the more reliant insurers become on data and data analytics, the more data that may potentially be at risk to cyber theft, or other data breaches,[167] and the more costly data errors could be to

---

[162] "Accelerated Underwriting Will Bring a True Change to the Model," *PricewaterhouseCoopers LLP*, January 13, 2017, *https://denovo.pwc.com/recons/accelerated-underwriting-will-bring-a-true-change-to-the-model*.

[163] Art, *Automating Underwriting for Life Insurance*, 6.

[164] Lapetus Solutions Inc., *Introducing CHRONOS: Changing the Face of Insurance Underwriting*, *https://www.lapetussolutions.com/wp-content/uploads/2017/07/chronos_brochure_v01_6.pdf*.

[165] Tammy Chen and Len Llaguno, "Millennials' Enthusiasm for Usage-Based Insurance Will Require a Complete Rethink," *Willis Towers Watson*, August 25, 2015, *https://www.towerswatson.com/en-US/Insights/Newsletters/Americas/americas-insights/2015/millennials-enthusiasm-for-usage-based-insurance-will-require-a-complete-rethink*.

[166] Lucy Hook, "50% of World's Vehicles to be Insured with Telematics by 2030," *Insurance Business*, May 26, 2017, *http://www.insurancebusinessmag.com/uk/news/breaking-news/50-of-worlds-vehicles-to-be-insured-with-telematics-by-2030-68705.aspx*.

[167] *See* Section IV.A.2 of this Report for steps insurance regulators are taking to address cybersecurity concerns.

consumers in terms of higher premiums or denied claims.[168] To the extent that InsurTech involves newer technologies and newer companies, there will be shorter track records on which consumers can judge the performance of such companies. In addition, loss of privacy and unfair or illegal discrimination are potential issues.[169] Lastly, InsurTech can lead to loss of human contact: in a survey of 1,200 consumers, the clear majority (78 percent) said that they would prefer to work with an actual person rather than electronically submitting claims.[170]

b. Regulatory Responses to InsurTech

In response to the proliferation of new technology, regulators recognize the need to understand new technology and how new data is being generated and used.[171] The NAIC, for example, has formed an Innovation and Technology Task Force – which includes the Big Data Working Group – to provide a forum for regulator education and discussion of new and emerging products and technology in the insurance sector, monitor technology developments that may impact state regulation, and develop regulatory guidance as needed.[172] The IAIS has also begun analyzing InsurTech, issuing a report in February 2017, *FinTech Developments in the Insurance Sector*, which provides an overview of innovations affecting the insurance industry, sets out a number of scenarios assessing how InsurTech may change the insurance industry in the future, and identifies potential supervisory challenges caused by innovation.[173]

Some international insurance regulators have begun experimenting with so-called "regulatory sandboxes" to allow for innovation.[174] For example, the Monetary Authority of Singapore has proposed developing such a sandbox, which will allow for experimentation in technology and new product development by offering certain products and services to customers under relaxed regulatory conditions for a limited time.[175] Similarly, as part of its "Project Innovate," the United Kingdom's Financial Conduct Authority has lowered administrative barriers and costs

---

[168] *See, e.g.*, Dave Collins, "Tracking Phones: Insurers Deny Claims Based on Doubtful Data," *U.S. News & World Report*, March 29, 2017, *https://www.usnews.com/news/best-states/connecticut/articles/2017-03-29/insurers-deny-claims-based-on-questionable-cell-tower-data*.

[169] *See also* discussion in Section IV.B.2 on Big Data.

[170] Philips, "InsurTech-Consumer Disconnect."

[171] Julia-Ambra Verlaine, "EU Assesses Financial Industry Regulation in Era of Big Data," *Wall Street Journal*, December 19, 2016, *https://www.wsj.com/articles/eu-assesses-financial-industry-regulation-in-era-of-big-data-1482157331* (quoting Gabriel Bernardino, EIOPA chairman).

[172] "Innovation and Technology (EX) Task Force," NAIC, *http://www.naic.org/cmte_ex_ittf.htm*.

[173] IAIS, *FinTech Developments*.

[174] *See, e.g.*, Munich Re, "Proposal: Future Insurance Technology (FIT) Lab, a US Regulatory Sandbox Solution" (presentation, NAIC and CIPR, Miami, FL, December 12, 2016), *http://www.naic.org/documents/cipr_events_fall_2016_fitlab_prop.pdf*.

[175] Gabriel Olano, "Singapore Backs Insuretech Innovation," *Insurance Business*, June 9, 2016, *http://www.insurancebusinessmag.com/asia/news/breaking-news/singapore-backs-insuretech-innovation-49393.aspx*.

associated with testing innovative products and services while still protecting consumer interests.[176]

2. Big Data, Price Optimization, and Insurance Rates

"Big data" has many definitions, but is commonly understood as large, complex data sets that traditional data processing application software cannot handle, and for which more sophisticated software algorithms (such as new artificial intelligence tools like machine learning) must be used.[177] Big data can assist nearly all aspects of the business of insurance, but it is particularly useful for underwriting, i.e., determining whether to accept a risk, and if so, at what amount of coverage and for what amount of premium.[178] More tailored underwriting could mean lower prices for many. The use of big data by insurers, however, may present issues for consumers relating to privacy and unfair or illegal discrimination.

Big data can involve the compilation of large amounts of personally identifiable information, as well as detailed information about insurance consumers' daily habits. As a result, some observers and consumers have expressed concerns about privacy.[179] Others contend, however, that such privacy concerns are outdated, because both insurers and consumers recognize and accept the value of "connected" insurance.[180]

---

[176] Dr. Phillip Trillmich and Katarina Jokic, "UK 'Regulatory Sandbox' to Foster Fintech Innovation," *White & Case Technology*, April 22, 2016, https://www.whitecase.com/publications/alert/uk-regulatory-sandbox-foster-fintech-innovation.

[177] *See, e.g.*, Steve Lohr, "The Origins of 'Big Data': An Etymological Detective Story," *New York Times*, February 1, 2013, https://bits.blogs.nytimes.com/2013/02/01/the-origins-of-big-data-an-etymological-detective-story/; Gil Press, "12 Big Data Definitions: What's Yours?" *Forbes*, September 3, 2014, https://www.forbes.com/sites/gilpress/2014/09/03/12-big-data-definitions-whats-yours/#7638c19e13ae.

[178] "Underwriting," IRMI, https://www.irmi.com/online/insurance-glossary/terms/u/underwriting.aspx. *See also* Box 4, above; Lawrence Powell, "Big Data and Regulation in the Insurance Industry" (presentation, NAIC Big Data Working Group, Denver, CO, April 8, 2017), http://www.naic.org/meetings1704/cmte_ex_bdwg_2017_spring_nm_materials.pdf?1503680779391; North American CRO Council, *Risk Implications of Data and Analytics to the Insurance Industry* (January 2017), http://www.crocouncil.org/images/CROC_Risk_Implications_of_Data_and_Analytics_to_the_Insurance_Industry_20170106.pdf.

[179] *See, e.g.*, Mark Hollmer, "Insurers Risk Triggering Government Regulation Without Responsible Big Data Usage: Fitch," *Carrier Management*, March 30, 2017, http://www.carriermanagement.com/news/2017/03/30/165737.htm (noting observers have warned that "data privacy laws and regulations have lagged behind rapid technological advancement"); Rob Lenihan, "Big data? No Problem for Current Insurance Regulations, Researchers Say," *Business Insurance*, April 4, 2017, http://www.businessinsurance.com/article/20170404/NEWS06/912312734/Big-data-no-problem-for-National-Association-Insurance-Commissioners-regulations (discussing whether regulators are fully able to protect consumers' privacy). In addition, a March 2017 survey of 1,200 consumers found that only 23 percent would be comfortable sharing their personal data with an InsurTech startup, even if it lowered their insurance rates. Philips, "InsurTech-Consumer Disconnect."

[180] Hook, "50% of World's Vehicles."

The more they learn about their customers, the more insurers can differentiate among policyholders – often to policyholders' benefit in the form of lower prices. Insurers also need to ensure that the differentiation complies with the law.[181] While consumers and regulators may also question certain pricing practices, insurers counter that such questions reflect a misunderstanding of their ratemaking practices.[182]

Big data also may facilitate other forms of "price optimization," which in the insurance context is the practice of varying insurance rates based on non-risk related factors.[183] In January 2017, Nevada joined at least 18 other states and the District of Columbia which have issued notices that limit or ban price optimization.[184] Concerns over price optimization are leading state insurance regulators to examine premium "caps," policy language which limits the amount a premium can be increased in any one year during policy renewals for individuals and small businesses. Regulators generally recognize the need to carefully review whether premium rates correlate to the covered risk(s), and whether rating factors conform to state law and public policy.[185]

In the past year, some insurance regulators and legislators have taken steps to review the use of occupation and income rating factors for auto insurance premiums, as well as premiums for other personal insurance policies.[186] In May 2017, New York announced a proposed regulation that

---

[181] State insurance laws generally prohibit "any unfair discrimination" between individuals of the same class and equal expectation of life with respect to life insurance, or between individuals of the same class and of essentially the same hazard with respect to P&C insurance. *See, e.g.*, Model Unfair Trade Practices Act § 4(G) (NAIC 2011), *http://www.naic.org/store/free/MDL-880.pdf*. Many states also specifically prohibit discrimination based on race, national origin, religion, or other factors. *See generally* Ronen Avraham, Kyle D. Logue, and Daniel Benjamin Schwarcz, *Understanding Insurance Anti-Discrimination Laws*, Law & Economics Working Papers (2013), *http://repository.law.umich.edu/law_econ_current/52/*. Academics and others have discussed data mining's potential to discriminate – intentionally or unintentionally – against persons in protected classes (such as race or religion). Solon Barocas & Andrew D. Selbst, "Big Data's Disparate Impact," 104 Calif. L. Rev. 671 (2016); Lauren Kirchner, "When Big Data Becomes Bad Data," *ProPublica*, September 2, 2015, *https://www.propublica.org/article/when-big-data-becomes-bad-data*.

[182] *See, e.g.*, "Auto Insurers Overcharging Loyal Customers, Insurance Commissioner Says," *Insurance Business*, July 10, 2015, *http://www.insurancebusinessmag.com/us/news/breaking-news/auto-insurers-overcharging-loyal-customers-insurance-commissioner-says-21473.aspx*.

[183] *See, e.g.*, FIO, *Consumer Report*, 5; "Price Optimization," NAIC & CIPR, December 20, 2016, *http://www.naic.org/cipr_topics/topic_price_optimization.htm*.

[184] *See* State of Nevada Dep't of Business and Industry, Div. of Insurance, Bulletin 17-001, January 26, 2017, *http://doi.nv.gov/uploadedFiles/doinvgov/_public-documents/News-Notices/Bulletins/17-001.pdf*. Other states with price optimization notices include: Alaska, California, Colorado, Connecticut, Delaware, Florida, Indiana, Maine, Maryland, Minnesota, Missouri, Montana, Ohio, Pennsylvania, Rhode Island, Vermont, Virginia, and Washington. *See also* NAIC Casualty Actuarial and Statistical (C) Task Force, *Related Documents: Price Optimization Bulletins/News Releases*, *http://www.naic.org/cmte_c_catf.htm* (providing links by states).

[185] *See, e.g.*, Joseph S. Harrington, "State Regulators Scrutinizing Use of Premiums Caps in Insurance Rating," *Insurance Journal*, April 20, 2017, *http://www.insurancejournal.com/news/national/2017/04/20/448436.htm*.

[186] Consumer advocates and others have raised similar concerns about occupation-based auto insurance discounts and income-based pricing. *See, e.g.*, Samantha Masunaga, "Consumer Watchdog Raises Concerns About Occupation-Based Auto Insurance Discounts," *Los Angeles Times*, February 10, 2017, *http://www.latimes.com/business/la-fi-consumer-watchdog-auto-20170208-story.html*; Frank Klimko, "Consumer

would generally forbid insurers from considering a driver's work status or educational level when determining that driver's insurance premium.[187] In its multi-year investigation, NYDFS found no correlation between driving ability and income and education level.[188] In May 2017, Maryland enacted legislation prohibiting the use of non-driving related factors – such as credit history, employment or occupation, and education level – in setting auto insurance rates.[189] Similarly, in August 2017, Delaware enacted legislation prohibiting insurers from, among other things, relying on a credit score that uses as a factor information such as income, gender, or ZIP code; cancelling or non-renewing a policy based on credit information alone; and using credit information in policy renewals, unless a review request results in a premium reduction.[190] In July 2016, the Governor of Alaska vetoed legislation which would have expressly permitted an insurer to use a consumer's credit history or score when establishing rates during renewal of a personal insurance policy.[191]

3. Insurance Response to the Sharing Economy

Technological advancements are transforming the way that goods and services are delivered and used. The insurance industry is responding to these changes, particularly in the realm of the "sharing economy." The sharing economy is a term used to refer to a broad range of P2P transactions which rely heavily on technology. Transactions in the sharing economy (also called the "gig economy," or "on-demand economy") tend to exhibit similar characteristics, i.e., reliance on the provision of excess goods or services on an *ad hoc* basis (e.g., a spare room in one's home or an extra seat in one's car) rather than the maintenance of inventory; blurring of the line between the provision of personal and commercial goods and services; and use of an intermediary online service or application to connect providers and consumers.[192]

Group Urges Heightened Scrutiny of Automobile Insurance Rates," *A.M. Best*, September 26, 2016, *http://www3.ambest.com/ambv/bestnews/newscontent.aspx?AltSrc=104&RefNum=194755*.

[187] *See* 39 N.Y. Reg. 8 (May 17, 2017), *https://govt.westlaw.com/nyreg/Document/Iba058d603ae411e7bb02e28b5033f0d4* (proposed addition to N.Y. Comp. Codes R. & Regs. tit. 11 § 154.6 to Insurance Regulation 150).

[188] *See* NYDFS, "Governor Cuomo Announced Action to Protect New Yorkers from Unfairly Discriminatory Auto Insurance Rates," news release, May 16, 2017, *http://www.dfs.ny.gov/about/press/pr1705161.htm*.

[189] *See* Maryland General Assembly, *Status of All House Legislation Introduced 2017 Session*, *http://mgaleg.maryland.gov/pubs-current/current-house-status-report.pdf* (Maryland HB 916).

[190] State of Delaware, "Governor Carney Signs Insurance Consumer Fairness Bill into Law," news release, August 1, 2017, *http://news.delaware.gov/2017/08/01/governor-carney-signs-insurance-consumer-fairness-bill-law/*.

[191] Message from Governor Walker, 2016-11-07 Alaska Sen. J. 3125, *http://www.akleg.gov/basis/Journal/Pages/29?Chamber=S&Bill=SB%20127&Page=03125#3125*.

[192] Aaron Smith, *Shared, Collaborative and On Demand: The New Digital Economy*, Pew Research Center (May 19, 2016), 15, *http://www.pewinternet.org/files/2016/05/PI_2016.05.19_Sharing-Economy_FINAL.pdf*.

As the sharing economy continues to grow,[193] regulators are beginning to require some of the sharing economy companies to purchase insurance themselves. For example, state legislators continue to address insurance requirements for transportation network companies (TNCs, also known as ride-sharing companies). The majority of states and territories now have TNC laws that include provisions concerning insurance requirements, with at least six states enacting such laws since June 2016.[194]

Box 5: Autonomous Automobiles

An autonomous automobile is one that can sense its environment and navigate without direct human input. Autonomous automobiles employ (or will employ) a variety of technologies, such as radar, lasers, GPS, and computer vision, to support control systems capable of analyzing sensory data to distinguish among different objects on or near the road. The first developments – systems that control steering, braking, and accelerating – began to appear in cars on the road over the past several years. These system, however, still require drivers to keep their eyes on the road and hands on the steering wheel.[195] Some of the world's major auto manufacturers have prototype cars that are fully self-driving, and have declared that within a decade they plan to offer for sale some form of advanced automation.[196] Similarly, major technology firms are investing significantly in autonomous driving software.

Developments in autonomous car technology will have implications for the U.S. P&C insurance sector. The U.S. P&C insurance sector derived approximately $249 billion, or 40 percent, of its 2016 direct premiums written from personal and commercial auto insurance.[197] Autonomous technology – together with other potential changes like the leveraging of customer data by auto manufacturers and new business models brought on by ridesharing – could fundamentally alter traditional personal and commercial automobile markets in coming years.[198]

The advent of autonomous automobiles also may raise significant questions concerning legal responsibility in the event of an accident. As the role of drivers in vehicle operation declines,

---

[193] Niam Yaraghi and Shamika Ravi, *The Current and Future State of the Sharing Economy*, Brookings Institution and Brookings India (March 2017), 6, https://www.brookings.edu/wp-content/uploads/2016/12/sharingeconomy_032017final.pdf

[194] *See* Mich. Comp. Laws § 257.2101 et seq. (2017); 2017 N.J. Sess. L. Serv. Ch. 26 (Assembly 3695) (West); Pa. Stat. and Cons. Stat. Ann. § 2601 et seq. (West 2017); R.I. Gen. Laws Ann. § 39-14.2-1 et seq. (West 2017); Tex. Occ. Code Ann. § 2402.001 et seq. (West 2017); and Wyo. Stat. Ann. § 31-20-101 et seq. (West 2017). *See also* Jennifer Gardner, "State Laws Relative to Transportation Network Companies" (presentation, NAIC Sharing Economy (C) Working Group, Denver, CO, April 8, 2017), http://naic.org/meetings1704/cmte_c_sharing_econ_wg_2017_spring_nm_materials.pdf?1496770271460.

[195] Will Knight, "Driverless Cars are Further Away Than You Think," *MIT Technology Review*, October 22, 2013. https://www.technologyreview.com/s/520431/driverless-cars-are-further-away-than-you-think/.

[196] Knight, "Driverless Cars."

[197] Figures derived from SNL Financial data. *See also* Box 1, above.

[198] KPMG, *The Chaotic Middle: the Autonomous Vehicle and Disruption in Automobile Insurance* (June 2017), 19-20, https://assets.kpmg.com/content/dam/kpmg/us/pdf/2017/06/chaotic-middle-autonomous-vehicle-paper.pdf.

drivers' liability for accidents could likewise decrease. Several auto manufacturers and technology firms have announced that they will accept responsibility for accidents caused by their technology.[199] Recently, the state of Michigan enacted legislation specifying that auto manufacturers must assume liability when autonomous vehicle systems' failures cause losses, and obtain insurance for this exposure.[200]

Some insurers are designing policies to address such emerging technologies. For example, one U.K. insurer launched a "driverless car" insurance policy in 2016.[201] This new coverage applies to risks such as hacking of an autonomous vehicle, operating system failures, and navigational system and satellite outages, as well as to more traditional auto risks.

Important questions have been raised about whether and when individuals working under a P2P model are covered by their personal homeowners or auto policies. Insurers are developing new products in response to potential coverage gaps created by the sharing economy business model, which in some cases are being marketed as add-ons to personal policies. For example, one insurer allows home-sharing hosts to purchase insurance covering only the specified rental period.[202] One ride-sharing service has partnered with insurers to offer drivers the opportunity to opt-in to injury protection insurance.[203] Other insurers introduced optional "Ride for Hire" add-on coverage in 2015 and have steadily been expanding the product into additional states, providing insurance coverage for drivers who have a ride-hailing application turned on but have not yet picked up a customer.[204]

Another sharing economy issue which may have insurance implications is the classification of on-demand workers as employees or contractors. The effect of this distinction is significant, as a growing segment of the population engages in non-traditional forms of employment.[205] Sharing

[199] KPMG, *Chaotic Middle*, 11.

[200] *See* 2016 Mich. Pub. Acts 333, (codified at Mich. Comp. Laws § 257.665b(4)), *http://legislature.mi.gov/doc.aspx?mcl-257-665b*).

[201] Kelly Pleskot, "Insurance Company Issues First Driverless Car Policy," *Motor Trend*, June 8, 2016, *http://www.motortrend.com/news/insurance-company-issues-first-driverless-car-policy/*.

[202] Trevor Mogg, "Slice Insurance Aims to Provide Peace of Mind for AirBnB Hosts," *Digital Trends*, June 1, 2017, *https://www.digitaltrends.com/home/slice-insurance-airbnb/*. Some insurers have chosen to exclude coverage entirely for home-sharing services, while others have extended coverage through policy endorsements. *See, e.g.*, Becky Yerak, "Insurance for AirBnB Hosts: Allstate to Sell Home-Sharing Coverage," *Chicago Tribune*, May 25, 2016, *http://www.chicagotribune.com/business/ct-home-sharing-insurance-0526-biz-20160525-story.html*

[203] Christian Alexandersen, "Uber Raises Rates in 8 States, Including Pa., to Fund Injury Protection Insurance for Drivers," *Penn Live*, May 9, 2017, *http://www.pennlive.com/news/2017/05/uber_raises_rates_in_eight_sta.html*.

[204] *See e.g.*, Deirdre Fernandes, "Insurers Pitch Extra Coverage for Uber and Lyft Drivers," *Boston Globe*, May 21, 2017, *https://www.bostonglobe.com/business/2017/05/21/insurers-offer-coverage-for-uber-lyft-drivers-but-not-clear-they-pay-more/vkidYb2HhUXoKHr12aoXeN/story.html*.

[205] The percentage of people with "alternative work arrangements," including but not limited to those in the sharing economy, increased from 10.7 percent in 2005 to 15.8 percent in 2015. Lawrence F. Katz and Alan B. Krueger, *The Rise and Nature of Alternative Work Arrangements in the United States, 1995-2015*, National Bureau of Economic Research (September 2016), 2-3, *http://www.nber.org/papers/w22667*.

economy companies often consider individuals providing hands-on delivery of goods or services as independent contractors rather than employees, under the view that the companies are merely providing a technology platform to connect willing contractors with consumers. Those classified as independent contractors may not receive workers' compensation protection if injured on the job.

C. Natural Hazards and Insurance

Insurance can aid Americans who are vulnerable to a broad array of natural disasters, including floods, hurricanes, tornados, earthquakes, landslides, snowstorms, drought, and fire.[206] This section highlights the role insurance can play in hazard mitigation by individual property owners, federal efforts to advance resilience through the MitFLG, and the NFIP.

1. Natural Hazards in the United States and the Role of Insurance

Natural hazards and severe weather in the United States are significant and costly, impacting all fifty states, the District of Columbia, and U.S. territories.[207] In 2016 alone, there were 15 separate natural disasters in the United States for which costs reached or exceeded $1 billion. In total, these natural disasters led to 138 deaths and $46.8 billion in losses.[208] In addition, the United States experienced 943 earthquakes of magnitude 3.0 or greater, over 5.4 million acres burned in 62,864 separate fires, and 9 winter storms.[209] Future potential losses could be even higher.[210]

Insurance is an important component in disaster recovery, providing benefits directly to policyholders when natural disasters strike. For individual Americans, insurance can provide significantly greater monetary assistance than what may be available to them as federal disaster relief: while FEMA's individual assistance can provide up to $33,000, the average award is

[206] *See e.g.*, FIO, *Report Providing an Assessment of the Current State of the Market for Natural Catastrophe Insurance in the United States* (September 2015), *https://www.treasury.gov/initiatives/fio/reports-and-notices/Documents/Natural%20Catastrophe%20Report.pdf*; FIO, *2016 Annual Report;* FIO, *Consumer Report*.

[207] *See, e.g.*, "Total Number of Declared Disasters (by State/Tribal Government and by Year)," FEMA, *https://www.fema.gov/disasters*.

[208] "Billion-Dollar Weather and Climate Disasters: Summary Stats," National Oceanic and Atmospheric Administration, National Centers for Environment Information, *https://www.ncdc.noaa.gov/billions/summary-stats*.

[209] CoreLogic, *2016 Natural Hazard Risk Summary & Analysis* (January 2017), *http://corelogic.maps.arcgis.com/apps/MapSeries/index.html?appid=820b887bd1b245c59c0a49e8613219a1*.

[210] CoreLogic, *2016 Wildfire Hazard Risk Report* (October 2016), *http://www.corelogic.com/about-us/researchtrends/wildfire-risk-report.aspx#*.

much smaller.[211] The difference between insurance and disaster relief can be as much as ten to one.[212]

Many natural disasters losses – particularly those arising from earthquakes and floods – are not insured under standard homeowners or renters policies, and the take-up rate for specialized coverage is relatively low.[213] Standard homeowners or renters insurance policies are multi-peril, meaning they include coverage for losses from various hazards, such as tornadoes, windstorms, hail, fire, lightning strikes, and snowstorms. Most homeowners have at least a standard insurance policy (93 percent),[214] while the majority of renters do not have *any* insurance for their homes or belongings (59 percent).[215] The number of insured millennial renters is even lower (28 percent).[216] Neither homeowners nor renters, however, are purchasing separate earthquake or flood insurance in large numbers. For example, although the California Earthquake Authority reported a seven-fold increase in policy buyers in 2016, only about 10 percent of Californians had earthquake coverage as of year-end.[217] Only about half of the people who live in 100-year floodplains purchase flood insurance – and the take-up rate is even lower outside such floodplains, even though the risk of flooding remains substantial.[218] Some estimates suggest that 75 percent of the $10 billion in overall losses arising from the August 2016 flooding in Louisiana was uninsured.[219]

---

[211] *See, e.g.*, FEMA, *Fact Sheet: What is FEMA's Individual Assistance Program*, https://www.fema.gov/media-library-data/1461689021638-cfcfd7f6c263635802fa7a76a19e00ea/FS001_What_is_Individual_Assistance_508.pdf; "FEMA Individual Assistance: Individuals and Households," Massachusetts Executive Office of Public Safety and Security, http://www.mass.gov/eopss/agencies/mema/after/assistance/after-assistance-fema-ia.html.

[212] *Reauthorization of the National Flood Insurance Program, Part I, Before the Senate Committee on Banking, Housing, and Urban Affairs*, 115th Cong. (March 14, 2017) (statement of Roy E. Wright, FEMA Deputy Associate Administrator for Insurance and Mitigation), https://www.banking.senate.gov/public/index.cfm/2017/3/reauthorization-of-the-national-flood-insurance-program-part-i (noting, in connection with the August 2016 Louisiana flooding, the average payment for NFIP policyholders was $86,500, while the average individual assistance payment was approximately $9,150).

[213] *See, e.g.*, FIO, *Consumer Report*, 12; FIO, *Natural Catastrophe Report*, 15-17, 38-39.

[214] "Homeowners and Renters Insurance," Insurance Information Institute, http://www.iii.org/fact-statistic/homeowners-and-renters-insurance.

[215] "Homeowners and Renters Insurance."

[216] Amy O'Connor, "Renters' Insurance and Millennials: If You Make it Simple, They Will Come," *Insurance Journal*, September 1, 2016, http://www.insurancejournal.com/news/national/2016/09/01/425071.htm.

[217] Thomas Harman, "California Earthquake Authority Reports Seven-Fold Increase in Policy Buyers in 2016," *A.M. Best*, May 1, 2017, http://www3.ambest.com/ambv/bestnews/newscontent.aspx?AltSrc=104&RefNum=199397.

[218] Carolyn Kousky, "Who Holds On To Their Flood Insurance," *Resources for the Future*, November 3, 2015, http://www.rff.org/blog/2015/who-holds-their-flood-insurance (links to multiple studies); "Flood Insurance: National Flood Insurance Program," Insurance Information Institute, http://www.iii.org/fact-statistic/flood-insurance (2016 poll found only 12 percent of homeowners had flood insurance).

[219] Munich Re, "Floods in Louisiana: A Stationary Depression," news release, January 4, 2017, https://www.munichre.com/en/media-relations/publications/press-releases/2017/2017-01-04-press-release/flood-louisiana/index.html.

Box 6: Hurricane Harvey

On August 25, 2017, Hurricane Harvey made landfall on the Texas Gulf Coast as a Category 4 storm. Over the next several days, Hurricane Harvey caused record rainfall of more than 50 inches in the Houston region, leading to many deaths, causing significant damage, and devastating families, homes, and businesses.[220]

After leaving Texas, Hurricane Harvey, downgraded to a tropical storm, again made landfall in southwestern Louisiana. While some areas saw up to 22 inches of rain,[221] Louisiana state officials did not report major damage caused by the storm.[222]

Insurance will be a crucial element of the process of recovery from Hurricane Harvey; however, the majority of Harvey-related residential flood losses (more than 70 percent) are likely uninsured. Homeowners' policies typically exclude flood coverage, and only about 20 percent of homeowners in the region affected by Hurricane Harvey have flood insurance through the NFIP.[223] Auto and commercial lines insurers will also likely face significant claims. Ratings agencies are expecting losses from Hurricane Harvey to put pressure on regional property and auto insurers, but such insurers are expected to withstand these losses.[224]

The federal government has responded to Hurricane Harvey through immediate relief efforts, disaster assistance (including low-interest loans from the Small Business Administration for uninsured or underinsured homeowners), and through the NFIP, which may provide individual policyholders with up to $350,000 and commercial policyholders with up to $1 million in coverage. FIO has conducted outreach to state insurance regulators and industry stakeholders, pursuant to its monitoring authority, to understand the insurance issues raised by Hurricane Harvey, as well as to offer assistance with regulators' and insurers' interactions with the federal government.

[220] Jenny Jarvie and Molly Hennessy-Fiske, "As Harvey Breaks Rainfall Record, Houston Imposes a Curfew and Death Toll Climbs to 18," *Los Angeles Times*, August 29, 2017, http://www.latimes.com/nation/la-na-texas-harvey-20170829-story.html.

[221] Rebecca Harrington, "Harvey Hit Louisiana with Widespread Flooding, But the State Escaped the Worst of the Storm – Here's What It Looks Like on the Ground," *Business Insider* (August 31, 2017), http://www.businessinsider.com/harvey-floods-louisiana-photos-new-orleans-2017-8.

[222] "The Latest: Louisiana Officials Report Little Harvey Damage," *U.S. News and World Report*, August 30, 2017, https://www.usnews.com/news/best-states/alabama/articles/2017-08-30/the-latest-louisiana-officials-report-little-harvey-damage.

[223] Roger Yu, "Less than 20% Harvey Victims Have Flood Insurance as FEMA Braces for Tons of Claims," *USA Today*, August 30, 2017, https://www.usatoday.com/story/money/2017/08/29/insurance-woes-await-flood-victims-under-covered-houston-area/613239001/. The NFIP is discussed further in Section IV.C.4.

[224] "Hurricane Harvey Puts Pressure on Regional Insurers in Texas, Says A.M. Best," *Insurance Journal*, September 5, 2017, http://www.insurancejournal.com/news/southcentral/2017/09/05/463100.htm. *See also* Section III.A.4 for early projections of Hurricane Harvey on insurers' financial performance and stability in the 2017 Insurance Outlook.

In addition to devastating loss of life, natural disasters can carry high economic costs not only for the insurance industry, but for states, local communities, and individuals. The total insured value of residential and commercial properties in coastal communities along the East Coast and Gulf Coast states – which may be vulnerable to flooding – exceeds $13.8 *trillion*, according to a 2016 estimate.[225] Moreover, approximately 40 percent of small businesses never re-open following a closure due to natural disaster.[226]

Box 7: State Insurance Regulatory Response to Natural Disasters

State insurance regulators and the NAIC continue to focus on how they can facilitate consumer protection and insurers' prompt response to natural disasters. For example, several states have fine-tuned their insurance regulations and emergency procedures that apply when natural disasters occur. After natural disasters, states may issue emergency insurance rules which allow policyholders more time to pay premiums and submit claim documents, or which may suspend certain policy provisions with which policyholders impacted by disasters may be unable to comply – such as those related to dwelling occupancy.[227] Additionally, some states have streamlined licensing requirements for claims adjusters when there is an emergency, in order to facilitate faster claims processing.[228] The NAIC is drafting an emergency response proposal for insurance commissioners,[229] and is also engaged on issues such as the privatization of flood insurance and premium discounts for homeowners that engage in certain mitigation activities.[230]

2. Insurance and Mitigation

The insurance industry plays an important role in supporting innovation in hazard mitigation, or actions "to reduce loss of life and property by lessening the impact of disasters,"[231] which can reduce the risks and costs associated with natural hazards, for both the government and individuals.[232] The insurer-funded Insurance Institute for Business & Home Safety (IBHS)

---

[225] AIR Worldwide, *The Coastline at Risk: 2016 Update to the Estimated Insured Value of U.S. Coastal Properties* (2016), 6, *http://www.air-worldwide.com/Publications/White-Papers/documents/The-Coastline-at-Risk-2016*.

[226] "Protecting Your Businesses," FEMA, June 24, 2016, *https://www.fema.gov/protecting-your-businesses*.

[227] *See, e.g.*, Louisiana Department of Insurance, Office of the Commissioner, *Amended Declaration of Emergency (Emergency Rule 27)*, August 12, 2016, *http://www.ldi.la.gov/docs/default-source/documents/legaldocs/rules/rule27-cur-suspensionofcertain.pdf*.

[228] Memorandum from Delaware Department of Insurance to All Emergency CAT Adjusters, Notification/Licensing Requirements to Conduct Emergency Adjustment Work in Delaware (June 5, 2017), *http://insurance.delaware.gov/wp-content/uploads/sites/15/2017/06/AgentBulletinNo18-Revised.pdf*.

[229] *See, e.g.*, NAIC Catastrophe Response (C) Working Group, *Catastrophic Event/Emergency Measures Regulatory Guidelines* (undated draft), *http://naic.org/documents/cmte_c_cr_wg_170606_emergency_measures.pdf*.

[230] NAIC, Property and Casualty (C) Committee, *Agenda* (August 8, 2017), *http://www.naic.org/meetings1708/cmte_c_2017_summer_nm_agenda.pdf*.

[231] "What is Mitigation?" FEMA, March 1, 2017, *http://www.fema.gov/what-mitigation*. *See also* 44 C.F.R. § 201.2.

[232] A landmark 2005 study found that "a dollar spent on hazard mitigation provides the nation about $4 in future benefits." *See* Multihazard Mitigation Council, National Institute of Building Sciences, *Natural Hazard Mitigation*

conducts safety research which identifies and promotes "the most effective ways to strengthen homes, businesses, and communities against natural disasters and other causes of loss."[233] Insurers also may offer premium discounts to homeowners who conform to IBHS FORTIFIED standards for resilient construction, or who otherwise take action to mitigate their exposure to property loss before disasters occur.

Some states mandate discounts on insurance premiums when homeowners undertake specified mitigation measures.[234] For example, in 2016, Alabama established new mitigation discounts for structures meeting IBHS standards.[235] In May 2017, Oklahoma enacted legislation which requires insurers to make available (when actuarially justified) a premium discount or rate reductions to "any owner who builds or locates a new insurable property in the State of Oklahoma to resist loss due to tornado or other catastrophic windstorm events."[236]

Some other states encourage or permit mitigation discounts, but do not mandate specific rate reductions.[237] For example, effective January 1, 2017, New York insurers may reduce rates for homeowners who complete a "natural disaster preparedness, home safety and loss prevention course" or "for the installation of equipment, devices or other capital improvements to real property which can help eliminate or mitigate natural disaster damage, improve home safety or prevent other losses."[238]

3. Mitigation Framework Leadership Group

Treasury, through FIO, participates in the MitFLG, a national structure to coordinate mitigation efforts across the federal government. Among other things, the MitFLG is reassessing the federal approach to "mitigation investments," defined as risk management actions taken to avoid, reduce, or transfer natural hazard risks, including but not limited to actions involving insurance.[239] Over the course of the past year, the MitFLG has been preparing the Draft National

---

Saves: An Independent Study to Assess the Future Savings from Mitigation Activities, Volume 1 (2005), *http://www.floods.org/PDF/MMC_Volume1_FindingsConclusionsRecommendations.pdf*. The National Institute of Building Sciences is updating this study, with preliminary findings expected in late 2017. *See* "Multihazard Mitigation Council: Projects," National Institute of Building Sciences, *http://www.nibs.org/?page=mmc_projects*.

[233] *See* "About IBHS," IBHS, *https://disastersafety.org/about/*.

[234] *See, e.g.*, FIO, *Consumer Report*, 16 (noting premium discount availability in Florida, Louisiana, Maryland, and Mississippi, as well as income tax credit and building permit rebates in other areas).

[235] Ala. Dep't Ins. Bulletin 2016-07 (October 31, 2016), *http://www.aldoi.gov/pdf/legal/2016-07%20-%20Modification%20to%20Ala.%20Bulletins%202013-07,%202010-03%20and2009-07.pdf*.

[236] Okla. H.B. 1720 (2017) (to be codified at Okla. Stat. tit. 36 § 961).

[237] *See, e.g.*, United Policyholders, *State-by-State Mitigation Insurance Discount Statutes Summary*, *http://uphelp.org/sites/default/files/guides/2017.08.03_naic_mitigation_discount_handout.pdf*.

[238] *See* N.Y. Ins. Law § 2346(5)(b) (McKinney 2017). *See also* NYDFS, *Circular Letter No. 3* (March 15, 2017), *http://www.dfs.ny.gov/insurance/circltr/2017/cl2017_03.htm*.

[239] *See, e.g.*, "Mitigation Framework Leadership Group (MitFLG)," FEMA, April 28, 2017, *https://www.fema.gov/media-library/assets/documents/116787*.

Mitigation Investment Strategy, an initial set of proposed, voluntary recommendations to improve the coordination and effectiveness of mitigation investment nationwide by: (1) federal agencies and departments; (2) other public sector entities such as state, territorial, tribal, and local governments; and (3) private and non-profit sector entities such as businesses, philanthropies, foundations, and other non-governmental organizations. Throughout the remainder of 2017 and into 2018, the MitFLG will continue to solicit stakeholder feedback which will shape how the Investment Strategy develops.[240]

4. Flood Insurance and NFIP Reauthorization

Flooding is the most common, destructive, and costly form of natural catastrophe in the United States: 90 percent of U.S. natural disasters involve a flood.[241] In 2016, five separate flood-related events each exceeded $1 billion in economic losses, with total estimated 2016 flood losses of $17 billion.[242] Residential flood losses from Hurricane Harvey are expected to exceed all 2016 flood losses put together, with estimates going up to $37 billion in losses. Approximately 70 percent of those losses are expected to be uninsured.[243]

The NFIP is a federal insurance and risk management program, managed by FEMA. The NFIP aims to reduce the impact of flooding on private and public structures by providing affordable flood insurance to property owners in eligible communities and by encouraging communities to enforce effective floodplain management practices.[244] Effective January 1, 2017, and following a test-program in 2016, FEMA purchased reinsurance to help diversify and lessen the NFIP's net exposure to catastrophic losses.[245] As noted above, in 2016 FIO and FEMA jointly hosted stakeholder discussions about flood insurance and the NFIP.[246] The NFIP is subject to periodic reauthorization by Congress. The next statutory deadline for reauthorization is December 8, 2017.[247]

---

[240] *See* "National Mitigation Framework: National Mitigation Investment Strategy (NMIS)," FEMA, April 27, 2017, *https://www.fema.gov/national-mitigation-framework*.

[241] *See, e.g.*, FIO, *Natural Catastrophe Report*, 27; *Reauthorization of the National Flood Insurance Program* (statement of Roy E. Wright).

[242] CoreLogic, *2016 Natural Hazard Risk Summary and Analysis: Flooding* (2017), *http://www.corelogic.com/about-us/researchtrends/natural-hazard-risk-summary-and-analysis.aspx*.

[243] "Harvey Residential Flood Damage Up to $37 Billion: Corelogic," *Business Insurance*, September 1, 2017, *http://www.businessinsurance.com/article/20170901/NEWS06/912315587/Harvey-flood-losses-Corelogic-Texas*.

[244] *See, e.g.*, FEMA, *Fact Sheet: National Flood Insurance Program*, *https://www.in.gov/dhs/files/mit_natl_flood_ins.pdf*.

[245] *See, e.g.*, "National Flood Insurance Program's (NFIP) Reinsurance Program for 2017," FEMA, January 10, 2017, *https://www.fema.gov/nfip-reinsurance-program*.

[246] *See* Section II.B of this Report.

[247] Continuing Appropriations Act 2018 and Supplemental Appropriations for Disaster Relief Requirements Act 2017, Pub. L. 115-56, 131 Stat. 1129 (2017).

D. Financial Stability Oversight Council

The Council was established by Title I of the Dodd-Frank Act[248] and, among other functions, is charged 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.[249] The Council consists of ten voting members and five nonvoting members.

One of the Council's purposes is to identify risks to the financial stability of the United States that could arise from the material financial distress or failure, or ongoing activities, of nonbank financial companies.[250] Section 113 of the Dodd-Frank Act authorizes the Council to designate a nonbank financial company for supervision by the Federal Reserve and enhanced prudential standards if the Council determines that the company's material financial distress – or the nature, scope, size, scale, concentration, interconnectedness, or mix of its activities – could pose a threat to U.S. financial stability.[251]

On April 21, 2017, President Trump issued a Presidential Memorandum to the Secretary, directing that Treasury prepare and submit a report to the President within 180 days.[252] The Memorandum calls for Treasury to review the process established under the Dodd-Frank Act by which the Council determines that a nonbank financial company could pose a threat to the financial stability of the United States, as well as the process by which the Council designates financial market utilities as systemically important. Treasury is conducting a review and will submit a report to the President in response to the Memorandum.

E. Terrorism Risk Insurance Program

The September 11, 2001 terrorist attacks resulted in an insurance industry loss of about $43 billion (in 2015 dollars),[253] which at the time was the largest insurance 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.[254] In response, TRIA was enacted,[255] which created TRIP within Treasury.[256] TRIP was

[248] 12 U.S.C. § 5321(a).

[249] 12 U.S.C. § 5322(a)(1).

[250] 12 U.S.C. § 5322(a)(1)(A).

[251] 12 U.S.C. § 5323(a).

[252] Presidential Memorandum to the Secretary of the Treasury, Financial Stability Oversight Council (April 21, 2017), *https://www.whitehouse.gov/the-press-office/2017/04/21/presidential-memorandum-secretary-treasury*.

[253] *See* Jayleen R. Heft, "9/11 Attacks 15 Years Later: A Look at Losses by the Numbers," *PropertyCasualty360*, September 7, 2016, *http://www.propertycasualty360.com/2016/09/07/9-11-attacks-15-years-later-a-look-at-losses-by-th*.

[254] 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 United States Code, references in this Report are identified by the sections of the Act.

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

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 terrorism risk and build capacity to absorb future insurance losses.[257] Under the TRIP Reauthorization Act,[258] TRIP has been extended through December 31, 2020.

1. Regulations and Guidance

In addition to extending the termination date of TRIP, the TRIP Reauthorization Act reformed several provisions of TRIA, which required changes to the regulations governing TRIP. On April 1, 2016, Treasury issued a notice of proposed rulemaking that: (1) proposed revisions to 31 C.F.R. Part 50 to incorporate the new financial and operational provisions contained in the TRIP Reauthorization Act; (2) proposed new regulations regarding Treasury's data collection authority; and (3) proposed regulations governing the certification process following Treasury's 2015 report on improving the certification process.[259] Following consideration of public comments,[260] in December 2016, Treasury issued an interim final rule with a request for public comment concerning the certification process,[261] as well as final rules concerning the balance of TRIP's operations.[262]

The types of insurance subject to TRIP are defined, to the extent possible, with reference to the lines of insurance used by the NAIC in state insurance regulatory reporting.[263] In December 2016, Treasury issued guidance confirming that standalone cyber insurance – to the extent it is written in a line of insurance subject to TRIP – is subject to *all* TRIP requirements, including the

---

[256] For purposes of this Report, TRIP refers to the program as it is administered through regulations found in 31 C.F.R. pt. 50.

[257] TRIA § 101(b).

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

[259] Treasury, Terrorism Risk Insurance Program; Notice of Proposed Rulemaking, 81 Fed. Reg. 18949 (April 1, 2016), *https://www.federalregister.gov/documents/2016/04/01/2016-06920/terrorism-risk-insurance-program*; FIO, *The Process for Certifying an "Act of Terrorism" under the Terrorism Risk Insurance Act of 2002* (October 2015), *https://www.treasury.gov/initiatives/fio/reports-and-notices/Documents/2015%20Report%20on%20the%20Certification%20Process%20under%20the%20Terrorism%20-%20Production%20Version.pdf*.

[260] *See* "Terrorism Risk Insurance Program: Public Submissions," Regulations.gov, *https://www.regulations.gov/docketBrowser?rpp=25&so=DESC&sb=commentDueDate&po=0&dct=PS&D=TREAS-TRIP-2016-0005*.

[261] Treasury, Terrorism Risk Insurance Program; Interim Final Rule with Request for Comment, 81 Fed. Reg. 88592 (December 7, 2016), *https://www.federalregister.gov/documents/2016/12/07/2016-29313/terrorism-risk-insurance-program-certification*.

[262] Treasury, Terrorism Risk Insurance Program; Final Rule, 81 Fed. Reg. 93756 (December 21, 2016) (to be codified at 31 C.F.R. pt. 50), *https://www.federalregister.gov/documents/2016/12/21/2016-29987/terrorism-risk-insurance-program*.

[263] TRIA § 102(11); 31 C.F.R. § 50.4(w).

mandatory offer provisions and potential sharing of losses.[264] Treasury provided this clarification as a result of an update to the NAIC product matrix, which moved many cyber insurance policies from a line of insurance excluded from TRIP into a line of insurance generally subject to TRIP.[265] The guidance required insurers to be in compliance with TRIP requirements concerning the issuance of such policies by April 1, 2017.

2. 2017 Data Call

Under the TRIP Reauthorization Act, Treasury is required to annually collect terrorism risk insurance information from insurers in order to analyze the overall effectiveness of TRIP.[266]

FIO conducted a voluntary TRIP data call in 2016. The 2017 data call was the first mandatory TRIP data call conducted by FIO. FIO implemented a number of changes from the approach taken in the 2016 voluntary data call, with the goal of minimizing the burden upon participating insurers and making the reporting templates more consistent with industry operations. FIO developed multiple templates based on insurer classification; and certain insurers were excused from reporting either: (1) on the basis of their small volume of TRIP-eligible lines premium writings; or (2) because they were classified as captive insurers that write policies in TRIP-eligible lines of insurance, but did not provide any terrorism risk insurance subject to TRIP.[267] FIO collected certain data elements through third-party workers' compensation rating bureaus to minimize the burden on reporting insurers.[268]

Based on a comparison with information reported to state regulators, FIO estimates that almost all insurers required to participate in the 2017 TRIP data call provided data in response to the call.[269] FIO will analyze this information, along with information that will be obtained during the 2018 data call, in its Program Effectiveness report which is due on June 30, 2018.

---

[264] Treasury, Guidance Concerning Stand-Alone Cyber Liability Insurance Policies Under the Terrorism Risk Insurance Program, 81 Fed. Reg. 95312 (December 27, 2016), *https://www.federalregister.gov/documents/2016/12/27/2016-31244/guidance-concerning-stand-alone-cyber-liability-insurance-policies-under-the-terrorism-risk*.

[265] 81 Fed. Reg. at 95313.

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

[267] Treasury, Data Collection and Comments in Aid of Analyses of the Terrorism Risk Insurance Program, 81 Fed. Reg. 95310 (December 27, 2016), *https://www.federalregister.gov/documents/2016/12/27/2016-31238/data-collection-and-comments-in-aid-of-analyses-of-the-terrorism-risk-insurance-program*.

[268] Treasury, 2017 Data Collection under the Terrorism Risk Insurance Program, 82 Fed. Reg. 20420 (May 1, 2017), *https://www.federalregister.gov/documents/2017/05/01/2017-08716/2017-data-collection-under-the-terrorism-risk-insurance-program*.

[269] As of the date of this Report, FIO estimates that insurers reporting in the 2017 TRIP data call comprise over 94 percent, by premium, of the insurer groups or companies expected to report on the small insurer data template, and over 99 percent, by premium, of the insurer groups or companies expected to report on the non-small insurer data template.

3. Small Insurer Study

FIO relied upon information from the 2017 TRIP data call to produce a report on the competitiveness of small insurers in the terrorism risk insurance marketplace. This report was submitted to Congress on June 30, 2017.[270] In the report, FIO concluded that small insurers form a significant component of the market for terrorism risk insurance, but that their market share for the lines of insurance subject to TRIP has declined over time. Small insurers tend to charge less than non-small insurers for terrorism risk insurance, and experience lower take-up rates than do larger insurers. FIO also found that the Program Trigger[271] could have the effect of preventing TRIP reimbursement for small insurers that sustain terrorism losses in excess of their TRIP deductibles, and that most small insurers do not purchase private reinsurance in amounts sufficient to offset this exposure. In the report, FIO also addressed the special terrorism risk challenges presented for small insurers in the workers' compensation line of insurance, which is subject to potentially unlimited losses.

4. Advisory Committee on Risk-Sharing Mechanisms

ACRSM is a federal advisory committee established by the TRIP Reauthorization Act. ACRSM is statutorily required to provide FIO with advice, recommendations, and encouragement with respect to the creation and development of non-governmental risk-sharing mechanisms to protect against losses arising from acts of terrorism.[272] The ACRSM is comprised of nine members who serve as representatives of prominent insurers, reinsurers, and capital market 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).[273] To date, the Committee has held three public meetings in 2017 to gather information from industry participants. These meetings focused 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.

F. The Department of Labor Fiduciary Rule

In April 2016, the DOL issued a final rule (collectively, with its related exemptions, the Fiduciary Rule) expanding the types of retirement investment advice covered by the fiduciary

---

[270] FIO, *Study of Small Insurer Competitiveness*.

[271] The Program Trigger is the minimum amount of aggregate industry insured losses resulting from a certified act (or acts) of terrorism that must occur in a calendar year before any federal payments can be made.

[272] TRIP Reauthorization Act § 110.

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

provisions of ERISA.[274] One of the related exemptions is the Best Interest Contract Exemption (BICE) from the prohibited transactions provisions of ERISA.[275] To satisfy the conditions of the BICE, during the transition period created by DOL, financial advisers who receive conflicted compensation for providing retirement advice must adhere to certain Impartial Conduct Standards, which include providing advice in the investor's best interest, charging no more than reasonable compensation, and avoiding misleading statements.

A person who provides investment advice to employer plans or IRAs regarding annuities[276] is subject to the fiduciary provisions of ERISA. During the transition period, DOL permitted transactions involving Fixed Index Annuities to continue under the insurance industry's longstanding exemption, PTE 84-24, rather than the BICE, and DOL confirmed that Independent Marketing Organizations (IMOs) can be paid for transactions that occur under PTE 84-24.[277]

On January 19, 2017, the DOL issued a new proposed BICE for Insurance Intermediaries which would be available to insurance intermediaries such as IMOs that meet certain thresholds.[278] The comment period for the proposed exemption closed on February 21, 2017.

G. Long-Term Care Insurance

Long-term care refers to the means of meeting the health or personal care needs of individuals who are unable to care for themselves without assistance. Federal programs currently finance almost two-thirds of long-term care, but since the 1970s, insurers also have offered LTCI in the

---

[274] Definition of the Term "Fiduciary;" Conflict of Interest Rule-Retirement Investment Advice, 81 Fed. Reg. 20945 (April 8, 2016), *https://www.federalregister.gov/documents/2016/04/08/2016-07924/definition-of-the-term-fiduciary-conflict-of-interest-rule-retirement-investment-advice*.

[275] Adoption of Class Exemption, Best Interest Contract Exemption, 81 Fed. Reg. 21002 (April 8, 2016), *https://www.federalregister.gov/documents/2016/04/08/2016-07925/best-interest-contract-exemption*. The exemption provides relief from provisions of ERISA and the Internal Revenue Code that generally would otherwise prohibit fiduciaries with respect to employee benefit plans and IRAs from engaging in self-dealing and receiving compensation from third parties in connection with transactions involving the plans and IRAs.

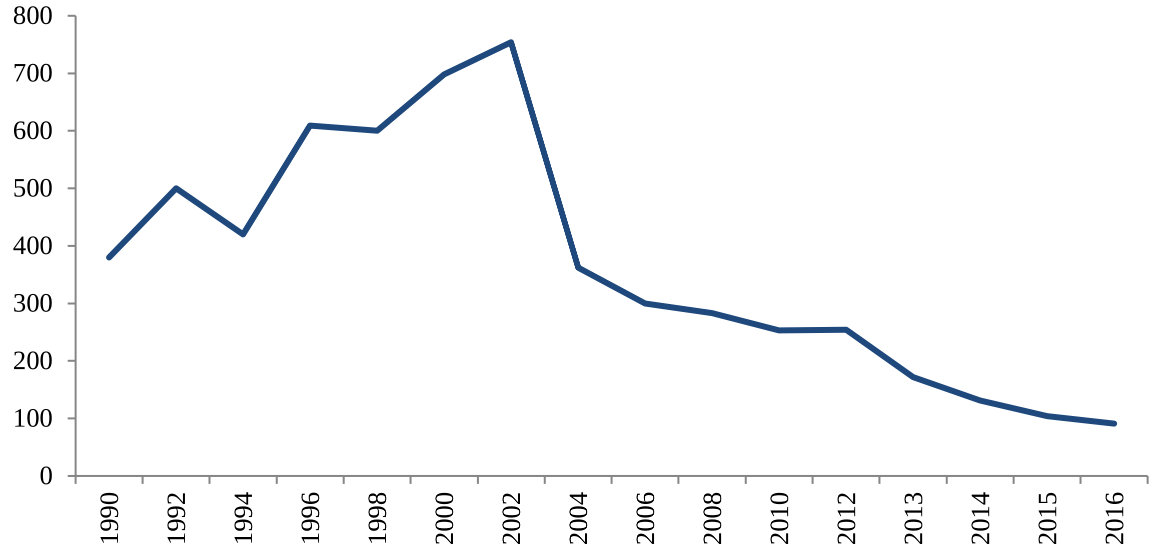
[276] In an annuity contract, in exchange for a premium, an insurer agrees to make scheduled payments for the lifetime of one or more persons, or for a specified number of years. The ability of annuities to provide guaranteed lifetime income is a unique feature and is particularly relevant in the context of retirement planning, where individuals may seek to protect against the risk of outliving their assets. U.S. life insurers sold approximately $222 billion of individual deferred annuities in 2016, of which an estimated $138 billion, or 62 percent, were IRAs or annuities issued in connection with employer plans. *See* LIMRA, *U.S. Individual Annuities 2016, 4th Quarter.*

[277] DOL, Employee Benefits Security Administration, *Conflict of Interest FAQs (Transition Period)* (May 2017), 7, *https://www.dol.gov/sites/default/files/ebsa/about-ebsa/our-activities/resource-center/faqs/coi-transition-period-1.pdf*.

[278] Notification of Proposed Class Exemption, Proposed Best Interest Contract Exemption for Insurance Intermediaries, 82 Fed. Reg. 7336 (January 19, 2017), *https://www.federalregister.gov/documents/2017/01/19/2017-01316/proposed-best-interest-contract-exemption-for-insurance-intermediaries*.

private market to protect against the risk of needing long-term care at older ages.[279] As illustrated in Figure 42, sales of new LTCI policies peaked in the early 2000s but have since experienced a steep decline which accelerated in the past five years. The compound average annual LTCI premium growth rate from 2011 to 2016 was negative 16 percent. Individual LTCI sales ($228 million) and the number of Americans purchasing LTCI (91,000) each fell by 13 percent between 2015 and 2016.

Figure 42: Annual Number of New Individual LTCI Policies (in thousands)



Sources: LIMRA; Marc A. Cohen, "The Current State of the Long-Term Care Insurance Market" (presentation, 14th Annual Intercompany Long-Term Care Insurance Conference, Orlando, FL, March 16-19, 2014), *http://iltciconf.org/2014/index_htm_files/44-Cohen.pdf*

Terminations of existing policies have also contributed to the reduction of LTCI policies in force. As of the end of 2016, an estimated 4.7 million Americans owned LTCI policies, representing a one percent decline from year-end 2015 and reversing a decades-long trend of increasing or stable policy counts.[280]

The number of insurers offering individual LTCI has declined from more than 100 in the early 2000s to about a dozen as of year-end 2015.[281] Seven of the ten leading carriers in 2001 have

---

[279] In 2015, U.S. spending on long-term care was funded primarily by two federal programs, Medicare and Medicaid (63 percent), with a 20 percent contribution from direct out-of-pocket spending, and 3 percent from private LTCI. Peter Gallanis, et al., "State of the Long-Term Care Insurance Industry: NOLHGA Presentation to the NAIC" (presentation, NAIC, March 30, 2017), *http://www.naic.org/documents/cmte_e_mlwg_related_state_of_ltc_industry.pdf*.

[280] LIMRA, *U.S. Individual Long-Term Care Insurance (2016 Annual Review)* (February 28, 2017).

[281] Bipartisan Policy Center, *Initial Recommendations to Improve the Financing of Long-Term Care* (February 2016), 10, *https://cdn.bipartisanpolicy.org/wp-content/uploads/2016/12/BPC-Health-Long-Term-Care-Financing-Recommendations.pdf*. Of the top five insurers receiving premiums earned from existing policies in 2015, only three continue to offer individual LTCI. *See* A.M. Best, *Special Report: Penn Treaty Liquidation Presents Potential*

since dropped out of the market, and market share of the top ten has increased from 66 percent in 2001 to 92 percent in 2015.[282] In November 2016, the second-largest writer of individual LTCI announced that it would discontinue new sales of its standalone product due to low sales volume.[283] In June 2017, a smaller insurer with industry-leading LTCI growth rates informed distributors that it would discontinue sales of its current product in all states for at least the remainder of 2017.[284]

Box 8: Penn Treaty American Corporation

The failure of two operating subsidiaries of Penn Treaty could be one of the largest U.S. insurer insolvencies to date, based on the size of the gap between liabilities and assets. In addition to creating significant costs for industry participants, and in view of market conditions, this insolvency has caused regulators and the insurance industry to re-assess important aspects of both insurer insolvencies and LTCI.

Penn Treaty is the holding company for Pennsylvania-domiciled Penn Treaty Network America Insurance Company and American Network Insurance Company, and New York-domiciled American Independent Network Insurance Company of New York.[285] The company began doing business in 1972 and quickly became one of the largest issuers of LTCI. Penn Treaty's book of LTCI business peaked in 2000, with about 250,000 policies in force and $363 million in annual premiums written across all 50 states and the District of Columbia.[286] As with most LTCI writers, Penn Treaty discovered that its premium rates had been set too low, based on faulty assumptions about interest rates, lapse rates, and policyholders' longevity (which increased the cost of benefits).[287] The company was not completely successful in its efforts to obtain regulatory approvals to raise premiums. By 2008, the Pennsylvania subsidiaries were on the verge of insolvency. In October 2008, Penn Treaty's Pennsylvania operating subsidiaries ceased writing new business.

The Pennsylvania Department of Insurance (PDI) petitioned the Pennsylvania Commonwealth Court for an order of liquidation in 2008, but the judge concluded that rehabilitation was more appropriate, and Penn Treaty's Pennsylvania subsidiaries were placed in run-off and continued to

---

Shock to Health Marketplace (December 1, 2016), *http://www3.ambest.com/ambv/sales/bwpurchase.aspx?record_code=256386*.

282 Gallanis, et al., "State of the U.S. Long-Term Care Insurance Industry."

283 "Manulife Reports 3Q16 Net Income of $1.1 Billion and Core Earnings of $1 Billion, Strong Growth in Asia, and Positive Net Flows in Wealth and Asset Management," *Manulife*, November 10, 2016, *http://www.manulife.com/servlet/servlet.FileDownload?file=00P5000000hybt4EAA*.

284 Tim Zawacki, "2016's Fastest-Growing Individual Long-Term Care Writer to Take a Breather," *SNL Financial*, June 9, 2017, *https://www.snl.com/web/client?auth=inherit#news/article?id=40961964*.

285 The New York subsidiary is not part of the Penn Treaty liquidation.

286 *See* Allison Bell, "What Agents Need to Know about the Penn Treaty Liquidation," *ThinkAdvisor*, March 6, 2017, *http://www.thinkadvisor.com/2017/03/06/what-agents-need-to-know-about-the-penn-treaty-liq*.

287 Lapse rate refers to policies that are terminated due to the policyholder's failure to pay the premium when due.

pay policyholder claims. Following additional petitions for liquidation, the judge issued orders in March 2017 allowing the PDI to liquidate the companies. By this point, the companies' assets had declined to roughly $500 million, with policyholder liabilities of $4.5 billion spread over approximately 76,000 policyholders.[288] According to the PDI's court filings, Penn Treaty Network American Insurance Company is projected to run out of assets in 2018, and the smaller American Network Insurance Company is projected to run out of assets in 2023.[289]

When a national insurer such as Penn Treaty is liquidated, remaining claims are paid by the states' guaranty association system, subject to benefit caps that vary by the states in which affected policyholders reside. The obligations of each state guaranty association are funded by pro rata assessments against insurers licensed to conduct business in that state. Actuarial models estimate that approximately 50 percent of Penn Treaty's policyholders will have claims in excess of the guaranty associations' benefit caps.[290]

In their first quarter 2017 results, a number of health insurers reported accruals for guaranty association assessments for the Penn Treaty liquidation. These accruals reduced earnings for the period. Sources expect the national shortfall to ultimately result in assessments on insurers as high as $2.7 billion on a discounted basis.[291] Moreover, because LTCI is classified as a health insurance product under guaranty fund statutes, the bulk of that cost will be funded by health insurers rather than the life insurance industry that sold most of it.[292] Health insurers are concerned about the cost they will bear to support the liquidation of carriers that issued products they view as not part of their lines of insurance. Insurers that are assessed by a guaranty association may receive a premium tax credit for the assessments, but not all states offer such a tax credit. A group of health insurers has intervened in the Penn Treaty liquidation proceedings

---

[288] Commissioner Teresa Miller, "Penn Treaty Network America Insurance Company and American Network Insurance Company: Insurance Commissioner's Statement," official statement, *Pennsylvania Insurance Department*, March 1, 2017, *http://www.insurance.pa.gov/Regulations/LiquidationRehab/Documents/Penn%20Treaty/PENN_TREATY_MARCH_1_2017_INSURANCE_COMMISSIONER_STATEMENT.pdf*.

[289] Verified Petitions to Convert Rehabilitation to Liquidation, at 6, In re: Penn Treaty Network America Ins. Co. in Rehabilitation, Docket No. 1 PEN 2009, and In re: American Network Ins. Co. in Rehabilitation, Docket No. 1 ANI 2009 (Pa. Commw. Ct. July 27, 2016), *http://www.penntreaty.com/Liquidation/CourtDocuments.aspx*.

[290] PDI, "Insurance Commissioner Announces Court Approval of Penn Treaty and American Network Insurance Companies; Assures Policyholders Claims Will Be Paid by State Guaranty Funds Pursuant to State Law," news release, March 1, 2017, *http://www.media.pa.gov/Pages/Insurance-Details.aspx?newsid=228*.

[291] *See, e.g.*, Memorandum from Vincent L. Bodnar to Charles Gullickson (Penn Treaty/ANIC Task Force Chair) and Richard Klipstein (NOLHGA) (April 10, 2017), 3, *https://www.nolhga.com/resource/file/costs/NOLHGAMemorandum20170410.pdf*.

[292] Life insurers may be licensed to sell both life and health insurance products. In the case of LTCI, most policies were sold by companies licensed in this manner. Many providers of major medical coverage are not guaranty association members and therefore not subject to assessments under current law.

and may initiate litigation over some disputed coverage and administrative issues.[293] The involvement and objections of the health insurers have prompted state regulators to re-examine guaranty fund laws. The NAIC Executive Committee approved a request to modify the existing Life and Health Insurance Guaranty Association Model Act in August 2017.[294] Specifically, the NAIC is looking to revise this model act to address concerns that other LTCI carriers could become insolvent in the future, again leaving health insurers exposed to funding losses on business they did not write.[295] Regulators are considering ways to include a broader segment of the life insurance industry, and perhaps health maintenance organizations, in future assessments. Options could include aggregating the life annuity and health insurance accounts for LTCI assessments or requiring L&H insurers to share the assessment burdens.[296]

Persistently low interest rates, longer lifespans, and lower than expected policy lapses have eroded the profitability of LTCI and led to significant financial losses for some insurers.[297] To improve the operating results of their ongoing and legacy LTCI businesses, many insurers continue to seek state regulatory approval of premium rate increases on existing policies. In the first quarter of 2017 alone, ten LTCI carriers filed for approval of rate increases aggregating to nearly $49 million and affecting approximately 87,000 policyholders.[298] Obtaining approval of rate increases can be a lengthy and uncertain process, as state insurance regulators weigh insurer solvency against consumer hardship.

Part of the industry's response to the challenging LTCI market environment has been the introduction of new product designs intended to greatly reduce or eliminate the need for future premium rate increases. In addition, a growing number of life insurers now offer "combination" products featuring a life insurance policy (or, less frequently, an annuity) with a long-term care benefit. Consumers who dislike the "use it or lose it" element of traditional LTCI can obtain

[293] *See, e.g.*, Stipulation and Order of Intervention (Pa. Commw. Ct. June 19, 2015), Application of Health Insurers for Limited Intervention in Order to Seek Determination of Authority to Use Estate Assets to Pay "Uncovered Benefits" in Liquidation (Pa. Commw. Ct. February 28, 2017), In Re: Penn Treaty Network America Ins. Co. in Rehabilitation, Docket No. 1 PEN 2009 and In re: American Network Ins. Co. in Rehabilitation, Docket No. 1 ANI 2009, http://www.penntreaty.com/Liquidation/CourtDocuments.aspx.

[294] NAIC, *Executive (EX) Committee: Meeting Summary Report.*

[295] *See, e.g.*, NAIC, *Receivership Model Law (E) Working Group: Conference Call* (July 10, 2017), http://www.naic.org/meetings1708/cmte_e_mlwg_2017_summer_nm_materials.pdf?1503006981789.

[296] NAIC, *Receivership Model Law (E) Working Group: Conference Call*.

[297] *See, e.g.*, Genworth Financial, Inc., "Genworth Financial Announces Third Quarter 2016 Results," news release, November 3, 2016, http://investor.genworth.com/investors/news-releases/archive/archive/2016/Genworth-Financial-Announces-Third-Quarter-2016-Results/default.aspx ($435 million pre-tax charge based on review of LTCI claim reserves); Manulife Financial Corp., "Manulife Reports 2016 Net Income of $2.9 Billion and Core Earnings of $4.0 Billion (Up 34% and 17%, Respectively, Compared with 2015), Strong Top Line Growth and a Dividend Increase of 11%," news release, February 9, 2017, http://www.manulife.com/servlet/servlet.FileDownload?file=00P5000000kXAdgEAG (reserve strengthening of $453 Canadian post-tax including the impact of updated actuarial assumptions for John Hancock LTCI business).

[298] Jason Woleben, "Northwestern Mutual Led the Way in Long-Term Care Rate Increases in Q1," *SNL Financial*, May 8, 2017, https://www.snl.com/InteractiveX/articleabstract.aspx?id=40579694.

protection that provides life insurance benefits even if the long-term care benefit is never triggered, while the insurer is less exposed to the financial risks plaguing the standalone product. Combination products have overtaken traditional LTCI, with premiums for combination products totaling over $3.6 billion and more than 340,000 new lives covered in 2016.[299]

State insurance regulators and the NAIC are actively reviewing a range of LTCI issues and potential policy changes to stabilize and potentially grow the private market. Insurance departments in Florida, Maryland, and Pennsylvania have conducted public hearings on specific requests for rate increases or LTCI generally.[300] In 2016, as part of its Retirement Security Initiative, the NAIC organized the Long Term Care Innovation Subgroup to examine the future of LTCI, what type of LTCI products should be on the market going forward, and to whom those products should be marketed.[301] In April 2017, the Subgroup released a list of ten federal public policy changes raised by various stakeholders that could help to increase private long-term care financing options for middle-income Americans.[302] Also in April 2017, the NAIC established a Joint Long Term Care Insurance Task Force and charged the Task Force with a number of objectives, including more rigorous assessment of the solvency of LTCI writers, assessing state activities regarding rate increase requests and identifying common elements to achieve greater transparency and predictability, and coordinating state actions aimed at revising state guaranty fund laws.[303]

H. Additional State-Level Regulatory Developments

State-level regulatory developments are important for understanding the U.S. insurance industry because the business of insurance in the United States is regulated primarily at the state level.[304] This section discusses state regulatory and legislative developments not addressed elsewhere in the report with respect to (1) group capital; (2) life insurance and reserving requirements for life insurers; (3) unclaimed death benefits under life insurance policies; and (4) NAIC activities.

---

[299] LIMRA, *U.S. Individual Life Combination Products (Annual Review 2016)* (May 23, 2017), 3.

[300] "Long Term Care Public Rate Hearings," Florida Office of Insurance Regulation, August 2016, *http://www.floir.com/Sections/LandH/LongTermCareHearing.aspx;* "Long-Term Care Hearing to be Held March 6, 2017," Maryland Insurance Administration, *http://insurance.maryland.gov/Consumer/Pages/Long-Term-Care-Hearing-March-6-2017.aspx;* "Long-Term Care Public Hearing – March 6, 2016," Pennsylvania Insurance Department, *http://www.insurance.pa.gov/Pages/Long-Term-Care-Hearing.aspx.*

[301] "Long Term Care," NAIC and CIPR, *http://www.naic.org/cipr_topics/topic_long_term_care.htm*.

[302] NAIC Long Term Care (B) Subgroup, *Long Term Care Federal Policy Options to Present to Congress*, April 3, 2017, *http://www.naic.org/documents/government_relations_ltc_fed_policy_opt.pdf.*

[303] NAIC, *Report of the Executive (EX) Committee*, April 9, 2017, Attachment Three, *http://www.naic.org/meetings1704/cmte_ex_plenary_2017_spring_nm_materials.pdf* .

[304] *See, e.g.*, the McCarran-Ferguson Act, 15 U.S.C. § 1011 (2015); the Gramm-Leach Bliley Act, 15 U.S.C. § 6711 (2015); NAIC, *State Insurance Regulation* (2011), *http://www.naic.org/documents/topics_white_paper_hist_ins_reg.pdf*.

1. Domestic Regulatory Capital Initiatives

This section discusses the importance of capital in the context of insurance regulation, and outlines the current U.S. regulatory treatment of capital and ongoing developments at the state and federal levels. Capital serves an important role for insurers by providing them with the financial resources to make payments for future policyholder claims that may exceed reported estimates of claims and obligations. Developments on capital standards in the international context are summarized in Section V.C.3.
In the United States, state insurance laws and regulations impose minimum capital requirements for insurers on a legal entity basis. State regulators have not mandated a capital requirement for insurance groups. State and federal regulators, however, are currently considering adoption of a group capital standard or assessment. State insurance regulators are working on a group capital calculation, as a regulatory tool, which would use a so-called "inventory approach."[305] The Federal Reserve is working on two approaches to group capital standards for companies with significant insurance activities that are under its supervision: (1) a "building block approach" that would apply to insurance groups that are regulated by the Federal Reserve because they own a depository institution; and (2) a "consolidated approach" that would apply to nonbank financial companies which are significantly engaged in insurance and have been designated for Federal Reserve supervision by the Council.[306]

The inventory approach and the building block approach employ similar methodologies for arriving at a consolidated group capital amount. By aggregating legal entity capital requirements based on existing local regulatory measures (e.g., using state-based risk-based capital – RBC – measures for U.S.-based legal entities) with certain adjustments, the inventory and the building block approaches would leverage existing risk-sensitive capital frameworks. Such an aggregation approach in the United States would build on a number of existing features, including: (1) the extensive investment made by the state-based supervisory regime in statutory reporting processes and RBC requirements; (2) related reporting formats and schedules; (3) a national data repository administered by the NAIC; and (4) public access through the NAIC and private data integrators.

As this work moves forward, expectations are that both state and federal approaches will use existing regulatory capital calculations for entities within the holding company structure, rather than developing replacement or additional standards, to achieve a consolidated view of capital. For example, recognizing that the work is in its early stages, it appears that the NAIC's inventory approach to its group capital assessment will use: (1) RBC for U.S. legal entity insurers; (2) jurisdiction-appropriate calculations for non-U.S. legal entities, adjusted for comparability

---

[305] *See, e.g.*, NAIC Memorandum, Questions on Various Aspects of the Inventory Method (August 22, 2016), *http://www.naic.org/documents/committees_e_grp_capital_wg_exposure_memo_inventory_method_w_questions.pdf*.

[306] *See, e.g.*, Board of Governors of the Federal Reserve System; Advance Notice of Proposed Rulemaking, 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*.

with the use of scalars; (3) other sectoral requirements for regulated non-insurers such as the Basel Committee on Banking Supervision requirements for banking entities; and (4) a proxy for non-regulated entities.

2. Life Insurance Reserving Requirements

January 1, 2017 marked two significant milestones in the regulation of reserves[307] established by U.S. insurers to support their life insurance policy liabilities. After years of work at the NAIC and among state insurance regulators, principles-based reserving (PBR) became effective for most life insurance policies issued on or after January 1, 2017. The NAIC has explained that PBR "replaces the current formulaic approach to determining policy reserves with an approach that more closely reflects the risks of highly complex products" available in the marketplace, and that PBR is expected to "right-size" reserves.[308]

On the same date, the 2017 CSO also became effective, replacing the 2001 CSO mortality tables.[309] The NAIC has established a three-year transition period for both PBR and the 2017 CSO. Accordingly, although insurers may voluntarily implement PBR, the 2017 CSO, or both as early as January 1, 2017, and may do so at different times for different policy types, insurers must fully implement both regimes by January 1, 2020.

Less than one year into the three-year transition period, the effect of these developments on reserve levels, as well as the resulting impact on premiums, remains uncertain. According to one rating agency, the complexity of PBR and questions regarding the required levels of tax reserves will contribute to low PBR adoption rates during the transition.[310] Reserves may be subject to increased volatility under PBR due to changes in company assumptions that evolve after policies are issued. In general, because of conservatism built into the 2001 CSO mortality tables, the 2017 CSO is expected to lower term life insurance premiums, particularly for longer level term

---

[307] Reserves are balance sheet liabilities established by insurers to recognize obligations to pay policy benefits in the future. The determination of reserves involves complex actuarial calculations and estimations based on past experience, and may include additional margins for conservatism or regulatory prudence.

[308] "Principle-Based Reserving," NAIC and CIPR, June 9, 2017, *http://www.naic.org/cipr_topics/principle_based_reserving_pbr.htm*. Development of PBR was driven in part by concerns over the use of captive reinsurance arrangements to lower reserves that would otherwise be required for certain products perceived to require overly conservative or redundant reserves under the traditional formulas. *See* "Captive Insurance Companies," NAIC and CIPR, June 12, 2017, *http://www.naic.org/cipr_topics/topic_captives.htm*. *See also* FIO, *How to Modernize and Improve the System of Insurance Regulation in the United States* (December 2013), 32-34, *https://www.treasury.gov/initiatives/fio/Documents/How%20to%20Modernize%20and%20Improve%20the%20System%20of%20Insurance%20Regulation%20in%20the%20US.pdf* (recommendations concerning captive life reinsurance).

[309] *See* Mary Bahna-Nolan, "2017 CSO Implementation: Product Implications and Considerations," *Product Matters*, July 2016, *https://www.soa.org/Library/Newsletters/Product-Development-News/2016/july/pro-iss104-bahna-nolan.aspx*.

[310] A.M. Best, "U.S. Life Insurers Move Slowly Into Principle-Based Reserves Era," news release, July 5, 2017, *http://news.ambest.com/presscontent.aspx?altsrc=14&refnum=25434*.

premiums and older issue ages.[311] However, the timing of 2017 CSO implementation will also vary by company based on factors such as product segment, age mix, and implementation costs.[312]

3. Unclaimed Death Benefits.

Since 2009, life insurers' use of the Social Security Death Master File has been subject to regulatory review and legislation.[313] To date, state insurance regulators have either reached settlements with or concluded the investigation of 28 of the top 40 companies, constituting 80 percent of the total life insurance market, based on market share.[314] In addition, at least 27 states have adopted some version of the Unclaimed Life Insurance Benefits Act, a model law drafted by the National Conference of Insurance Legislators (NCOIL).[315] A subgroup of the NAIC's Unclaimed Life Insurance Benefits (A) Working Group drafted a model law as well, but suspended its work in March 2017 following disagreement on whether the model law would apply only to life insurance policies and annuity contracts issued after the law's effective date (i.e., "prospective application") or to existing business as well (i.e., "retroactive application").[316] In August 2017, the NAIC disbanded the Working Group in view of the number of states that had already taken action on unclaimed life insurance benefits and the lack of consensus necessary to adopt the draft model law.[317]

In August 2016, the NAIC launched a Life Insurance Policy Locator application to help consumers find lost life insurance policies.[318] Between November 4, 2016 and June 30, 2017, 26,333 queries were made and 4,144 matches found, totaling $41,712,670 of benefits.[319]

---

[311] Timothy Pfeifer, "The Outlook for Term Life," *Pfeifer Advisory*, February 29, 2016, *http://www.pfeiferadvisory.com/blog/2016/2/29/the-outlook-for-term-life*.

[312] Bahna-Nolan, "2017 CSO Implementation," 14.

[313] *See, e.g.*, FIO, *Consumer Report*, 44-45.

[314] California Department of Insurance, "Another Major Insurer Agrees to Death Master File Settlement," news release, January 30, 2017, *http://www.insurance.ca.gov/0400-news/0100-press-releases/2017/release009-17.cfm*.

[315] *See* "States Adopting NCOIL Unclaimed Life Insurance Benefits Act," *Keane's Unclaimed Property Blog*, February 23, 2012, *https://www.keaneunclaimedproperty.com/blog/states-proposing-ncoil-unclaimed-life-insurance-benefits-act*.

[316] *See* "Unclaimed Life Insurance Benefits," NAIC, May 15, 2017, *http://www.naic.org/cipr_topics/topic_unclaimed_life_insurance_benefits.htm*.

[317] NAIC, *Life Insurance and Annuities (A) Committee: Meeting Summary* (August 7, 2017), *http://naic.org/meetings1708/cmte_a_2017_summer_nm_summary.pdf*.

[318] NAIC, "NAIC Launches Life Insurance Policy Locator Application," news release, August 26, 2016, *http://www.naic.org/Releases/2016_docs/lost_policy_locator_news_release.htm*.

[319] NAIC, *Life Insurance and Annuities (A) Committee: Meeting Summary Report.*

4. NAIC Activities and State Adoption of Model Laws[320]

The Financial Regulation Standards and Accreditation Program of the NAIC is a peer-review process designed to develop and maintain standards to promote effective insurance company financial solvency regulation.[321] In order to be accredited, a state must adopted specified NAIC model laws and regulations, or substantially similar laws which include the key provisions identified in the accreditation standards.[322] As of January 1, 2017, NAIC accreditation requirements were expanded to include the Model Risk Retention Act (#705), the 2011 revisions to the Risk-Based Capital for Insurers Model Act (#312), and Section 4B(10) of the Model Regulation to Define Standards and Commissioner's Authority for Companies Deemed to be in Hazardous Financial Condition (#385).[323] All fifty states, the District of Columbia, and Puerto Rico are accredited as of July 2017.[324]

The NAIC also is reviewing lender-placed insurance. Lender-placed insurance – also known as "creditor-placed" or "force-placed" insurance – is an insurance policy placed by a lender, bank, or loan servicer on a home or personal property when the property owner's own insurance has lapsed or been deemed insufficient by the lender.[325] The NAIC charged a working group with determining whether changes to its existing Creditor-Placed Insurance Model Act are warranted.[326] In August 2017, the NAIC Executive Committee approved the further development of the Creditor-Placed Real Property Insurance Model Act and the model law

[320] For more discussion of NAIC domestic activities, *see* Section IV.A.2.a (development of cybersecurity model law), Box 6 (regulatory response to natural disasters), and Box 7 (potential amendments to guaranty association model acts).

[321] "Accreditation," NAIC, January 6, 2017, http://www.naic.org/cipr_topics/topic_accreditation.htm. *See also* NAIC, *Financial Regulation Standards and Accreditation Program* (August 2017), http://www.naic.org/documents/cmte_f_frsa_pamphlet.pdf.

[322] *See, e.g.*, NAIC, *Accreditation Program*, 7-12.

[323] NAIC, *New or Revised Financial Solvency Regulation-Related Model Laws and Regulations Status Regarding Consideration for Accreditation as of August 10, 2017*, http://www.naic.org/documents/committees_f_related_model_law_stat_accred.pdf.

[324] "Financial Regulation Standards and Accreditation Program – Accredited U.S. Jurisdictions," NAIC, http://www.naic.org/cmte_f_accredited_states.htm.

[325] *See, e.g.*, "Force-Placed Insurance: What You Need to Know," NYDFS, October 1, 2015, http://www.dfs.ny.gov/consumer/forced-placed.htm; "Lender-Placed Insurance," NAIC and CIPR, June 2, 2017, http://www.naic.org/cipr_topics/topic_lender_placed_insurance.htm. *See also* FIO, *Annual Report on the Insurance Industry* (2015), 69-70, https://www.treasury.gov/initiatives/fio/reports-and-notices/Documents/2015%20FIO%20Annual%20Report_Final.pdf; FIO, *Annual Report on the Insurance Industry* (2014), 36, https://www.treasury.gov/initiatives/fio/reports-and-notices/Documents/2014_Annual_Report.pdf.

[326] *See* "Creditor-Placed Insurance Model Act Review (C) Working Group," NAIC, http://www.naic.org/cmte_c_cpimar_wg.htm. *See also* Creditor-Placed Insurance Model Act (NAIC 1996), http://www.naic.org/store/free/MDL-375.pdf.

development request for a separate model law for lender-placed insurance placed on real property mortgage loans pursuant to the working group's recommendation.[327]

In August 2017, the NAIC's Financial Stability Task Force created a Liquidity Assessment Subgroup.[328] The Task Force explained in its proposal to create the subgroup that state regulators have little substantive data on insurers' liquidity risk, do not require liquidity stress testing, and therefore do not have a common measurement for evaluating insurers' level of liquidity risk. The task force noted concerns about how larger insurers in particular might perform when subject to liquidity strains and about the spill over impacts to broader financial markets.[329] Accordingly, the task force charged the new subgroup with reviewing existing available data related to liquidity risk, identifying any data gaps based on regulatory needs, and constructing a liquidity stress testing framework proposal, as well as specifying the proposed cohort of companies to which the framework would apply.[330]

Finally, the NAIC is considering incorporation or substitution of a best interest or other higher standard into its model regulation on annuity suitability.[331]

---

[327] NAIC, *Executive (EX) Committee: Meeting Summary Report* (August 7, 2017), *http://naic.org/meetings1708/cmte_ex_2017_summer_nm_summary.pdf*; NAIC, *Request for NAIC Model Law Development*, *http://www.naic.org/documents/index_committees_model_req_lender-placed_170817.pdf*.

[328] NAIC, *Financial Stability (EX) Task Force: Meeting Summary Report* (August 6, 2017), *http://www.naic.org/meetings1708/cmte_ex_financial_stability_tf_2017_summer_nm_summary.pdf*.

[329] NAIC, *FSTF Proposal for Liquidity Assessment Subgroup* (August 6, 2017), *http://naic.org/meetings1708/cmte_ex_financial_stability_tf_2017_summer_nm_materials_3.pdf*.

[330] NAIC, *FSTF Proposal*.

[331] *See* NAIC, *Annuity Suitability (A) Working Group: Meeting Summary Report* (August 6, 2017), *http://www.naic.org/meetings1708/cmte_a_2017_summer_nm_materials.pdf*.

V. U.S. COMPETITIVENESS IN GLOBAL INSURANCE MARKETS

This section of the Report begins with statistics describing global insurance markets, which demonstrate the scope of international opportunities for the U.S. insurance industry. The report then addresses U.S. participation in a number of insurance-related initiatives in various international forums. Engagement by FIO and other U.S. participants in international financial standard-setting bodies such as the IAIS remains important to promote financial stability, level the playing field for U.S. insurers, prevent unnecessary regulatory standard-setting that could stifle financial innovation, and assure the competitiveness of U.S. insurers and markets. Specifically, the Report describes U.S. success concluding a covered agreement on prudential insurance and reinsurance measures with the EU, which on a consolidated basis is the largest U.S. insurance trading partner. This section then goes on to discuss IAIS activities in the past year, including the role of FIO in facilitating stakeholder engagement, and concludes with a discussion of the IAIS methodology used to recommend insurers for identification as systemically important financial institutions.

A. Global Insurance Markets

The United States remains the world's largest single-country insurance market, with 29 percent of global direct premiums written in 2016 (see Figure 43). This market share was the same in both 2015 and 2016, and is a 7.5 percent increase over 2011.[332] When viewed as a single market, the EU's global share of total direct premiums written (also 29 percent) is comparable to that of the United States. Globally, direct insurance premiums increased by 3.1 percent to $4.7 trillion in 2016, as compared to the 4.3 percent growth experienced in 2015.[333] For 2016, growth in global premiums was led by non-life business (up 3.7 percent), with life business advancing at a slower 2.5 percent pace.[334] This growth was achieved despite continued moderate global growth in real gross domestic product (GDP), which expanded globally by 2.5 percent in 2016, slightly lower than the 2.7 GDP percent growth achieved in 2015.[335]

As in 2015, growth of emerging markets economies (3.8 percent) exceeded that of advanced economies (1.7 percent) in 2016.[336] Similarly, 2016 growth in total insurance direct premiums written was stronger in emerging markets than in advanced economies: total direct premiums written increased by 14 percent in emerging economies, compared to an increase of only 0.7

---

[332] Swiss Re Institute sigma, *World Insurance in 2016: the China Growth Engine Steams Ahead* (July 5, 2017), *http://media.swissre.com/documents/sigma3_2017_en.pdf*. Swiss Re sigma examines insurance and macroeconomic data from 147 countries sourced through Swiss Re Economic Research and Consulting. 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 as is the practice outside of the United States; under this convention, the "non-life" sector includes health insurance.

[333] *See* Swiss Re sigma, *World Insurance in 2016*, 1.

[334] Swiss Re sigma, *World Insurance in 2016*, 1, 2.

[335] Swiss Re sigma, *World Insurance in 2016*, 3.

[336] Swiss Re sigma, *World Insurance in 2016*, 3.

percent in advanced economies.[337] For emerging markets, life direct premiums written grew by 17 percent, and non-life direct premiums written increased by 9.6 percent. By comparison, for advanced economies life direct premiums written declined by 0.5 percent, and non-life direct premiums written increased by 2.6 percent.[338]

Figure 43: Gross Premiums Written (Market Share) by Country, 2011 vs. 2016

2011 Rank	2016 Rank	Country	2011 Premium Volume ($ millions)	2011 World Market Share (%)	2016 Premium Volume ($ millions)	2016 World Market Share (%)	Change in World Market Share (%)
1	1	United States	$1,221,471	26.58	$1,352,385	28.58	7.52
2	2	Japan	643,672	14.01	471,295	9.96	-28.89
6	3	China	221,858	4.83	466,131	9.85	104.04
3	4	United Kingdom	312,843	6.81	328,883	6.95	2.10
4	5	France	274,208	5.97	237,644	5.02	-15.83
5	6	Germany	245,572	5.34	215,021	4.54	-14.97
8	7	South Korea	125,868	2.74	170,862	3.61	31.83
7	8	Italy	160,514	3.49	162,383	3.43	-1.75
9	9	Canada	121,031	2.63	114,523	2.42	-8.11
13	10	Taiwan	78,429	1.71	101,445	2.14	25.62
11	11	Australia	86,214	1.88	82,159	1.74	-7.45
10	12	Netherlands	108,813	2.37	80,130	1.69	-28.48
15	13	India	72,338	1.57	79,311	1.68	6.48
14	14	Brazil	78,656	1.71	72,646	1.54	-10.30
12	15	Spain	82,405	1.79	68,599	1.45	-19.15
18	16	Ireland	46,849	1.02	59,295	1.25	22.92
16	17	Switzerland	62,907	1.37	58,369	1.23	-9.89
23	18	Hong Kong	28,863	0.63	56,448	1.19	89.93
17	19	South Africa	52,352	1.14	41,962	0.89	-22.16
21	20	Belgium	41,295	0.90	33,838	0.72	-20.42
		World	**$4,595,704**		**$4,732,188**		

Source: Swiss Re Institute sigma, *World Insurance in 2016*

Insurance penetration, one measure of which is the ratio of premiums to real GDP, was 3.17 percent for emerging markets and 8.05 percent for advanced economies in 2016.[339] Compared to 2015, insurance premiums in 2016 constituted a slightly larger percentage of GDP in emerging markets and a slightly smaller percentage of GDP in advanced economies.

Among emerging markets, China showed strong growth, with life premiums increasing by 29 percent in 2016, and non-life premiums gaining 20 percent.[340] Since 2011, total direct premiums

[337] *See* Swiss Re sigma, *World Insurance in 2016*, 30, 35-36. Swiss Re sigma's country classifications of "advanced" and "emerging" generally follows the International Monetary Fund's classification system.

[338] Swiss Re sigma, *World Insurance in 2016*, 32.

[339] Swiss Re sigma, *World Insurance in 2016*, 46.

[340] Swiss Re sigma, *World Insurance in 2016*, 38.

written in China have more than doubled, raising China to the world's third-largest insurance market in 2016 (as compared to the sixth largest in 2011), behind the United States and Japan. Among other emerging markets, India and Brazil, the thirteenth and fourteenth largest insurance markets in the world in 2016, also showed positive growth.

These data demonstrate that non-U.S. markets – both established and emerging – continue to present attractive business opportunities for the U.S. insurance industry. Many U.S. companies are very active in these markets, thus supporting both growth and risk diversification. Similarly, the United States remains an attractive market for non-U.S. insurers and reinsurers. Over 4,000 non-U.S. reinsurers (both affiliated and unaffiliated) assumed a total of approximately $78.5 billion in premium from U.S. insurers in 2015, which was more than an eight percent increase over the previous year.[341]

B. Covered Agreement

Title V of the Dodd-Frank Act authorizes the Secretary and USTR jointly to negotiate a "covered agreement" on behalf of the United States with one or more foreign governments, authorities, or regulatory entities. A covered agreement is an international agreement that relates to the recognition of prudential measures with respect to the business of insurance or reinsurance that achieves a level of protection for insurance or reinsurance consumers that is substantially equivalent to the level of protection achieved under state insurance or reinsurance regulation.[342] In November 2015, Treasury and USTR began the process of negotiating a covered agreement with the EU, advising Congress that a covered agreement with the EU would help level the regulatory playing field for U.S.-based insurers and reinsurers operating in the EU, and 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.[343] Those negotiations resulted in an agreed final legal text, which Treasury and USTR submitted to Congress in January 2017.[344]

[341] Reinsurance Association of America, *Offshore Reinsurance in the U.S. Market: 2015 Data* (2016), http://www.reinsurance.org/RAA/Industry_Data_Center/Offshore_Report/Offshore_Report,_2015_Data.html. The comparison is in nominal dollars.

[342] Federal Insurance Office Act of 2010, 31 U.S.C. § 313(r)(2) (2015).

[343] Letters from Treasury Assistant Secretary for Legislative Affairs Wall and USTR Assistant U.S. Trade Representatives for Congressional Affairs to Members of Congress (November 20, 2015), https://www.treasury.gov/initiatives/fio/reports-and-notices/Documents/Covered%20Agreement%20Letters%20to%20Congress.pdf.

[344] Letters from Secretary Lew and U.S. Trade Representative Froman to Members of Congress (January 13, 2017) and *Bilateral Agreement Between the European Union and the United States of America On Prudential Measures Regarding Insurance and Reinsurance*, https://www.treasury.gov/initiatives/fio/Documents/Final%20Covered%20Agreement%20Letters%20to%20Congress%20Full%20Text.pdf. The final legal text also appeared in the Federal Register. Notice of Availability of Bilateral Agreement Between the European Union and the United States of America on Prudential Measures Regarding Insurance and Reinsurance, 82 Fed. Reg. 8488 (January 25, 2017), https://www.gpo.gov/fdsys/pkg/FR-2017-01-25/pdf/2017-01638.pdf.

The covered agreement with the EU – formally titled *Bilateral Agreement Between the United States of America and the European Union On Prudential Measures Regarding Insurance and Reinsurance* – addresses three areas of insurance and reinsurance prudential measures: (1) group supervision; (2) reinsurance supervision, including collateral and local presence requirements; and (3) exchange of information between supervisory authorities. The covered agreement promotes U.S. interests by allowing U.S. insurers with EU operations to avoid burdensome worldwide group capital, governance, and reporting requirements under the EU's "Solvency II" prudential regulatory system for insurers, as well as EU local presence and collateral requirements for U.S. reinsurers.[345] Reflecting a longstanding issue raised by the EU, the covered agreement builds on NAIC initiatives underway at the state level by committing the United States to eliminating state-based reinsurance collateral requirements as applied to cessions to EU reinsurers that meet the consumer protection standards specified in the agreement. Collateral elimination for EU reinsurers will apply prospectively only, and according to a five-year timeline established in the agreement.

During 2017, Treasury and USTR engaged in substantial Congressional consultations and outreach on the covered agreement with industry and regulatory stakeholders – including state regulators through the NAIC as well as insurance trade association officials and members – and determined that Agreement is in the interest of the United States. The agreement was also the subject of two Congressional hearings.[346] The agreement is expected to provide greater regulatory certainty for U.S. insurers and reinsurers operating in the EU, and to reduce costs for insurers and personal and commercial policyholders in the United States, while preserving important consumer protection provisions for U.S. individual and commercial policyholders. Accordingly, in July 2017, Treasury and USTR announced their intention to sign the covered agreement and, at the same time, to issue a United States "policy statement" responsive to the most significant concerns raised by industry and regulatory stakeholders, including the NAIC and members of Congress.[347] The EU made a similar announcement,[348] confirming the earlier decision of the European Council to move forward with the agreement.[349]

---

345 Solvency II was implemented in the EU effective January 1, 2017.

346 *Assessing the U.S.-EU Covered Agreement, House Financial Services Committee*, 115th Cong. (February 16, 2017), *https://financialservices.house.gov/calendar/eventsingle.aspx?EventID=401498*; *Examining the U.S. – EU Covered Agreements, Senate Committee on Banking, Housing, and Urban Affairs*, 115th Cong. (May 2, 2017), *https://www.banking.senate.gov/public/index.cfm/2017/5/examining-the-u-s-eu-covered-agreements*.

347 Treasury and USTR, "Treasury, USTR Notice of Intent to Sign," news release, July 14, 2017, *https://www.treasury.gov/press-center/press-releases/Pages/sm0124.aspx*.

348 European Commission, "EU and US to Sign the Bilateral Agreement on Insurance and Reinsurance," news release, July 14, 2017, *https://ec.europa.eu/info/sites/info/files/170714-eu-us-joint-financial-regulatory-forum-joint-statement_en.pdf*.

349 Council of the European Union, *Council Decision on the Signing, on Behalf of the Union, and Provisional Application of the Bilateral Agreement Between the European Union and the United States of America on Prudential Measures Regarding Insurance and Reinsurance* (May 23, 2017), *http://data.consilium.europa.eu/doc/document/ST-8055-2017-INIT/en/pdf*. This Council Decision was amended on September 14, 2017 to clarify that the agreement would be executed in English, *http://www.consilium.europa.eu/register/en/content/out/?&typ=ENTRY&i=ADV&DOC_ID=ST-12064-2017-INIT*.

On September 22, 2017, at the Treasury Department in Washington, D.C., the covered agreement was formally signed by the Secretary and the U.S. Trade Representative (Ambassador Lighthizer) on behalf of the United States, and the Estonian and EU Ambassadors to the United States on behalf of the EU.[350] The Secretary noted in a press release that "by providing regulatory clarity and reducing regulatory burdens, 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."

Consistent with those goals, the United States is committed to promoting the interests of U.S. insurers and reinsurers, U.S. insurance regulators, U.S. consumers, and the U.S. economy as the U.S.-EU covered agreement is implemented pursuant to the timeframe established in the agreement. In conjunction with signing the agreement, the United States released the Policy Statement noted above, which emphasizes that the agreement "affirms 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.[351] Accordingly, FIO and USTR will continue engaging with state regulators, the NAIC, Congress, and other stakeholders concerning implementation and operation of the agreement.

Both the United States and the EU recognize that this first-ever covered agreement is a major cooperative step between the two jurisdictions.[352] In their joint statement upon signing the parties stated: "The United States and the EU look forward to successful implementation of the Agreement, including through the Joint Committee established by the Agreement. The Agreement provides meaningful benefits for U.S. and EU insurance consumers and for U.S. and EU insurers and reinsurers that operate in both markets."[353]

C. IAIS Activities

The IAIS, established in 1994, is the international standard-setting body for supervision of the insurance sector. IAIS membership consists of insurance regulators and supervisors of more than 200 jurisdictions in nearly 140 countries, representing 97 percent of global insurance premiums. The IAIS mission is to: (1) 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 (2) contribute to global financial stability.

[350] Treasury and USTR, "Treasury, USTR Sign Covered Agreement on Prudential Insurance and Reinsurance Measures with the European Union," news release, September 22, 2017, *https://www.treasury.gov/press-center/press-releases/Pages/sm0164.aspx*. (The Estonian Ambassador signed as representative of the European Council, as Estonia currently holds the Presidency of the Council of the European Union.)

[351] United States, *Statement of the United States on the Covered Agreement with the European Union* (September 22, 2017), *https://www.treasury.gov/initiatives/fio/reports-and-notices/Documents/US_Covered_Agreement_Policy_Statement_Issued_September_2017.pdf*.

[352] United States and EU, "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://www.treasury.gov/press-center/press-releases/Pages/sm0163.aspx*.

[353] United States and EU, "Joint Statement on Upcoming Signature of the Bilateral Agreement."

The IAIS also provides a forum for members and stakeholders to share experiences and understanding of insurance supervision and insurance markets, and to develop standards based on best practices.[354]

The IAIS has a committee structure employing multiple working groups and task forces that focus on a range of prudential regulation and supervision topics, including financial stability and market conduct. These committees are ultimately led by an Executive Committee. Much of the IAIS's standard-setting work is headed by a Financial Stability and Technical Committee, which reports directly to the Executive Committee. This section highlights some of the projects and work streams in which FIO is currently engaged at the IAIS, and thus helping to "advance American interests in international financial regulatory negotiations and meetings."[355]

Importantly, international standards are not self-executing and are not binding on member jurisdictions. Any international standards would not become effective in the United States unless implemented through the relevant state or federal legislative processes. Whether occurring at the state or federal level, therefore, international insurance standard implementation can be adapted to the unique features of the U.S. insurance marketplace and regulatory system.

1. Coordination and Stakeholder Engagement

In all of its IAIS-related work, FIO prioritizes coordination and collaboration with the other U.S. members of the IAIS, as well as facilitating formal and informal opportunities for U.S. stakeholders to engage with FIO about matters before the IAIS. The U.S.-based members of the IAIS include FIO, the 56 state and territory insurance regulators who represent the individual sovereign jurisdictions within the United States, the NAIC, and the Federal Reserve. Over the past year, FIO has improved its coordination with the U.S. members of the IAIS in an effort to achieve a unified "Team USA" position at the IAIS. As part of this effort, FIO collaborates and communicates daily – by phone, telephone, email, and in-person meetings – with counterparts at numerous state insurance departments, the NAIC, and the Federal Reserve. This collaboration occurs in relation to various IAIS committee, task force, and working group meetings, as well as in related interim activities.

"Stakeholder engagement" at the IAIS encompasses education, consultation, and a variety of other collaborative activities. In general, it means the IAIS's efforts to explain the "policy formulation and decision making process," and to provide stakeholders with an opportunity to provide input in those processes.[356] To support this engagement, the IAIS created the

---

[354] *See, e.g.*, "Welcome to the Website of the International Association of Insurance Supervisors (IAIS)," IAIS, *https://www.iaisweb.org/home*.

[355] Core Principles for Regulating the United States Financial System, Exec. Order No. 13,772, § 1(e), 82 Fed. Reg. 9965 (February 8, 2017), *https://www.federalregister.gov/documents/2017/02/08/2017-02762/core-principles-for-regulating-the-united-states-financial-system*.

[356] IAIS, *Stakeholder Engagement Plan* (March 20, 2017), *https://www.iaisweb.org/page/about-the-iais/policies-and-procedures/file/65579/iais-stakeholder-engagement-plan-2017*.

Stakeholder Engagement Task Force in January 2016 to develop a Stakeholder Engagement Plan, which was open for public comment between November 2016 and January 2017.[357] Following the public consultation, the IAIS Executive Committee agreed to publish the responses to stakeholder comments and adopted a finalized Stakeholder Engagement Plan.[358] The Executive Committee also published a plan summary emphasizing the IAIS's new engagement opportunities and commitments,[359] and then disbanded the task force which had completed its mandated work.

As a supplement to official IAIS-sponsored engagement opportunities, FIO also provides U.S. stakeholders with opportunities to engage with U.S.-based members of the IAIS. Since August 2014, FIO has convened sessions at Treasury for U.S. stakeholders – including U.S. insurers, foreign insurers with a U.S. presence, trade groups, and consumer representatives – interested in IAIS activities to meet jointly with FIO, the Federal Reserve, state insurance regulators, and the NAIC. In addition to these meetings, U.S. stakeholders participate in formal and informal conference calls and meetings with U.S.-based IAIS members prior to IAIS meetings to further discuss upcoming meetings and other issues. Additionally, through calls and meetings, FIO and other U.S.-based IAIS members engage regularly with U.S. insurers participating in IAIS field testing (discussed below) and other IAIS initiatives in order to monitor progress and discuss relevant issues such as data quality.

FIO's IAIS (and domestic) work is informed by its ongoing stakeholder outreach, which extends well beyond that targeted to specific IAIS meetings. FIO regularly conducts outreach with insurers, agents and brokers, corporate representatives, trade associations, consumer advocates, academics, and other subject matter experts on numerous issues, including capital standards, cybersecurity, and terrorism risk insurance.

2. Common Framework for the Supervision of Internationally Active Insurance Groups and Insurance Core Principles

FIO participates in the development and revision of IAIS standards. Since 2009, the IAIS has been developing ComFrame, a framework for the supervision of IAIGs. For these groups, ComFrame is intended to help "supervisors to coordinate supervisory activities efficiently and effectively and share information about IAIGs at the group-wide level and between group-wide and host supervisors."[360] ComFrame ultimately will include a quantitative ICS, as well as

[357] IAIS, *[Draft] Stakeholder Engagement Plan for Stakeholder Feedback* (November 23, 2016), 3, https://www.iaisweb.org/page/consultations/closed-consultations/draft-stakeholder-engagement-plan.

[358] IAIS, *Stakeholder Engagement Plan*.

[359] IAIS, *Brief Overview of IAIS Stakeholder Engagement Plan* (March 20, 2017), https://www.iaisweb.org/page/about-the-iais/policies-and-procedures/file/65583/brief-overview-of-comprehensive-stakeholder-engagement-plan.

[360] IAIS, *Common Framework for the Supervision of Internationally Active Insurance Groups Revised Draft* (September 2014), 2, https://www.iaisweb.org/page/supervisory-material/common-framework//file/58726/revised-comframe-draft-2014.

qualitative standards for group-wide supervision, governance, risk management, and recovery and resolution.[361] Currently, an IAIG is defined as an insurance group that has either: (1) total assets of at least $50 billion; or (2) gross premiums written of at least $10 billion (on a rolling three year average basis) across three or more jurisdictions, at least 10 percent of which is written outside its home jurisdiction.[362] The IAIS has stated that approximately 50 IAIGs were involved in field testing.[363]

ComFrame supplements the Insurance Core Principles (ICPs), "a globally acceptable framework for the supervision of the insurance sector" that – unlike ComFrame, which applies only to IAIGs – applies to the supervision of insurers of all sizes.[364] The current version of the ICPs was adopted in October 2011, with subsequent updates to select ICPs.[365] Figure 44 outlines the IAIS working groups that are responsible for periodically revising the ICPs.

[361] ICS is further discussed in Section V.C.3.

[362] IAIS, *ComFrame Revised Draft*, 8.

[363] *See* IAIS, "IAIS Releases Version 1.0 for Extended Field Testing," news release, July 21, 2017, *https://www.iaisweb.org/page/news/press-releases//file/68051/21-july-2017-iais-releases-ics-version-10-for-extended-field-testing*.

[364] IAIS, *Insurance Core Principles Updated November 2015* (November 2015), 5, *https://www.iaisweb.org/page/supervisory-material/insurance-core-principles//file/58067/insurance-core-principles-updated-november-2015*.

[365] IAIS, *Insurance Core Principles 2015*, 2. *See also* "Insurance Core Principles," NAIC, April 14, 2017, *http://www.naic.org/cipr_topics/topic_insurance_core_principles.htm*.

Figure 44: ICP and ComFrame Revisions in 2017 IAIS Public Consultations

IAIS Revisions	ICP	ComFrame	Responsible Working Group
Introduction and Assessment Methodology	X	X	Supervisory Materials Review Task Force (SMRTF)
ICP 1 (Objectives, Powers, and Responsibilities of the Supervisor)	X		SMRTF
ICP 2 (Supervisor)	X		SMRTF
ICP 3 (Information Sharing and Confidentiality Requirements)	X		Insurance Groups Working Group (IGWG)
ICP 5 (Suitability of Persons)		X	Governance Working Group (GWG)
ICP 7 (Corporate Governance)		X	GWG
ICP 8 (Risk Management and Internal Controls)		X	GWG
ICP 9 (Supervisory Review and Reporting)	X	X	SMRTF/IGWG
ICP 10 (Preventative and Corrective Measures)	X	X	SMRTF/IGWG
ICP 11 (Enforcement)	X	X	SMRTF/IGWG
ICP 12 (Exit from the Market and Resolution)	X	X	Resolution Working Group (ReWG)
ICP 13 (Reinsurance and Other Forms of Risk Transfer)	X		Reinsurance Task Force
ICP 18 (Intermediaries)	X		Market Conduct Working Group (MCWG)
ICP 19 (Conduct of Business)	X		MCWG
ICP 24 (Macroprudential Surveillance and Insurance Supervision)	X		Macroprudential Surveillance Working Group
ICP 25 (Supervisory Cooperation and Coordination)	X	X	IGWG
ICP 26 (Cross-Border Cooperation and Coordination on Crisis Management)	X	X	ReWG/IGWG

To develop ComFrame, including the quantitative ICS, the IAIS established a field testing process through which participating insurers provided data and perspectives that shaped a 2014 draft of ComFrame.[366] This draft of ComFrame was designed to be an independent document from the ICPs. Following additional field testing of ComFrame's qualitative standards in 2015, the IAIS decided to integrate ComFrame standards with relevant ICPs. In addition to this restructuring – which resulted in streamlining ComFrame text that duplicated material already in the ICPs – relevant IAIS working groups also revised the text of certain qualitative sections of ComFrame based on feedback from field testing and the intervening changes to the ICPs since 2014.

In March 2017, the IAIS released for public consultation revised sections of ComFrame, as well as revisions to certain ICPs.[367] These sections addressed the introduction and assessment

[366] ComFrame field testing involves collecting data from volunteer insurers and insurance supervisors, with the goal of improving the qualitative and quantitative aspects of ComFrame, as well as assessing practical considerations for implementing ComFrame. Forty-two insurers participated in 2016 field testing (increased from 34 insurers in 2015). *See* IAIS, *ComFrame Revised Draft.*

[367] "Consultation: Revised Insurance Core Principles (ICPs) and ComFrame Material Integrated with ICPs," IAIS, *https://www.iaisweb.org/page/consultations/closed-consultations/revision-of-icps-and-comframe*.

methodology for ICPs, governance, supervisory review and reporting, supervisory measures, supervisory cooperation and coordination, and resolution. This public consultation closed on June 1, 2017. In June 2017, the IAIS released for public consultation revisions to ICPs regarding market conduct, intermediaries (i.e., brokers and agents), and the role and powers of the supervisor.[368] Public consultation on these ICPs closed on August 29, 2017. Finally, on August 1, 2017, the IAIS released for public consultation revisions to an ICP addressing macroprudential surveillance.[369] This public consultation will close on October 1, 2017. Following the close of each public consultation, IAIS working groups review stakeholder feedback and make additional revisions to the relevant standards, as appropriate. The IAIS will continue working on ComFrame through 2019.

3. Development of International Capital Standards for Insurance Groups

As insurance markets become increasingly global, the IAIS is taking steps to increase insurance supervisors' understanding of the financial condition of insurance groups that have operations and affiliates in multiple international jurisdictions. The amount and quality of an insurer's capital are important measures of the insurer's financial viability and its ability to absorb an unexpected level of losses.

One means to enhance inter-jurisdictional understanding among supervisors may be through a commonly understood quantifiable capital standard that would be applied to IAIGs. The IAIS has stated that ICPs alone do not provide this common understanding because the ICPs provide flexibility in individual jurisdictions, "allow[ing] a wide range of regulatory approaches and supervisory processes to suit different markets and the range of insurance entities and groups operating within these markets."[370] In contrast, with respect to IAIGs, ComFrame aspires to provide a "tailored and more coordinated" approach, including through a risk-based group capital standard that is understood by supervisors across jurisdictions.[371]

Specifically, as one component of ComFrame, IAIS members are continuing to develop a risk-sensitive ICS that if adopted would measure the capital adequacy of an entire insurance group.[372] The IAIS began work in mid-2013 on key components of the ICS, launching a series of annual development, field testing, and data analysis exercises involving the Capital Solvency and Field Testing Working Group. A number of volunteer insurance groups from various regions around the globe participate in the annual voluntary exercises. As currently envisioned, the IAIS's ultimate goal is a single ICS that includes a common methodology by which one ICS achieves comparable, or substantially the same, outcomes across jurisdictions. As such, central

---

368 "Revision of ICPs 1, 2, 18 and 19," IAIS, *https://www.iaisweb.org/page/consultations/current-consultations/revision-of-icps-12-18-19-and-24/*.

369 "Revision of ICP 24," IAIS, *https://www.iaisweb.org/page/consultations/current-consultations/revision-icp-24*.

370 "ComFrame," IAIS, *https://www.iaisweb.org/page/supervisory-material/common-framework*.

371 "ComFrame," IAIS.

372 *See, e.g.*, IAIS, *Frequently Asked Questions for The Global Risk-Based Insurance Capital Standard (ICS)*, July 21, 2017, *https://www.iaisweb.org/file/67671/ics-frequently-asked-questions-21-july-2017*.

elements are: (1) a valuation basis for assets and liabilities; (2) a capital requirement that considers all relevant and material risks and is calibrated at a sufficient level; and (3) criteria to determine qualifying capital resources that are available to meet that capital requirement.[373]

In July 2017, the IAIS adopted Risk-Based Capital ICS Version 1.0 for Extended Field Testing (ICS Version 1.0).[374] The options presented in 2017 field testing were formulated to better inform the appropriate future direction for the IAIS to take, which may include exploring new options as the IAIS progresses towards ICS Version 2.0. As such, the data requests for 2017 field testing were more expansive than in previous years, requiring greater analytics to shape potential policy decisions. Concurrently with the adoption of ICS Version 1.0, the IAIS reiterated a target date of 2019 for ICS Version 2.0.[375] The IAIS also reiterated its goal of designing and calibrating the ICS so that it can be effectively implemented across jurisdictions.

ICS Version 1.0 also noted the continuing work at the IAIS on the valuation of assets and liabilities. For example, due to various factors, jurisdictional differences in local Generally Accepted Accounting Principles (GAAP) exist, resulting in a multitude of different approaches. One source of these differences stems from the use by some jurisdictions of International Financial Reporting Standards (IFRS) developed by members of the International Accounting Standards Board (IASB) to allow for the application of national accounting standards. Other jurisdictions, such as the United States, use their own GAAP instead of IFRS.

There have been recent developments that relate to the work on valuation in the ICS. In May 2017, the IASB issued a new standard for insurance contract accounting that will replace IFRS as the accounting standard for insurance contracts. IFRS 17 is intended to help address the comparison problems created by IFRS 4, by requiring all insurance contracts to be accounted for in a consistent manner.[376] The U.S. Financial Accounting Standards Board – which establishes financial accounting and reporting standards for companies and organizations that follow GAAP[377] – is also expected to issue a new standard for insurance contracts in late 2017 or early 2018. Depending on the final texts of these standards and how they are implemented in various jurisdictions, the new accounting standards could lead to greater consistency in valuation reporting by insurance groups in jurisdictions that use either IFRS or GAAP.

---

[373] Insurance Capital Standard Papers," IAIS, *https://www.iaisweb.org/page/supervisory-material/insurance-capital-standard/file/67651/ics-version-10-for-extended-field-testing*.

[374] "Insurance Capital Standard Papers," IAIS.

[375] "Insurance Capital Standard Papers," IAIS.

[376] *See* "Insurance Contracts," IFRS, *http://www.ifrs.org/projects/2017/insurance-contracts/*.

[377] *See* "About the FASB," Financial Accounting Standards Board, *http://www.fasb.org/cs/ContentServer?c=Page&pagename=FASB%2FPage%2FSectionPage&cid=1176154526495*.

4. Cross-Border Resolution Planning

Work on the development of proposed international standards regarding the resolution of IAIGs continued in 2016 through both the FSB and the IAIS. Formed in late 2013, the FSB Cross-Border Crisis Management Group for Insurers (iCBCM) assists and supports regulatory authorities in the development and implementation of resolution-related policy measures. The IAIS Resolution Working Group (ReWG) was also formed in late 2013 to develop and maintain supervisory guidance on the resolution of insurers, including G-SIIs, and to contribute to the resolution-related content of ComFrame and ICPs. The ReWG also represents the IAIS at relevant FSB bodies such as the Resolution Steering Group and its subcommittee, the iCBCM.

The FSB is the standard-setting body for resolution issues, having promulgated the *Key Attributes for Effective Resolution Regimes for Financial Institutions* (the Key Attributes) in 2014.[378] In late 2015, the FSB published a consultation paper entitled *Developing Effective Resolution Strategies and Plans for Systemically Important Insurers.*[379] The final version of this paper was published on June 6, 2016. The iCBCM developed this guidance with the intent of instructing jurisdictions in developing resolution strategies that are consistent with the Key Attributes, and included guidance on determining critical functions of an insurance group.

In 1999, the International Monetary Fund (IMF) established the Financial Sector Assessment Program (FSAP). The goals of FSAP assessments are to gauge the stability and soundness of the financial sector, and to assess its potential contribution to growth and development.[380] In September 2010, the IMF made it mandatory for 25 jurisdictions with systemically important financial institutions to undergo financial stability assessments under the FSAP every five years. The number of jurisdictions was increased to 29 in 2013.[381] As part of the FSAP assessment for the insurance sector, a jurisdiction's regulatory regime is measured for compliance with the Key Attributes. In August 2013, the FSB published for public consultation the *Assessment Methodology for Key Attributes of Effective Resolution Regimes for Financial Institutions* to guide the assessment of a jurisdiction's compliance with the Key Attributes, and to also serve as guidance to jurisdictions that are adopting or amending resolution regimes to implement them.[382] In the process of addressing comments received in the consultation, the FSB decided to divide this work into Banking and Insurance Modules. The final version of the Banking Module was published in October 2016. The FSB then turned its attention to the Insurance Module, tasking

---

[378] FSB, *Key Attributes of Effective Resolution Regimes for Financial Institutions* (October 15, 2014), *http://www.fsb.org/wp-content/uploads/r_141015.pdf*.

[379] FSB, *Developing Effective Resolution Strategies and Plans for Systemically Important Insurers* (November 3, 2015), *http://www.fsb.org/2015/11/consultative-document-on-developing-effective-resolution-strategies-and-plans-for-systemically-important-insurers/*.

[380] *See* "Factsheet: The Financial Sector Assessment Program (FSAP)," IMF, May 16, 2017, *http://www.imf.org/en/About/Factsheets/Sheets/2016/08/01/16/14/Financial-Sector-Assessment-Program*.

[381] "Factsheet: FSAP."

[382] FSB, *Assessment Methodology for Key Attributes of Effective Resolution Regimes for Financial Institutions* (August 28, 2013), *http://www.fsb.org/2013/08/r_130828*.

the iCBCM with drafting revisions to the Assessment Methodology appropriate to the insurance industry.

While the FSB and the IAIS are both involved in work on resolution matters relating to G-SIIs (see Section V.D), the ReWG also works on the development of resolution-related policy standards for a broader range of insurance firms. During 2016, the ReWG continued its revisions to resolution-related content in the ICPs and ComFrame, including hosting a stakeholder session following the close of a request for informational feedback on an early revision of ICP 12 (with integrated ComFrame materials) – *Exit from the Market and Resolution*. In March 2017, the ReWG included the revised ICP 12 (with integrated ComFrame materials) in the public consultation package comprised of numerous ICPs. The goal is to provide a final version of ICP 12 (ICP material only, not including ComFrame materials) by the end of 2017.

5. Combating Financial Crime in Insurance

The IAIS, through the FCTF, engages in international efforts related to the involvement of insurance supervisors in combating financial crime including fraud, the financing of terrorism, and money laundering (addressed in ICPs 21 and 22). This work includes monitoring developments at the Financial Action Task Force (FATF), on which the FCTF represents the IAIS.[383] The FCTF, which reports to the IAIS Financial Stability and Technical Committee, also addresses matters of cybersecurity in the insurance sector.

The IAIS published an *Issues Paper on Cyber Risk to the Insurance Sector* in August 2016. Developed by the FCTF, the goal of the paper was to raise awareness of the challenges presented by cyber risk, review current and contemplated supervisory approaches for addressing these risks, and identify other related areas of interest for insurers and supervisors. An IAIS Issues Paper does not establish supervisory expectations, but may shed light on the need for additional, more specific IAIS material to support supervisors in addressing cyber risk.[384]

Through the FCTF, the IAIS has been represented on the Joint Working Group on Cyber Resilience (WGCR), which was organized by two other international standard-setting bodies, the Committee on Payments and Marketing Infrastructure (CPMI) and the International Organization of Securities Commissions (IOSCO). On June 29, 2016, the WGCR published its *Guidance on Cyber Resilience for Financial Market Infrastructures*.[385]

[383] The FATF is an inter-governmental body established in 1989 by the ministers of its member jurisdictions. The objectives of the FATF are to set standards and promote effective implementation of legal, regulatory, and operational measures for combating money laundering, terrorist financing, and related threats to the integrity of the international financial system. *See* "About FATF," FATF, *http://www.fatf-gafi.org/about/*.

[384] The work of the FCTF related to cybersecurity is discussed above in Section IV.A.2.c of this Report.

[385] CPMI and IOSCO, *Guidance on Cyber Resilience for Financial Market Infrastructures* (June 2016), *http://www.bis.org/cpmi/publ/d146.pdf*.

6. IAIS Systemic Risk Task Forces

In early 2017, the IAIS created two new task forces relating to the evaluation of systemic risk in the insurance sector: (1) the SRATF; and (2) the TFBI.

The IAIS established the SRATF in January 2017 with responsibility to assess and measure systemically-risky activities, improve cross-sectoral consistency in systemic risk measurement, and make improvements to the G-SII assessment methodology.[386] Unlike an entity-based approach to assessing systemic risk, which focuses on the extent to which any single insurance company poses a threat to the broader financial system, the SRATF will explore an activity-based approach that examines risk across insurers to assess vulnerabilities that may be relevant to financial stability.

The SRATF is expected to issue an initial public consultation in November 2017 that will describe the potential framework of an activity-based assessment.[387] The SRATF is expected to issue a second, more detailed public consultation on its updated approach to systemic risk assessment in insurance by December 2018.[388]

In addition to the SRATF, the IAIS, jointly with the Basel Committee on Banking Supervision, created the TFBI in 2017. Among other things, one objective of the TFBI is to address inconsistencies between the G-SIB framework and the G-SII assessment methodology (discussed in Section V.D).

7. Other IAIS Working Group and Task Force Developments

The IAIS's Governance Working Group, Insurance Groups Working Group, Supervisory Materials Review Task Force, and Reinsurance Task Force continued work on revising or developing supervisory materials in 2016 and 2017.

The Governance Working Group develops high-level corporate governance principles, standards, and guidance for the supervision of insurers and IAIGs. In March 2017, the IAIS released for public consultation an application paper on group governance issues developed by the Governance Working Group. This consultation period closed on May 1, 2017. The Governance Working Group has also worked on revisions to the corporate governance sections of ComFrame (see Figure 44).

The IGWG provides a framework for developing and advancing standards for effective and efficient group-wide supervision. In 2016 and 2017, the working group revised relevant standards and guidance in the ICPs and ComFrame, including ICP 3 (Information Sharing and

[386] IAIS, "IAIS Announces Systemic Risk Assessment and Policy Workplan," news release, February 28, 2017, *https://www.iaisweb.org/page/news/press-releases/file/65229/iais-press-release-systemic-risk-assessment-workplan*.

[387] IAIS, *Newsletter*, April 2017, *https://www.iaisweb.org/page/news/newsletter*.

[388] IAIS, *Newsletter*.

Confidentiality Requirements), ICP 25 (Supervisory Cooperation and Coordination), and the ComFrame material for ICP 9 (Supervisory Review and Reporting) and ICP 10 (Preventative and Corrective Measures) (see Figure 44).

The SMRTF is responsible for revising other principles, standards, and guidance that are not otherwise the responsibility of any other IAIS working group or task force, as well as for assessing the ICPs' Introduction and Assessment Methodology. In addition, the SMRTF is responsible for working to achieve style consistency across the ICPs and standards. In 2016 and 2017, the task force revised relevant standards and guidance in the ICPs and ComFrame (Figure 44).

Lastly, the Reinsurance Task Force was formed in 2016 to propose amendments to ICP 13 – *Reinsurance and Other Forms of Risk Transfer* in response to current market developments and a self-assessment by IAIS members. The IAIS published proposed updates to ICP 13 through a public consultation process that concluded on July 31, 2017.[389]

D. Financial Stability Board

In April 2009, the G-20 established the FSB to monitor and make recommendations about the global financial system. One FSB initiative is the identification of systemically important financial institutions, i.e., financial institutions whose distress or disorderly failure, because of their size, complexity, and systemic interconnectedness, would cause significant disruption to the wider financial system and economic activity. With respect to the insurance sector, the IAIS developed an assessment methodology in July 2013 to recommend insurers that may be eligible for identification as G-SIIs. In 2013, in consultation with the IAIS and national authorities, the FSB identified an initial list of G-SIIs. Similar annual identification processes were subsequently conducted in 2014 and 2015.

In June 2016, the IAIS released an updated G-SII Assessment Methodology, which builds upon the methodology developed in 2013 by incorporating a five-phase approach to the G-SII assessment process.[390] In 2016, the FSB identified nine insurers as G-SIIs, including the same three U.S. groups (AIG, MetLife, and Prudential) that had also been identified under the previous methodology.

[389] "Revised Insurance Core Principles 13 Reinsurance and Other Forms of Risk Transfer," IAIS, *https://www.iaisweb.org/page/consultations/closed-consultations/revised-insurance-core-principles-13*.

[390] *See* IAIS, "IAIS Releases Updated G-SII Assessment Methodology," news release, June 16, 2016, *http://www.iaisweb.org/file/61170/iais-press-release-updated-g-sii-assessment-methodology*.

Box 9: Global Systemically Important Insurers Identified by the FSB in 2016

Aegon N.V.	Netherlands
Allianz SE	Germany
American International Group Inc.	United States
Aviva plc	United Kingdom
AXA S.A.	France
MetLife Inc.	United States
Ping An Insurance (Group) Company of China Ltd.	China
Prudential Financial Inc.	United States
Prudential plc	United Kingdom

Source: FSB, *2016 List of Global Systemically Important Insurers (G-SIIs)* (November 21, 2016), *http://www.fsb.org/wp-content/uploads/2016-list-of-global-systemically-important-insurers-G-SIIs.pdf*.