February 5, 2020

RESPONSE TO RFP GMU-1603-20

George Mason University

Together, Leading with Impact and Industry

MARSH & McLENNAN COMPANIES

Contents

SECTION ONE

Executive Summary

Higher education faces the most challenging and dynamic risk environment, stretching the resources of risk management departments. Colleges and universities are vulnerable to concussion injury litigation, sexual abuse and molestation litigation, terrorist attacks, active assailant events, data security breaches, tax- imposed funding constraints, restrictive immigration laws and increased scrutiny from government agencies (i.e. Department of Education and Office of Institutions). An especially critical threat to an institution is an inability to attract and retain top students and faculty.

Institutions that have not prepared for these crises stand to suffer severe consequences -- reputational risk, financial loss, legal expenses, regulatory penalties and fines. Conversely, those institutions that properly manage their risks and challenges will retain and attract key faculty and students, research partnerships and prevent regulatory fines, all of which can help protect the reputation and sustainability of an institution.

George Mason University (Mason) is aware of these traditional industry risks. Additionally, you have the added risks associated with being a Division I athletics program and having an international campus. Your location outside of the District of Columbia poses additional complexities for student safety and capital development strategies. Significant attention must be devoted to properly identify, analyze, and control risks. You want to avoid the distractions of risk, and focus on producing future leaders who are equipped to challenge the economic, social, and political issues for the betterment and sustainability of our world.

Innovative academic experiences are expanding the walls of our traditional institutions, including online learning, distance learning, and learning abroad. Protecting students from natural disaster, crime, and government insurrection can prove difficult without a global partner to design loss control and safety programs that adhere to available and provided enhanced protective resources.

Marsh's Education Practice thoroughly understands the risks of educational institutions, and the complexities that come with managing a reputable public school. Along with our sister companies, we have the expertise and thought leadership to help successfully guide Mason through these turbulent times. Over our many years of experience in Higher Education, we have developed a solid track record of consistently delivering cutting edge solutions.

Partnering with Marsh will enable Mason to benefit from:

- **Innovative Risk Solutions** – Marsh has been instrumental in creating a number of markets, most notably, United Educators (UE). Another example of Marsh's impact on the education insurance market is Wright Specialty Insurance, launched in 2009. In addition to being instrumental in product development, Marsh is a select broker and distribution partner to bring additional options and competition to the education market segment.
- **Market leadership** – Marsh's Education Practice has a dedicated placement team that focuses solely on the risks of institutions such as Mason. Our education team has significant relationships in the marketplace, which enables us to enhance policyholder coverage to align with changes in your risk profile. Marsh's Higher

Education placement specialists have relationships with the key insurers and experience with complex claims such as sexual molestation or athletic concussions. Marsh will engage additional experts to address Mason's unique exposures including but not limited to **construction**, **international** and **public entity**.

- **Identification of Emerging Issues** – Marsh's Education Practice monitors the current trends within the industry from all perspectives – legal, finance, regulatory, and insurance – to offer our global consulting for your enterprise risk management strategy. As your strategic partner, we will assist Mason with identifying and analyzing risks across your full scope of operations. Then, drawing on solutions available through the various risk consulting practices, we will help Mason build and execute a cost effective strategy for addressing any areas that warrant further enhancement.
- **Mason's Dedicated Risk Management Team** – Eric Harley will serve as the Client Executive with accountability for your satisfaction. Jean Demchak will serve as the Global Education Practice Leader. Charmaine Davis will be the Account Executive for casualty and your core services. Our team includes representatives across our Education practice, from risk consultants who specialize in higher education and research institutions to claims advocates who have worked on complex claims related to professional athletics (TBI/CTE) as well as athletic equipment manufacturers.

We listen, study, and analyze. We design and execute. We value serving our clients with integrity, reliability, accuracy, and responsiveness. We rely on our experience, knowledge, insight, partnership, preparation, and planning to deliver outstanding results. Our goals for Mason are simple yet critical — provide clear strategies and flawless execution for daily services and insurance placements based on our in-depth understanding and analysis of your institution's risk profile, and deliver education-specific risk consulting, claim handling and advocacy, and business continuity.

We are excited about and appreciate the opportunity to present our capabilities in this proposal. We are confident that our experience in the higher education industry and ability to provide world-class service and deliver results to Mason will be evident. We are dedicated to begin this journey with you while striving to constantly support your risk management efforts. After you have reviewed our proposal, we welcome the opportunity to sit down with you and your team for an in-depth discussion.

Respectfully Submitted,

Jean Demchak

Jean Demchak
Managing Director
Global Education Practice Leader

Eric Harley
Senior Vice President
Senior Client Executive

Charmaine Davis
Senior Vice President
Senior Account Executive

SECTION TWO

Question Responses

1. Procedural Information

1.1 Request for Proposals GMU-1603-20 Page 1

a. Return signed cover page and all addenda, if any, signed and completed as required.

Refer to Appendix C.

1.2 Vendor Data Sheet

b. Return Completed Attachment A – Vendor Data Sheet.

Refer to Appendix D.

1.3 Small Business Contracting Plan

c. Return Completed Attachment B – Small Business Subcontracting Plan.

Not applicable.

1.4 Payment Preference

d. State your payment preference in your proposal response. (See section XVI.)

Marsh utilizes the Commonwealth of Virginia's portal payment methodology as we have for the past five (5) years.

2. Qualifications and Experience

2.1 Company Profile

a. Describe your experience providing the services requested in the Statement of Needs.

The Marsh Story — Defining Insurance Brokerage Since 1871

Marsh is a global leader in insurance broking and risk management that helps clients to define, design, and deliver innovative industry-specific risk management solutions. Marsh's approximately 32,000 colleagues collaborate to serve clients in more than 130 countries. Marsh is a wholly owned subsidiary of Marsh & McLennan Companies (NYSE: MMC), which was founded in 1871 when Henry Marsh and Donald McLennan merged their two firms to become the largest insurance agency in the world. Today, MMC is a global team of professional services companies offering clients advice and solutions in the areas of risk, strategy, and human capital. With more than 65,000 employees worldwide and annual revenue exceeding $14 billion, Marsh & McLennan Companies is also the parent company of Guy Carpenter, a global leader in providing risk and reinsurance intermediary services; Mercer, a global leader in talent, health, retirement, and investment consulting; and Oliver Wyman, a global leader in management consulting. The diagram below displays the structure of Marsh & McLennan Companies.

Marsh's Service Philosophy

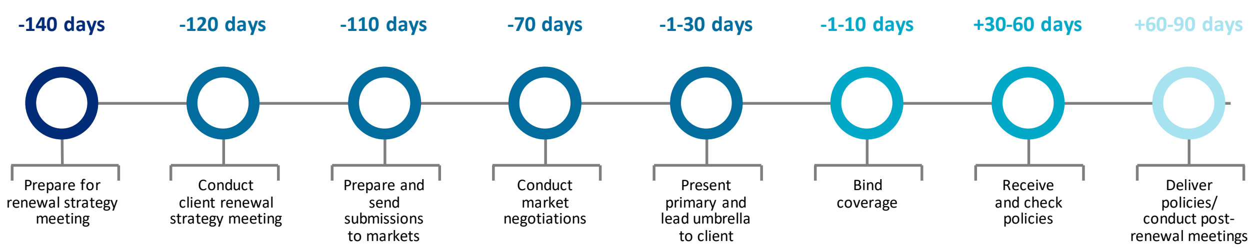
Brokerage begins with the placement of insurance policies — the transactional element is central to our purpose, but that is only a part of our overall role. We strive to be your partner, your advocate, your risk consultant, and in many ways we will serve as an extension of your risk management team.

A.1.a. Determine Mason's particular needs by scheduling fact-finding meetings; determining extent of current coverage and ascertaining long-term goals.

We understand the challenges that the higher education industry has faced over the past 12+ months and know the University has not been immune to these challenges. The current market is unfavorable for policyholders across the entire spectra of industries, sizes and risk profiles. Like the University, many organizations have been motivated by recent renewals to evaluate all methods, including non-traditional, of risk transfer. With our understanding of your risk profile and operational and financial objectives, Marsh will guide the University in evaluating the pros and cons of different alternative risk solutions. This starts by having a detailed renewal strategy for the effectiveness and accountability of the execution of the renewal. We believe it should include measurable goals and objectives, target dates and clearly identified responsibilities that we have discussed and agreed upon with you.

Annual Service Cycle

During the annual service cycle, we start with understanding Mason's short- and long-term risk management goals and objectives, and the best method to maximize value by aligning Marsh's industry expertise and service platform.



Strategy Planning

- Better understand your business strategy, risk profile, financial and service objectives and key performance indicators (KPIs).
- Identify new or emerging risk issues where Marsh can create value added solutions.
- Better understand your capacity to retain risk.
- Identify opportunities to maximize value in the existing risk management program.

Renewal Design

- Peer review – in-depth critique and analysis of current coverage.
- Deliver benchmarking and solutions with 12- and 24-month planning cycles.
- Conduct cost-benefit analyses to enable prioritization of solution execution.
- Integrate claims and risk control solutions to attack risk drivers.
- Improve service efficiencies that impact, people, processes, and systems.

Program Administration

- Billing (within 5 business days of binding).
- Binders.
- Policy issuance (received from underwriters no later than 60 days from the date of binding).
- Policy updates.
- MarshConnect.

Performance Review

- Tie results back to your KPIs to measure the value of risk management to your overall business.
- Review and manage goals set, progress made, and results achieved.
- Outline collaborative achievements, evaluate feedback, and target areas for improvement.
- Provide a clear view of the total cost of risk.

As a guideline for developing a specific service plan for the University, we have listed below the key components of traditional and non-traditional risk solutions and the approach to each of them.

- **Review Goals, Objectives, and Standards:** An effective program can only be achieved when clear objectives and priorities are established. To accomplish this, we will to work with you in an open and active dialogue to determine your goals and expectations.
- **Analyze Existing Program:** Through peer review and risk practice review, we endeavor to continuously analyze the strengths and weaknesses of the current insurance program. This information helps us design the optimal program.

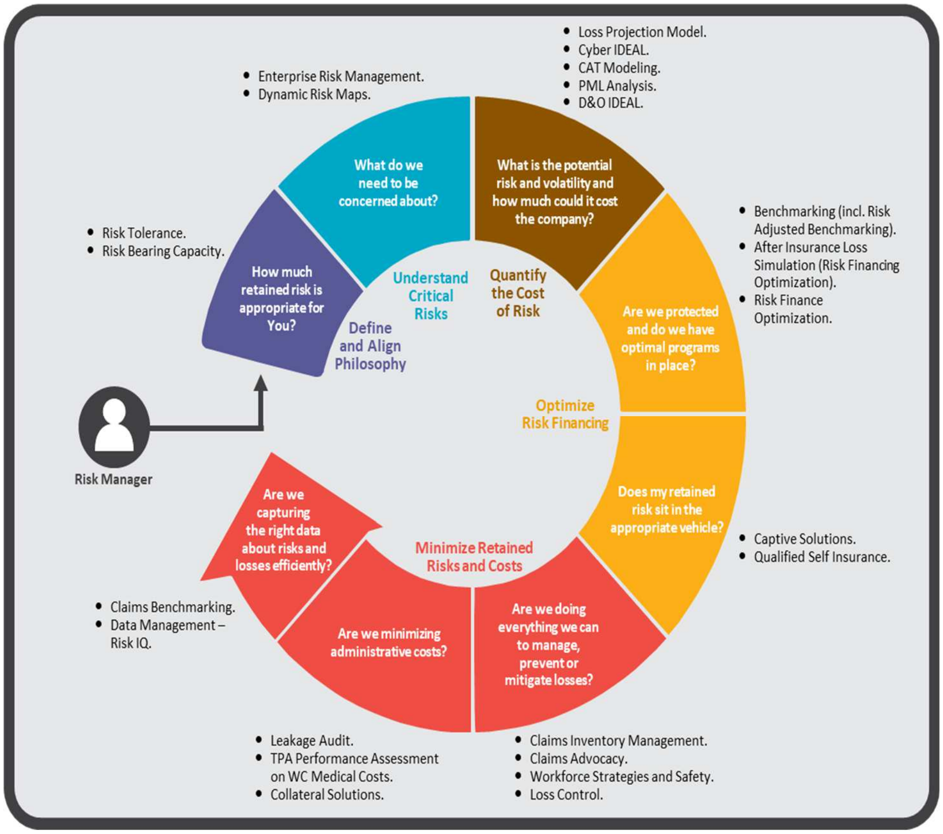
- **Evaluate Program Alternatives/Options:** Continual monitoring of your risk management program to its peer group is an important validation process.
- **Develop the Optimal Program Design:** The result is an innovative, comprehensive program, in terms of design, form, and funding approach, which meets your specific objectives.
- **Survey and Evaluate Potential Markets:** One of our greatest brokerage strengths is our knowledge of which insurers to approach for your risk. Our brokers have strong relationships with individual underwriters. We also draw upon our expertise and experience in marketing similar types of programs. This results in the development of a strategic marketing plan.
- **Prepare a Quality Submission:** High quality submissions are integral to successful marketing efforts and enhance your institution's desirability as a risk to underwriters. Our specifications address all of your coverage and service requirements. Furthermore, we will help the University to stand out amongst its peers.
- **Provide Strategic Marketing Services:** Marsh's commanding worldwide market presence and reputation are distinctive advantages during insurance company negotiations. Our market reputation, relationships, and portfolio ensure that we obtain a competitive program for you. Successfully marketing an insurance program for the University is one of our most important responsibilities.
- **Evaluate Insurer Proposals:** We quantify the risk/reward trade-off between competing proposals.
- **Provide Program Administration Services:** An important part of our role as your broker is to help you manage the day-to-day operations of the program. Our professional standards help to ensure that essential administrative tasks are handled in a timely, consistent, and efficient manner.
- **Maintain Insurer Relationships:** Marsh maintains a solid relationship and substantial book of business with virtually every major insurer. We communicate daily with our markets and also conduct regular liaison meetings at a senior management level. These strong insurer relationships can be very important during insurer negotiations involved with renewals or claims scenarios.
- **Monitor Program:** We take a proactive approach to monitoring the program so that coverage, funding and service issues can be identified and resolved quickly. By monitoring the performance of your program closely, we will take prompt corrective action as needed.

Risk Identification

Through Marsh's Education Practice we have a deep understanding of Mason's issues and risks. At the onset of our relationship, our core team will meet Mason's staff to establish our plan for working together. We will establish specific goals and objectives you would like to achieve, and execute a process of discovery including:

- **Data Gathering** Marsh will work with Mason to the collect the information needed to analyze and place your programs.
- **Discovery Questions** We will come prepared with a list of questions for each line of coverage, pre- and post-loss issues to encourage a dialogue that most adequately and efficiently allows us to understand Mason.
- **Utilize Industry Risk Map** We will use our knowledge from other risk identification sessions with your peers and our thought leadership around the current and emerging risks facing Mason to begin a new discussion around your risk profile. We will share the baseline risk inventory which will provide the top 10-12 risks

consistent in higher education and that may impact Mason. Our team will collaborate with the risk management and leadership teams of Mason to prioritize the most prominent risks you face.



Marsh's data, analytical approach, and overall investments in client-centric technology create a best-in-class platform for advising you on your risk financing options. We believe that we place more property, casualty, and management liability insurance for companies of Mason's size and complexity than any other broker. This large client base provides us and our clients with better insight into peer buying patterns, market pricing, available coverage and claim data.

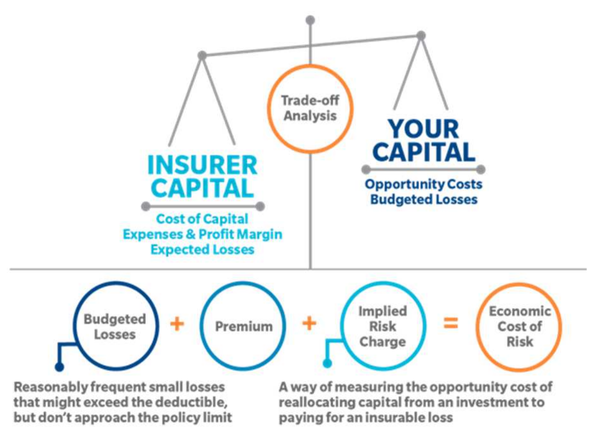
Below is a sampling of the analytical tools we will apply to assist Mason with making informed buying decisions.

Tools	Value
Risk Identification and Analysis Industry practice expertise Strategy plans Discovery dialogue Risk focus	Broad-based identification of the risks your business faces so you can make informed decisions in developing strategies to address each risk according to the priority of its potential impact on your business.
Benchmarking Limits, Retentions, Cost, Coverages, Damage	Our continuously expanding benchmarking database currently includes information on: 1. $75 billion in premium placements.

Tools	Value
assessment, Ad-hoc elements 	2. $10 trillion in limits. 3. $45 trillion in insured value. **Lines:** property, including both “all-risk” and terrorism coverages; casualty, including auto liability, general liability, and workers’ compensation; directors and officers liability; fidelity; fiduciary liability; and employment practices liability insurance. Our benchmarking reports compare your losses, premiums, and other program elements against your peers to better understand where you are and ensure the most cost-effective risk management program.
AXCO Country Intelligence 	This tool includes a country profile service that provides: • 34 topics for over 160 countries. • Dynamic report building capabilities to compare topics by country. • Concise summaries of pertinent topics in the insurance marketplace. • High-level contact information for Marsh local placement contacts with geographical expertise. In addition, access to current and archived AXCO regulatory alerts, as well as monthly emails highlighting major compliance developments in international insurance markets, can be provided.
International Regulation and Taxation Dashboard 	This dashboard provides information regarding local compulsory insurances, non-admitted, fronting, insurance premium tax (IPT), reinsurance, and premium payment in a highly-customizable manner, allowing brokers to quickly obtain guidance for specific coverage lines or countries, and generate side-by-side country or coverage line comparisons.

Advanced Analytics: Risk Financing Optimization

Going to the next level in risk modelling, the foundation of MAP is our methodology for optimizing insurance structures called risk finance optimization (RFO), which uses an economic cost of risk (ECOR) metric to optimize insurance structures. The basis of ECOR is the traditional Total Cost of Risk (TCOR), which simply adds the premiums and budgeted retained losses, and adds a cost for the volatility you might experience from unexpected, uninsured losses, similar to the concept of a “risk load”. At its core, the ECOR framework is a trade-off analysis that assesses the benefit (or sometimes cost) of transferring risk. The addition of the volatility component makes for a more superior and responsible view of risk and potential



cost than traditional measures of TCOR. The Marsh Risk Analytics group has extensive experience modeling a wide range of risks with over 1,500 RFO analyses performed to date.

Workers' Compensation Performance Assessment

Marsh's WCPA provides a comprehensive view and benchmark of the University's loss trends and pre/post loss experience. We can use this information to drive strategy around claims management. Please see below a sample output of our Workers' Compensation Performance Assessment (WCPA)

Value to Mason

- The goal is always the same – employ powerful analytics and specialized tools to help maximize your return on investment through lower cost, increased efficiency, and improved business risk decisions.
- Our philosophy around data and analytics with respect to Total Cost of Risk ensures that our clients are making well informed decisions when it comes to risk transfer and risk retention. While traditional benchmarking reports are valuable, we believe that an effective comparative analysis should go beyond basic industry benchmarking reports and consider Mason's unique approach to and comfort level for risk.

Market Relationships

A.1.b. Solicit quotes from insurers and assist in evaluating the options received from insurers.

A.1.c. Make a diligent effort to place insurance at the lowest possible price consistent with adequate limits, breath of coverage and stability of insurers.

We have strong, long term relationships with all of the major markets. In fact, Marsh has the top broker relationship with most insurers in the marketplace. In 2018, Marsh placed in excess of $52.2 billion in premium into the global marketplace. Based upon our knowledge of Mason's current insurers, we are pleased to say that Marsh is the largest single provider of insurance premiums for your providers. We leverage these relationships to **drive cost savings, tailored coverage**, and **services** for our educational clients across their entire global insurance and risk management portfolio.

- AIG/Lexington
- Allianz
- Allied World
- Apollo/Aspen
- Arch
- AXIS
- Beazley
- Berkshire
- Berkley
- Brit
- Chubb
- Church Mutual
- CNA
- Colony
- Crum & Forster
- Everest
- Genesis
- Great American
- GuideOne
- Hamilton Re
- Hanover
- Hartford/Navigators
- Hiscox
- Liberty/Ironshore/LIU
- Markel
- Midwest Employers
- Munich Re
- Old Republic
- OneBeacon
- Philadelphia
- PMA
- QBE
- RSUI
- Safety National
- Sentry
- Sompo
- Starstone
- Swiss Re
- Travelers
- **United Educators**
- Westchester
- Wright Specialty (Markel)
- XL/Catlin/AXA
- Zurich
- American Alternative (Glatfelter)

SUCCESS STORY

- **Problem:** The risk manager of a large diversified company approached Marsh with a problem – "we are going through difficult times and our board has asked us justify our insurance spending and cut it by 20%". At first this seemed like a very difficult task as coverage lines had been marketed almost every renewal and costs have frequently been benchmarked against the market and loss costs.
- **Process:** Our usual response to a request like this is to suggest aggressive marketing, higher deductibles, or reduced limits until the 20% threshold was reached. Although we eventually included some of those in the solution we took a more comprehensive and deliberate approach. We took an in depth look at the client's operations, risks and corporate objectives and then engaged Marsh Global Analytics (MGA) to analyze exposure and loss history. MGA's analysis included a determination of the efficiency of each insurance purchase, quantification of the client's risk bearing capacity and a review of ultimate risks both the aggregate and multiline/multiyear perspectives. Finally, using all this data and analysis we consulted with a broad group of experts to brainstorm solutions and gauge the insurance market's ability to provide solutions.
- **Solution:** Ultimately we delivered a program that met the objective of a 20% premium reduction through increased individual deductibles, eliminating unnecessary purchases and leveraging the client's entire portfolio. Importantly, the new program was more effective in managing overall variability in total cost of risk. A key feature of the new program was the elimination of individual line loss aggregates which were replaced by multiline and multiyear aggregate protection. Another key feature increased individual line deductibles that were capped in a multiline event by a clash (all lines) deductible. As in any significant program change with increased retentions there was concern about risk, but analytics allowed the client to be comfortable that the new program provided the needed protection.

Performance Standards

A.2. General Services: a. Deliver confirmation of coverage once it is placed; b. Follow up with insurance carriers to obtain policies and/or endorsements; c. Review policies and endorsements for conformity with agreed terms and coverages; d. Provide answers to Mason and obtain clarification from insurers, underwriters or adjusters regarding coverage; e. Administer insurance policies, including a formal review and analysis of the policy terms, conditions and coverage; f. Issue certificates or memoranda of Insurance; g. Review premium and exposure audits, rating adjustments, dividend calculations and loss data; h. Provide invoices, except in the case of direct billing by insurers. Remit premiums to insurers and, where applicable, remit taxes and fees to the relevant authorities.

Marsh professional standards promote and monitor service quality through clearly defined performance standards and continuous improvement strategies. We maintain formal quality guidelines, policies, and procedures, and we regularly conduct internal audits and reviews of specific account activities. All aspects of service (from initial concept to delivery of policies) are managed through a well-established system of checks, balances, and accountability. We also seek feedback from clients on the quality of our work through our client satisfaction survey, and we summarize our account activities in our annual performance planning review.

Your Client Executive, Eric Harley, is ultimately responsible for your Marsh team's adherence to expectations and service standards. Your team has developed a detailed plan for exceeding Mason's service expectations and to escalate any and all issues. The following table lists the deliverables and schedule for the typical deliverable that Marsh provides.

Service	Turnaround
Binders of Insurance	All binders must be detailed, signed by the underwriter, and received by Marsh prior to policy inception. Coverage may not be bound without specific written authorization from the University. Binders will be transmitted to the University prior to policy inception. Detailed binder transmittals will be submitted within one week following binding date.
Policy Issuance	Marsh requires policies to be received from the underwriter no later than 60 days from the date of binding. Policies must be checked by two licensed brokers with coverage expertise and sent out with a transmittal letter capturing our findings (i.e. corrections, claims reporting provisions, etc.). Policies should be sent out as soon as possible after they are received, but no later than 30 days thereafter.
Policy Updates (endorsements, coverage changes, etc.)	These are treated in the same manner as policies.
Summaries of Insurance	Provided with the Binders.
Policy Notebooks	Marsh is environmentally conscious. Policy notebooks containing hard copies of your policies will be provided upon request.

Service	Turnaround
Certificates of Insurance	**Certificate Processing Center** — Mason has access to our dedicated Certificate Processing Unit in Austin, Texas. Hours of operation are from 7:00 AM to 8:00 PM CST Monday – Friday. Marsh will design a certificate request process based on your unique preferences to manage contractual risk and compliance. **Commitment to 24-hour turn around** — Standard processing time is same-day, or a maximum of 24 hours. Urgent and rush requests are easily accommodated within one hour.
Auto I.D. Cards	Within 24 hours.
Billing and Reconciliation	Your client service team assures efficient processing of premium invoices — according to your accounting requirements and asset reconciliation. We will work with Mason to prepare allocation of premiums, if necessary. Once this is agreed upon, Marsh will process and review all insurer invoices and premium audits for accuracy. Marsh strives to have all invoices issued within 5 business days of binding coverage. Marsh will collect and remit taxes and fees, as necessary.
Premium Adjustments	Marsh will request insurer audits, dividends and retro adjustments reports and perform analysis for accuracy of data and present Mason for review and acceptance. Marsh will generate credit or debit invoices for agency billings.
Day-to-Day Support	Your client service team is available to provide answers to coverage questions that might arise from new agreements, changes in agreement, expanded exposures and hazards. Marsh will respond to typical requests within 24 hours. More complex issues may require additional time for research and industry expertise.

Market Information Group

A.2.i. Monitor published financial information of Mason's current insurers and alert Mason when one of those insurers falls below minimum financial guidelines.

Evident in our ability to secure the most competitive premiums, create innovative risk transfer products, reduce collateral requirements, and get claims paid, Marsh has built insurer relationships at the highest level. Marsh is the largest producer for most insurers – our relationships are excellent at the highest levels.

Marsh has established minimum financial guidelines (A - VIII) for the insurers we use to help provide a relative framework and highlight insurer solvency.

Marsh's Market Information Group (MIG) is responsible for following and analyzing the financial condition of the insurance companies with which Marsh places business. MIG analysts are available to speak to or correspond with Mason to provide additional detail, insight, explanations, and background regarding the financial condition of any insurance company.

The MIG analyzes public financial information such as statutory annual and quarterly statements filed with regulatory agencies. Other important sources of information include annual reports, documents filed with securities and exchange commissions, industry publications, and rating services. MIG may also meet with or question the senior management of an insurer to gain additional insight into the insurer's operations.

Marsh has established minimum financial guidelines (A - VIII) for the insurers we use to help provide a relative framework and highlight insurer solvency. While Marsh does not guarantee the solvency of any insuring entity, your service team will keep SMU fully informed about changes in the insurance marketplace.

In the Event of a Downgrade

When an insurer falls below Marsh's minimum financial guidelines, MIG sends a Market Alert email to Marsh colleagues. It informs clients by issuing mid-term notification letters stating the market no longer meets the firm's guidelines. After you are contacted, your Marsh team will work with you to develop an appropriate course of action. The Market Information Group analysts are also available to help you decide whether to continue to place business with the insurer.

Optimal Risk and Insurance Solutions

A.2.j. Develop a strategy for any upcoming renewal to be presented in writing to Mason at a minimum of 90 days before expiration. Include and identify any intent intermediaries used in the quote process.

Marsh is the Broker for Mason's Excess Liability and Internship Professional Liability policies placed with United Educators (UE). As previously expressed, higher education risks, like Mason are experiencing challenging renewals including but not limited to markets exiting the industry segment, reducing capacity, increasing rates and premiums, attaching exclusions and increasing underwriting scrutiny, even on existing policyholders. In anticipation for the 2020 renewal, Marsh is closely monitoring UE's renewal plans. To achieve the most optimal renewal outcomes, Marsh will implement the below plan of action for the upcoming renewal:

April, 2020

- **Schedule Risk Identification Meeting** with Mason to gain an understanding of any changes to the familiar operations, including changes in data

May, 2020

- **Collect renewal data and applications** from Mason to build the submission to the marketplace
- **Perform Risk Analysis** to assess deductibles, retentions, limits and pricing against Mason's peers and discuss results with Mason to prioritize coverage positions
- **Conduct coverage analysis** and include recommendations within current policies and additional risk financing solutions to protect Mason's balance sheet against claims and losses
- **Design market strategy** based on the risk profile and strategies mutually agreed upon with Mason

June, 2020

- **Approach the marketplace** to solicit bids from the incumbent, UE and alternative insurers
- **Host underwriting meetings** to improve Mason's attraction by incumbent and alternative risks, where necessary
- **Analyze proposal** terms and conditions and negotiate improvements

July, 2020

- **Present renewal proposal** to Mason and assist with making renewal elections
- **Bind renewal options**

August, 2020

- **Deliver Binders** to Mason with a transmittal summarizing our review for agreement with negotiated terms and conditions
- **Invoices** will be generated and delivered to Mason for premium and fee collection

October, 2020

- **Policy delivery** will occur once collected and reviewed for accuracy
- **Stewardship meeting** will be scheduled to evaluate the renewal, review renewal terms and conditions, open items and emerging issues

Annual Marketing Approach

A.2.k. Provide annual renewal quotes on all annual policies, and at expiration of any multiyear policies.

As addressed in A.2.j., Marsh will schedule an annual meeting in advance of each renewal to design a mutually agreed upon renewal strategy. Marsh and Mason will design a marketing strategy for annual renewals, including soliciting renewal quotes from the incumbent or approaching alternative markets to validate the most competitive program is secured for Mason.

Proposal Analysis and Presentation

A.2.l. Disclose coverage additional and coverage restrictions on all renewal quotes in a chart format as compared to the expiring coverage. Seek newly available enhancements to any policy and change, augment or amend any policy, if possible, after it is bound or before it is renewed in the best interest of Mason.

Our role is to assist Mason with making informed decisions. To help you, Marsh will perform a comprehensive marketing comparison identifying changes in coverage at each renewal and a comparison of all quotes obtained on your behalf. The comparison reviews rates, limits, deductibles, coverage forms and endorsements. Additionally, the comparison will include insurer financial ratings. Refer to the below partial sample Financial Coverage Comparison.

Example

	EXPIRING PROGRAM	RENEWAL PROGRAM	ALTERNATIVE OPTION I	ALTERNATIVE OPTION II	ALTERNATIVE OPTION III
Insurance Company:	The Hartford	The Hartford	Chubb	Travelers	C.N.A
Carrier:	Hartford Fire Insurance Company	Hartford Fire Insurance Company	Federal Insurance Company	Travelers	Continental Casualty Insurance Company
AM Best Rating:	A+ p XV	A+ p XV	A++ g XV	A++	A g XV
General Liability					
Liability	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000
Medical Expenses - Any One Person	$10,000	$10,000	$10,000	$10,000	$10,000
Personal and Advertising Injury	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000
Damages to Premises Rented To You - Any One Premises	$300,000	$300,000	$1,000,000	$1,000,000	$1,000,000
Aggregate	$2,000,000	$2,000,000	$2,000,000	$2,000,000	$2,000,000
Employment Practices Liability					
Each Claim (01/01/2002)	$5,000	$5,000	Not Included	Not Included	Not Included
Deductible	$0	$0			
Aggregate	$5,000	$5,000			
Employee Benefits Liability	Not Included	Not Included	Claims Made 1/1/2020	Claims Made 1/1/2020	Claims Made 1/1/2020
Each Occurrence			$1,000,000	$1,000,000	$1,000,000
Aggregate			$1,000,000	$3,000,000	$1,000,000
Deductible			$1,000	$1,000	$1,000

Training Resources for Mason

A.2.m. Provide or arrange for training in a variety of exposure areas, as requested.

As we continue to analyze Mason's risk profile, your service team will identify opportunities that may be valuable to Mason's knowledge and loss control & safety services. Your service team can offer personalized, high-level training on contractual risk transfer, certificate workflows, data collection and risk management 101 workshops. For more complex training that will have a larger risk mitigating impact, we will engage Marsh Risk Consulting team, specialized in Higher Education.

Rick Vohden is uniquely qualified to identify emerging issues on campus, keep abreast of how your peers are managing risk, and analyze and benchmark claim experience. In our opinion, no other broker is in a position to offer similar intellectual capital or day-to-day risk consulting service. Following is a chart of risk issues inherent to colleges and universities, and some of the solutions that Marsh is able to provide through education and training.

Risk	Exposure Drivers and Amplifiers	Marsh Solutions
Athletics-Traumatic Brain Injury	This is latest "emerging" risk for colleges and university athletic departments. The litigation is overwhelming though primarily focused at the NCAA at present. While few actions have been taken directly against the schools, there is significant potential for a tsunami of litigation. Universities need to be aggressive in their efforts to prevent and care for concussion cases.	There are myriad other exposures around the arenas athletic venues and Marsh can assist Georgetown's athletic departments to mitigate those risks. Should Georgetown be confronted with a concussion claim, the Marsh Complex Liability Claim Practice is ready to advise and support you and minimize the potential financial impact.
Campus Security - Protection of Staff, Students and Visitors	Schools provide a highly visible emotionally charged target and have proven to be a venue for the use of violence to gain attention or make a "statement."	We can assist in developing procedures and delivering training for staff and students to comply with Title IX including the Clery act, Violence Against Women Act and the SaVE Act.
Capital Improvements and Construction	Population growth and increased demand for quality leads to capacity pressure and need to manage complex construction, cost overruns, project delays, and disputes with contractors.	Pre-construction/renovation risk assessments. Assistance developing criteria selecting contractors and service providers, site EHS compliance.
Cyber Risk	Increasing with greater network dependency; HIPAA; intellectual property — first- and third-party risks; identity theft.	Provide customized solutions in the areas of: IT Risk Workshop, vulnerability management, IT security assessment, HIPAA information security and FERPA, policies, standards, and guidelines.
Damage to the School's Reputation	The reputation of the school can be significantly damaged through improper response and handling of any disruptive event, especially one that has a high degree of impact on people.	Reputational Risk and Crisis Consulting. Prepare for the worst through loss prevention, planning, emergency response, business recovery and crisis communications, all focuses on protecting the brand.
Disaster Planning	Natural Disasters — earthquake, windstorm, fires, tornado, and pandemic.	Emergency plan reviews, pre-loss business interruption loss forecasting, table drills, simulation exercises.
Employment Practices	Discrimination and wrongful termination claims increasing with a retaliation component in most claims. Tenure issues are more complex. Wage and hour disputes are proliferating.	Review and analyze policy wording for gaps; negotiate with insurers for coverage enhancements; provide best practices for tenure hiring, etc.
Environmental Affairs	Education institutions today are facing many different types of exposures and liabilities, but over the past years, environmental-related risks have risen to near the top of the list.	MMA environmental risk quantification, MMA historical asset (insurance) recovery, pollution legal liability (legacy and operational liabilities). FDEP and USEPA compliance assessments.
International Programs and Off-campus Faculty Sponsored Field Trips	Transportation risk, potential travel to higher risk regions, physical demands of research activities, exposure to natural hazards, civil unrest, terrorism and infectious diseases.	MRC can assist in the preparation of risk management organization, faculty, student and parent education materials, participant medical and security insurance plans, and emergency protocols.
Laboratory Safety	Student and faculty safety in instructional labs and growing chemical and biosafety research.	MRC has developed expertise in the assessment of chemical, biological and animal, radiation, nanotechnology, and laser safety.

Risk	Exposure Drivers and Amplifiers	Marsh Solutions
Law Enforcement	Undue use of force, weapons or physical abuse, false imprisonment.	Marsh can review security team training and education, school policy and procedures, emergency preparedness procedures.
Minors on Campus	Universities offer a diverse environment of classrooms, offices, laboratories, recreation and other activities that will attract children and minors to campuses.	MRC Best Practice Guides outlining: • Employees bringing children and children to work. • Students bringing children to class. • The Best Practices for Managing Minors on Campus. • Visitors bringing children on campus. • Employment of minors and children. • Offering extracurricular learning opportunities for minors.
Sexual Assault	High-profile occurrences; Increase of awareness of issues = more litigation.	We have assisted institutions in developing and implementing preventative education plans for staff and students, investigation teams and Clery Report audits, VAWA and SaVE Act compliance.
Student Organization Activities	Specific types of recognized organizations create unique exposures for Georgetown and student welfare such as high adventure clubs; DARPA and SAE car competitions, Greek and sport organizations.	Marsh has developed a template for assessing risks and facilitating risk reduction. Marsh resources offer advice on issues of alcohol abuse, hazing, participant safety practices.
Studies and Research Abroad/International Travel	Claims involving faculty and students abroad are difficult to manage. In addition, many bureaucracies once friendly to the US are now considered hostile and creating new challenges.	MRC has developed assessment and benchmarking guideline for short and long term international programs and have assisted universities to implement emergency response and recovery strategies for operations abroad.
Third Party Use of Facility	Lack of control.	Assist with contract review and other solutions to keep liability out of insurance program.
Vehicle Operations and Transportation	Potential for multiple claimants. Known hazard and limited insurance available. Extra-territorial travel away from campus, reputation risk.	MRC has developed a risk mitigation model to address fleet safety and reduce the potential for transportation accidents along with the Marsh PACE Behavioral Van Driver Education.
Workers' Compensation Injuries	Maintenance staff; repetitive injuries on the rise; FEMA.	MRC can assist auditing OSHA compliance, EH&S strategies for injury prevention, and developing a return-to-work program reducing claims and loss costs.

Claims

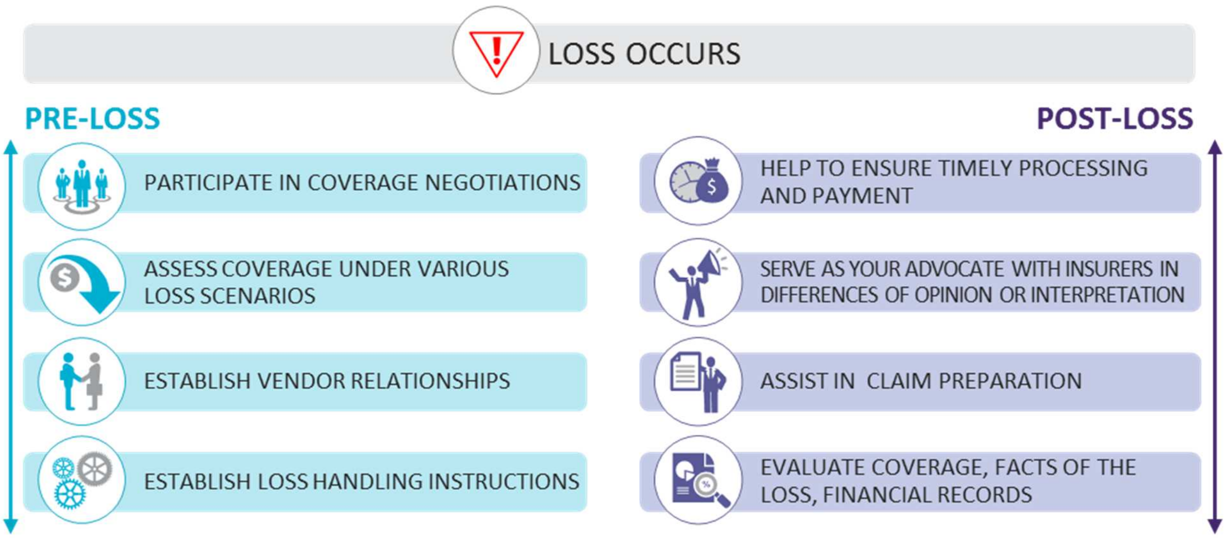
A.3. Claims-Related Services: Contractor shall promptly settle all claims for coverage; and at a minimum provide the following claims-related services, and other services that may apply: a. Evaluate coverage applicability on all placed business; b. Assist in the development of settlement strategies; c. Assist Mason with insurer negotiations; d. Assist with the litigation management issues that impact claim settlements; e. Prepare loss notices to insurer and notify insurers of claims; and, f. Provide answers to Mason and obtain clarification from insurers, underwriters or adjusters regarding claims questions.

The Marsh Claim Practice includes over 300 claims advocates in the US with expertise across all lines of coverage and in every jurisdiction. Their backgrounds, experience, superior claims technical knowledge, and relationships in the claims industry allow Marsh to provide its clients with invaluable insight and guidance in all aspects of claims management and resolution. We also provide claims management assistance to our clients with international claims exposures through the utilization of Marsh's global claims network.

Our client engagements start with an understanding of your business operations, claims history, needs, and expectations. We work with you to develop a claims service plan that is consistent with industry best practices to successfully manage your loss costs.

Our efforts on your behalf are focused on resolving claims as quickly and fairly as possible with the least amount of indemnity and expense dollars. Key activities include:

- **Selection of Defense Counsel** – We help our clients secure insurer approval of their selected defense counsel.
- **Establishing Lines of Communication** – We meet with the insurers or their attorneys early in the claims process to develop a mutually agreed-upon procedural framework.
- **Preliminary Coverage Analysis** – We advise our clients of the coverage issues raised by a claim and the coverage position the insurer will likely adopt.
- **Coverage Responses and Advocacy** – We negotiate coverage issues on our client's behalf, and if necessary elevate coverage disputes to the most senior levels within Marsh and the insurer. The hallmark of claims advocacy lies in our ability to maximize insurance recoveries for our clients.
- **Settlement Strategies** – We will assist you in developing settlement strategies that recognize your business issues or concerns in resolving claims in a timely and cost effective manner.



Additional Information regarding Marsh's Complex Claim Consulting Practice can be found in the Appendix.

FINPRO Claims Advocacy

Wanda will engage Kelly Thoerig, your Marsh FINPRO claims advocate, to assist with the management and resolution of claims for these policies.

Marsh's FINPRO Claims Advocacy group is staffed entirely of attorneys who are former litigators, insurance coverage lawyers and/or insurance company claims lawyers, and consists of 13 claims advocates in the United States, including one located in Richmond, VA, as well as additional local claims experts in each of our foreign locations. Taken together with our market relationships and aggressive, collaborative and proactive claims strategy discussed below, this combination of personnel and technology gives Marsh the best claims advocacy group in the business.

Marsh Risk Consulting

A.4. Risk Consulting/Loss Control Services: a. Provide risk management, and other services directly or indirectly; and other recommendations as requested by Mason, including, but not limited to, minimization of loss potential, property or liability inspection, actuarial services, and transfer of risk technique, and b. Provide Mason with advice and solutions across a comprehensive range of insurable and non-insurable risk issues.

MRC maintains a vast array of services that support university risk management for property protection; automobile, public, and environmental liability; workers' compensation/occupational injury prevention; and supplements any gaps that may exist in insurer services.

Liability Risk Management

Education institutions are often held vicariously liable for the unfavorable outcomes arising out student activities and academic programs sponsored by the school. Marsh has developed a methodology for analysis and evaluation of risks associated with on- and off-campus programs. Through our work with educational institutions around the country, we have developed a compendium of best practices for managing liability risks on campus. We will work with Mason to perform a needs assessment and determine what programs will best support Mason's Risk Management program. Some of the example programs we have worked with other institutions include:

- Safety in the campus instructional laboratory.
- Fire safety and security in campus housing.
- Vehicle operations and fleet safety.
- International research and study abroad programs.
- Minimizing medical malpractice — student health services.
- Food safety.
- Pollution prevention on campus.
- Automatic external defibrillators.
- Faculty sponsored field trips.
- Campus youth camps, early childhood learning centers and playgrounds, other programs for minors on campus.
- Campus risk identification and GAP analysis.
- Student organization risk management.
- Contractor safety.
- Contractors and service providers working on campus.
- Student organizations.
- Special events.
- Slips, trips, and falls.
- Students using power tools.
- Managing internships, externships and work/study.
- Reducing alcohol and illicit drug use.
- Managing commercial real estate.
- Campus risk management committees.
- Meningitis prevention.
- Inventor liability — research tech transfer and patent rights.
- Athletic liabilities.
- Fraternity and sorority risk management.

Cyber Security

Cyber risk is among the top three enterprise risks for every university, and for most it is the most critical concern for the Board of Trustees, Marsh Risk Consulting can assist Mason to assess its range of cyber risks and controls, such as:

- Malicious or Criminal Attacks.
- Human Error.
- System Glitches.
- Social Engineering.
- Denial of Service and Ransomware.

MRC Consultants can also assess the University's level of preparedness to respond for a cyber event.

Marsh Risk Consulting offers the broadest range of supporting risk management services in the industry and maintains the capability to assist Mason with whatever needs that it may require.

Multinational Brokerage Services

A.5. Support: Provide worldwide services and on-call support 24/7.

With a campus in South Korea, Mason will benefit from access to Marsh's local global office contacts throughout the world. Our global colleagues include diverse teams of experienced insurance professionals that will assist Mason with any global considerations across coverage lines, and if needed, analyze regulatory and premium tax concerns associated with any locally placed insurance programs.

Dedicated Local Teams around the world

Marsh is also standing by with a hand-selected team around the world waiting to support Mason's local operations in each country. These teams have the experience and expertise to handle multinational clients and have a clear understanding of the interaction between global programs and local insurance policies.

- Our local experts know how to optimally address in-country risks and local compulsory coverages such as Employers' Liability, Workers' Compensation and Motor Liability.
- They will act as your "eyes and ears" in the local marketplace, providing information on local requirements and ever-changing market dynamics.
- Support the local Mason operations with any other voluntary coverages in order to comply with contractual obligations.
- Lead renewal strategy meetings for local stand-alone policies and present alternatives that may improve coverage or cost. These will present a unique opportunity to reassess whether a policy should be renewed, marketed, discontinued, or otherwise adjusted.

Marsh Global Connect: Service Quality and Consistency

Our service culture is evidenced through our effective and efficient business processes, which ensure consistent and high quality service support to our clients around the world. Our multinational Rules of the Road accomplish this by guiding interaction between our Virginia offices and our local offices around the world.

Through our proprietary and innovative technology platform – Marsh Global Connect – we can provide Mason with timely, accurate, and complete information about your international insurance programs, enabling better decision-making and program optimization.

Marsh Global Connect will help Mason:

- Understand the full extent of your insurance portfolio.
- Evaluate your international policies to ensure they align with and support your risk management philosophy.
- Optimize your programs, including eliminating redundant policies, combining policies where desirable, and securing additional coverage where needed.

New Dashboard Analytics!
Clients and brokers can easily view global insurance portfolio

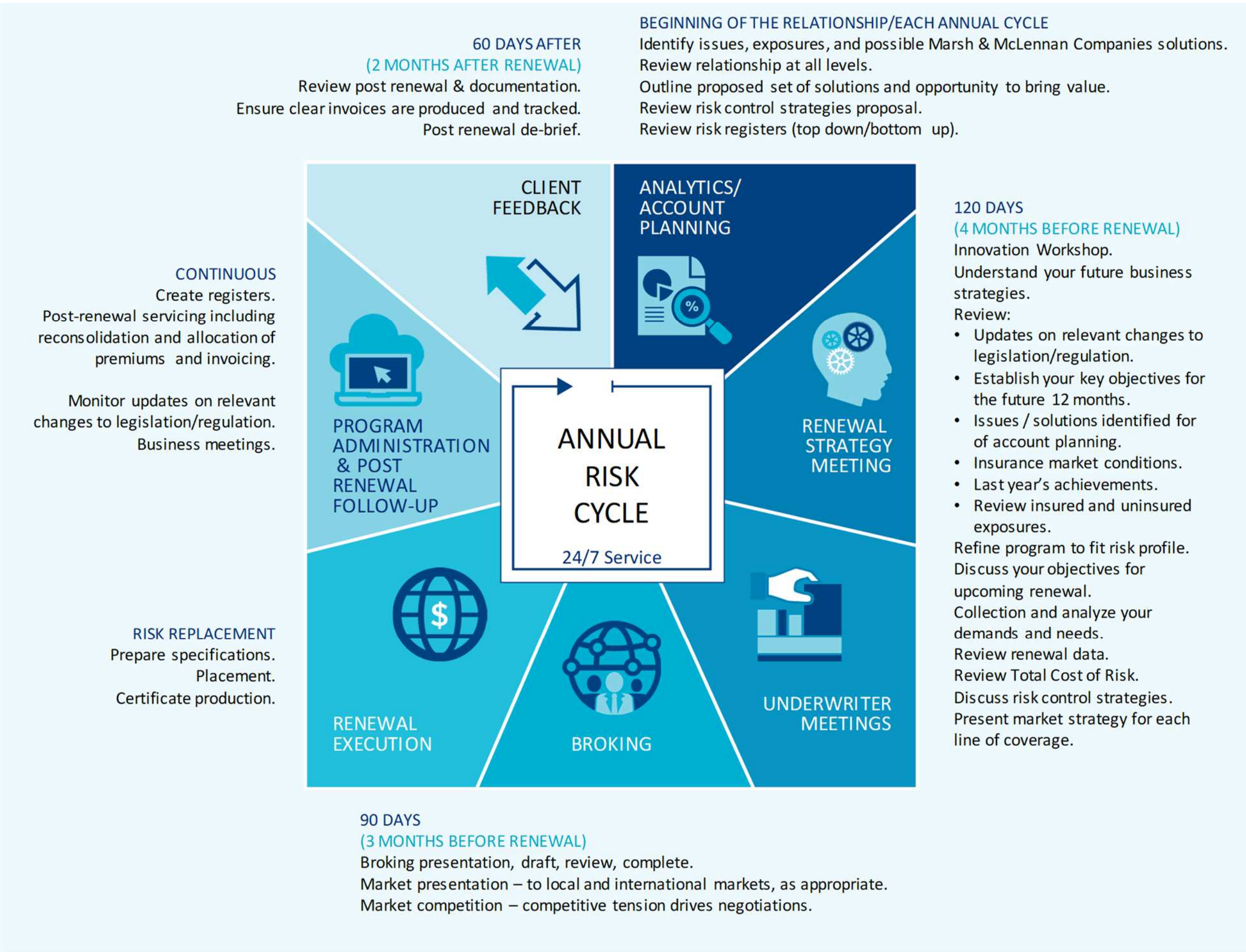
Deliverables to Mason

B.1. Coverage Recommendations: No less than sixty (60) days prior to the expiration or anniversary of any existing coverage, Contractor shall present recommendations concerning the renewal or anniversary.

B.2. Binders and Policies: Contractor shall provide binder or other evidence of insurance within ten (10) working days of the effective date of any insurance policies. These should outline the coverage's, including limits and deductibles. Endorsements to any policy should be delivered within thirty (30) days of the agreement on the endorsement.

B.3. Review Requirements: Contractor shall meet with Mason when each policy is delivered and no less than 90 days prior to the renewal/anniversary of any policy. These meetings are to review exposures, coverage, premiums, losses and other items to verify the adequacy of insurance in anticipation of policy renewal or anniversary.

As explained in A.1.a, Marsh's service cycle includes performance indicators and deliverables, which are agreed upon at the onset of our relationship. Additionally, our executed client service agreement holds us accountable for service and delivery, which are tested against Marsh's strive to deliver excellence in service. Marsh will make modifications to meet and exceed Mason's expectations for Renewal Proposals, Binder/Policy/Endorsement Delivery and Coverage Review Meetings.



Loss Reports

B.4. Loss Run Reports: Contractor shall submit reports to Mason within thirty (30) days of the completion of any survey unless otherwise agreed upon.

Claims reports and reviews are a standard part of Marsh's Annual Service Cycle. Marsh will deliver claims reports, at a minimal, annually to Mason. For complex claims programs, Marsh will recommend more frequent meetings to monitor claims expenses to optimize cost control.

2.2 Case Study

b. Provide a brief case study highlighting how you provided the services requested and the outcome on client objectives.

Casualty Capabilities

Market conditions can dictate how we approach a client's renewal program any given year; but we look for opportunities within that same market place to obtain the best possible solutions for our clients. For example, an institution was faced with taking on a much higher retention then what they felt was a comfortable position. In response, Marsh was successful in negotiating a "buffer" layer with another insurer to follow the terms of the insurer above them. In doing so, not only did the insured maintain a long standing relationship with their current insurer, but also created a new relationship with another insurer without having to compromise any coverage.

Property Capabilities

With many Higher Education clients, retention / deductible levels and unique exposure dictate Insurer responses. In order to create the greatest appetite for our clients, Marsh has deployed a multitude of tactics to ensure the greatest amount of capacity is obtained from the marketplace. For example, our clients desire varying levels of deductibles and retentions based upon claim history, catastrophe exposure, cost and client's overall comfortability with assumption of risk. In response, Marsh administers varying levels of catastrophe (e.g. flood, convective storm) analytics, reviews lower levels "amount subject" asset valuation bands, as well as claims analysis to generate cost benefit scenarios for consideration. In turn, Marsh will overlay these results with current market conditions to measure the efficiency of various deductible levels.

In regards the unique exposures of higher education, Marsh has worked with our clients to bifurcate/segment exposures and place in separate towers and/or deductibles to ensure one risk drivers is not negatively impacting results. Examples include stock, fine arts, mobile equipment, auto physical damage, terrorism, athletic facilities, healthcare facilities and/or any specialized exposure which requires specific and coverage deductible levels.

Long-term options are also available, ranging from 1 – 5 years which many of our clients are now exploring and available within the property marketplace. Marsh finds that these options allow for the overall decrease in volatility and allows our clients greater focus on exposures and risk outside of property which are gardening greater attention and need.

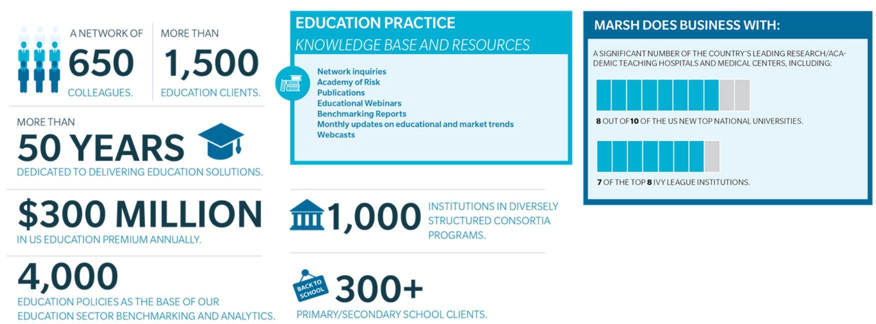
THE MMC ADVANTAGE FOR THE GEORGE MASON UNIVERSITY

Institutions today are functioning in an environment characterized by high stakeholder expectations, rapidly evolving regulatory structures, unexpected disruptions, and an extraordinary pace of change. Market dynamics, technology advancements, demands for more efficient operating models, and a greater focus on risk-based decision making are driving many organizations to expand the scope and depth of their enterprise risk management programs.

2.3 Service Team

c. Names, qualifications and experience of personnel to be assigned to Mason in addition to company size (number of personnel within the company – please designate number of full time employees and number of contract employees).

A Half-Century of Commitment to Higher Education



Knowing the risk issues of our clients' business is one of the key elements of delivering Marsh's signature services and solutions to our Higher Education clients. Our Global Education Practice has a rare and distinctive depth of knowledge not only of the insurance market but also of the specific risk issues our clients face. This longstanding industry practice encompasses our dedicated colleagues, exceptional transaction capabilities, and innovative solutions. You will see this reflected in the information below, as well as in our client reference examples. Our commitment to clients include thought leadership, presence on Boards and Committee work, for the University Risk Management and Insurance Association (URMIA), National Association of College and University Business Officers (NACUBO), the National Association of College and University Attorneys (NACUA), the Association of Governing Boards (AGB) and the Stetson University College of Law National Higher Education Conference. Marsh is proud to have serviced Higher Education clients for over 50 years, Government entities for over 50 years and Commercial clients since our beginning, over 140 years.

Education Practice

Serving over 1,500 Education Clients	Credentials	Depth of Expertise
• College & Universities (Public/Private)	• Marsh Education Practice's Annual Revenue: + $30 million	Marsh's thought leadership and depth of expertise is evidenced in our dedication to risk specialties and

- Top-Tier Research Institutions/Academic Medical Institutions
- Consortia Programs/Group Pooling
- For-Profit Institutions
- K-12 Public/School Districts/Boards
- K-12 Private/Early Learning Centers (Daycare Centers)

- 650+ Colleague Global Network
- Dedicated Education Industry Experts
- Real-Time Knowledge Management
- Education Placement Specialists—Global Market Access
- Global Communication & Resource Sharing (The Educator/Network Communications/Webinars)
- Real-Time, On-Demand Education Industry Benchmarking
- Global Solutions Tailored to the Education Industry
- Leader in Consortia Program Development: Experience and Expertise

Marsh solutions that directly touch on the education industry.

- Marsh Risk Consulting
- Marsh Global Analytics Captive Solutions Group
- Consortia Center of Excellence (COE) & Expertise
- Multinational Practice
- Claims Practice
- Dedicated Education Placement Specialists
- Marsh Valuation Services Practice
- Forensic Accounting and Claims Service (FACS)
- Private Equity Mergers & Acquisitions (PEMA) Terrorism Practice
- Environmental Practice
- Financial Products Risk Practice (FINPRO)
- Surety Practice
- Marsh Flood Service Center

Mason’s Core Service Team

Team Experience

<table>
<tr><th>Team Member/Location</th><th>Role & Responsibility</th><th>Experience</th></tr>
<tr><td>Eric Harley
Senior Vice President
Senior Client Executive
Richmond, VA</td><td>• Works with Mason to develop short- and long-term strategic goals.
• Anticipates mason’s needs based on business issues and introduces Marsh & McLennan Companies resources, as needed.
• Oversees quality of deliverables and enforces critical deadlines.
• Seeks feedback on Marsh’s execution of projects and renewals through consistent dialogue.
• Negotiates Marsh scope of services and compensation.
• Ensures Mason receives accurate and timely information and that expectations are exceeded.</td><td>• 15 years with Marsh.
• 30 years in insurance industry.
• BA in Education, Liberty University
• Frequent speaker on risk management topics for various Higher Education organizations throughout the Mid-Atlantic</td></tr>
<tr><td>Charmaine Davis
Senior Vice President
Senior Account Executive Manager
Washington, DC</td><td>• Support the CE to ensure that the Mason services are met, and identify and deliver resources to Mason, as new and emerging issues arise.
• Implement the renewal strategy meeting, including the risk identification discussion (Risk ID) with Mason.
• Analyze and recommend risk solutions.
• Develop the submissions (i.e. terms, limits, deductibles and service) for carrier underwriting and rating i.e. terms, conditions, negotiate terms, conditions and pricing.
• Interact with carriers during the renewal and throughout the service year.
• Respond to day-to-day related service items including contract review, general coverage questions.</td><td>• 19 years with Marsh.
• 21 years in insurance industry.
• BA in Business Administration, Strayer University.
• MBA, University of Maryland.
• Certified Insurance Counselor (CIC).
• Certified Risk Manager (CRM).
• Board Member, Gallaudet University, Academy of Risk.
• Past Chair, National African-American Insurance Association (NAAIA).
• Risk & Insurance Magazine’s Education Power Broker Award in 2018.</td></tr>
</table>

Team Member/Location	Role & Responsibility	Experience
Jenni Lee Crocker Managing Director Senior Relationship Officer/ Mid-Atlantic Corporate Leader Richmond, VA	• Will work with Mason to develop short- and long-term strategic goals and approach for the project and will collaborate with you and the Marsh team to build and execute the project risk strategy. • Anticipate Mason's needs based on business issues, and introduce Marsh & McLennan Companies resources, as needed. • Ensure Mason receives accurate and timely information and that expectations are exceeded.	• 5 years with Marsh. • 5 years in insurance industry. • BA in English, University of Richmond. • MA in Art History, George Washington University. • Board Member, St. Catherine's School PA. • Board Member, Visual Arts Center. • Board of Trustees, Richmond Ballet. • Top Forty Under Forty, 2004. • Virginia Executive Woman in Business, 2015.
Jean Demchak Managing Director Industry Practice Leader & Knowledge Manager Hartford, CT	• Participates in key meetings and strategic discussions. • Provides industry leadership, support, and analytics to the Marsh team. • Brings extensive contact base and visibility in industry-relevant insurance markets. • Assists with program strategy and keeps team apprised of industry risk issues and solutions. • Communicates emerging trends and solutions.	• 33 years with Marsh. • 38 years in insurance industry. • 38 years serving higher education clients. • 38 years of experience with medical professional liability coverage. • BA, University of Tennessee. • MBA, University of Connecticut.
Wanda Preddy Assistant Vice President Claims Advocate Washington, DC	• Assists with the preparation, negotiation, and resolution of claims. • Assists with the development of claim handling instructions and protocols. • Coordinates and leads claim reviews as needed. • Serves as Mason's advocate in all claim-related negotiations with insurance carriers.	• 21 years with Marsh. • 23 years in insurance industry. • Associate in Claims (AIC). • Property & Casualty Licensed (VA).

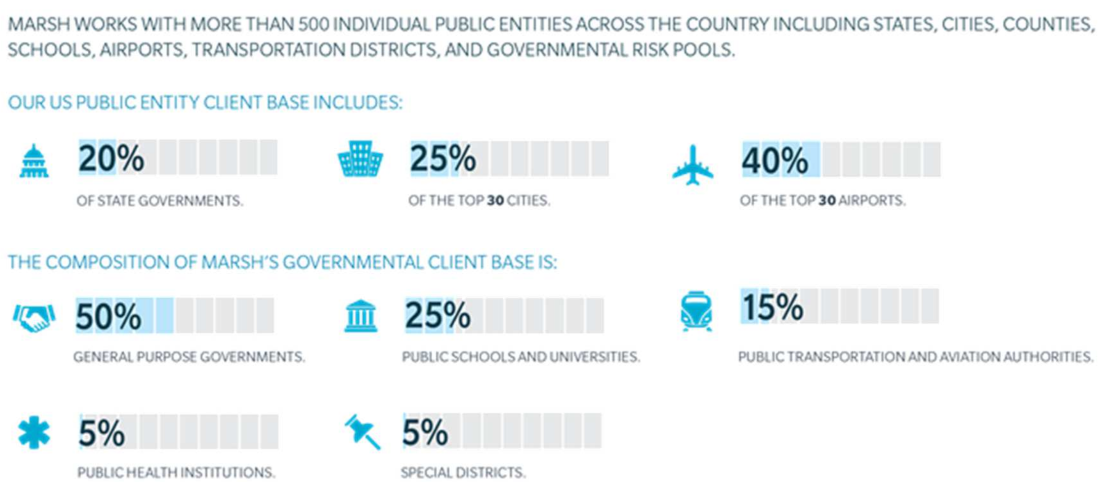
Team Member/Location	Role & Responsibility	Experience
Kelly Thoerig Managing Director FINPRO Claims Advocate Richmond, VA	• Assists with the preparation, negotiation, and resolution of FINPRO claims. • Assists with the development of claim handling instructions and protocols. • Coordinates and leads claim reviews as needed. • Serves as Client's advocate in all FINPRO claim-related negotiations with insurers.	• 6 years with Marsh. • 13 years in insurance industry. • 7 years as an attorney in the Directors & Officers Insurance Practice Group of Troutman Sanders law firm. • BA in English, University of Virginia. • JD, University of Richmond School of Law. • Admitted to practice law in Virginia and Washington, DC. • Former practicing litigator and carrier-side coverage counsel. • Relevant Experience: Serves as FINPRO Claims Advocate for three other hospitality/gaming clients. • Relevant Experience: Facilitated claims issues for two large defense contractors including Lockheed Martin and General Dynamics.
Richard Vohden Managing Director Risk Consultant Hartford, CT	• Provides consultation in areas such as workers compensation GAP analysis for cost control, staff education and training, transportation safety, cost accounting, campus safety, and regulatory compliance. • Works with Mason to identify and evaluate education loss exposures. • Provides safety management consulting, safety training, safety assessments, and safety program development assistance services for clients.	• 33 years with Marsh. • 43 years in insurance industry. • 43 years working with colleges, universities, and other educators. • BS in Industrial Engineering, The College of New Jersey. • MS in Management, Boston University. • Certified Safety Professional (CSP), #7299. • Chartered Property Casualty Underwriter (CPCU). • Associate in Loss Control Management (ALCM). • Member, URMIA Government and Regulations Committee.

Marsh's Public Entity Practice

Marsh is also committed to the public sector. This practice is structured to share information and expertise for your benefit. Our full-time global public entity team monitors the current trends within the industry from all perspectives – legal, finance, regulatory and insurance – to offer you the best possible guidance for your risk management strategy and to provide customized, cost effective solutions designed to mitigate risk and contain loss.

Marsh works with more than 500 individual public entities across the country including states, cities, counties, schools, airports, transportation districts and governmental risk pools. Through our work with groups such as governmental risk pools and education consortia, we assist several thousand governmental entities with their collective risk management needs.

More often than not, we find that our Public Entity and Higher Education clients have exposures and risk that span over several industries such as real estate, sports and entertainment, utility, hospitality, healthcare and infrastructure which exist today and while in construction. Marsh is in a unique position where we can benchmark unique and specific exposures and/or risk within your portfolio and pull expertise, resources and leading position in each of these industries to ensure your program addresses such emerging trends, risk and needs.

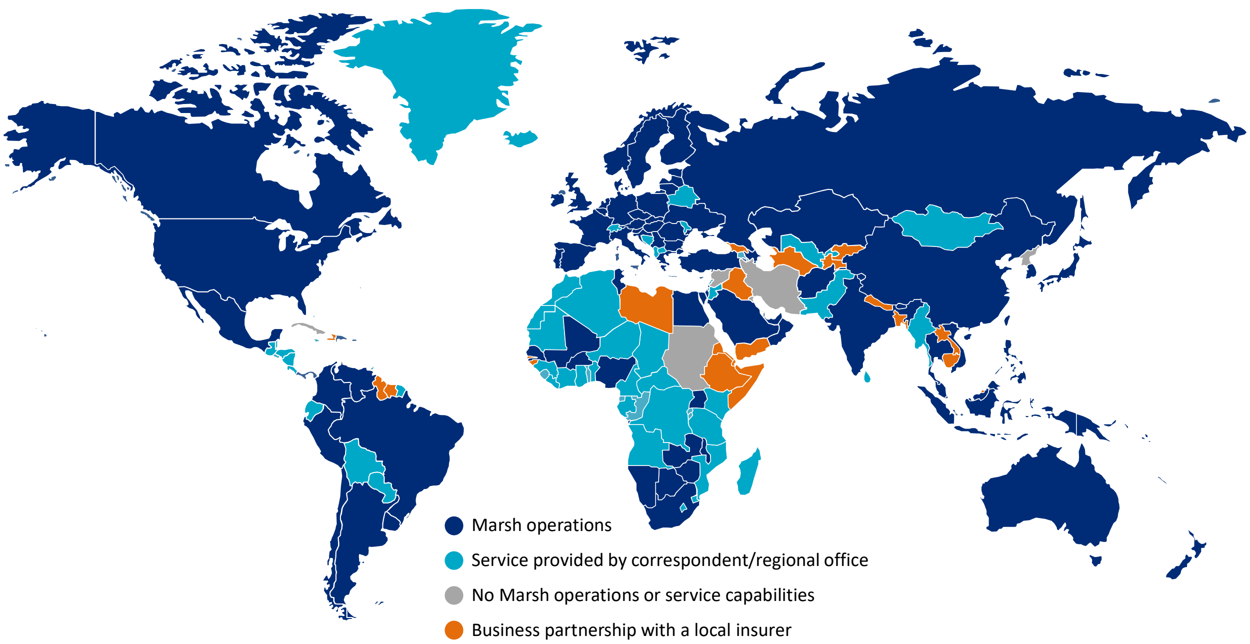


Marsh USA Inc. ("Marsh") is a national insurance agent and broker and does business in all of the 50 states in the U.S. From time to time, Marsh and its subsidiaries are subject to various claims, lawsuits and proceedings including those concerning alleged errors and omissions in connection with the placement of insurance and in rendering consulting services. Marsh believes its reputation for providing quality services and its historic performance over the long-term speak for itself. Marsh is committed to serving its clients to the highest professional and ethical standards as demonstrated by its long history as the industry's leader.

2.4 Global Broking Services

d. Describe global existence.

With 400 offices in 130 countries, Marsh operates the largest worldwide network of owned/controlled offices. Our global network of servicing offices, with its years of experience and breadth of expertise, drives program cost-efficiencies and serves as a critical asset in managing global risks. And the fact that our network is principally owned ensures operational alignment for our clients' benefit. The map shows our global footprint.



3. Mason Service Plan and Timeline

3.1 Service Plan

a. Methodology for performing the services.

Refer to Section 1.A.a.

3.2 Timeline

b. Timeline.

The challenging marketplace is impacting our marketing calendars for our insureds. We will schedule the renewal strategy meeting earlier than previous years to better position Mason for the best outcome. Refer to Appendix F for a complete schedule of transition and service.

4. Worldwide Service and Support

4.1 Global Services

a. Describe your worldwide services and support.

Refer to Section 2.4 Global Services.

5. References

5.1 References

a. Provide a list of all clients that demonstrate the Offer's qualifications, from other comparable higher education institutions our company is/has provided services with and that are similar in size and scope to that which has been described herein. Include a contact name, contact title, phone number, and email address for each reference and indicate the length of service.

Client References

We have identified these education sector references who have similar profiles as Mason.

The Catholic University of America	University of Richmond	Howard University
Louis P. Alar Director, Environmental Health & Safety Washington, DC 202 319 5789 alar@cua.edu	**Keesha Trim** Director, Risk Management & Insurance University of Richmond, VA 23173 804 287 6477 ktrim@richmond.edu	**Brenda Douglas** Risk Manager Washington, DC 20010 202 865 3143 Brenda.douglas@howard.edu
Exposures Similar to Mason		
• Student count: 3,194 • Revenue: $189M • Concussion and SML risks • International campus	• Student count: 4,350 • Revenue: $313M • Concussion and SML risks • Public entity	• Student count: 6,090 • Revenue: $789M • Federally funded • Division I Sports

6. Annual Report

6.1 Annual Report

Provide a copy of the Offer's latest annual report or comparable documents.

Refer to Appendix B.

7. Cost Proposal

7.1 Cost Proposal

Identify all cost associated with providing the products and services in Offeror's proposal indicating one-time and on-going costs. Costs should include all overhead, travel and eVA fees.

From our perspective, there is little difference in how we are remunerated -- fee, commission or a combination of both. The important factor is that you will have full knowledge of our compensation and the expected services and resources. This way, Mason can be assured they are purchasing services that are fully understood and appropriate to meet business objectives.

Based on what we understand of the University's service requirements to be today (and assuming your preference is to retain us on a fee and rate basis), we propose the following compensation arrangement for the lines of coverage included in this RFP:

A. Insurance Brokerage Commission Range 5-15% depending on the coverage line and industry standards – the commission rate percentage does not include eVA transaction fee. This commission rate percentage includes all the services listed in the Marsh core services.

B. Risk Management Consulting Services – the rates include overhead, travel, expenses and eVA transaction fees:

i. **Associate Consultant/Insurance Specialist $175.00/hour**

ii. **Consultant/Account Executive $250.00/hour**

iii. **Senior Consultant/Senior Account Executive $295.00/hour**

C. All Other Services: Price to be negotiated on a per project basis.

Marketing, claims advocacy and limited loss control services are included in our fee.

In summary, Mason should only pay for those services needed and which demonstrate value. As your risk management partner, we will constantly seek opportunities to control costs and be flexible in how we are to be paid for services rendered.

Broker Services

All core brokering, program service and claims advocacy services would be included in our basic service offering. This includes analysis and advice regarding your program structure, your renewal and placement services as well as day-to-day service requirements, including claims advocacy. The detail of our core service offering is included in the chart below.

Renewal and Placement	Day to Day Service	Claims Management	Technology	Risk Advisory
Core Services				
D. Risk analysis E. Program design F. Insurance renewal questionnaire G. Data gathering H. Data analysis I. Underwriting submission development J. Underwriter negotiations K. Placement L. Policy issuance and review M. Renewal report N. Renewal management O. Premium processing	P. Comprehensive program documentation Q. Market trending and benchmarking R. Providing regular updates on marketplace S. Ad hoc advice T. Annual dashboard U. Business unit inquiries from overseas V. Client education and publications	W. Claims advocacy X. Claims protocols Y. Claims monitoring Z. Loss reporting AA. Loss data analysis	BB. Marsh Portal CC. MarshConnect DD. Marsh Market Information	EE. Loss forecasting/ trending FF. Risk identification GG. Loss control and risk mitigation strategies HH. Updates on new regulations and legislation that may have an impact on The University II. Risk optimization consulting JJ. Advice in connection with mergers, acquisitions or disposal
		Fee for Service (Outside Proposed Fee)		
		KK. FACS claim accounting and preparation services LL. FACS dispute advisory services MM. Mass tort/ "InSolutions" NN. Actuarial OO. Captive review/ feasibility study PP. Captive Management	QQ. Marsh Insurance Management System (MIMS) RR. Third party certificate monitoring SS. International local placements TT. Risk Consulting engagements	UU. Physical loss control and risk engineering (set hours) VV. Crisis management WW. Enterprise risk XX. Risk focus YY. Business continuity planning ZZ. Strategic risk assessment AAA. Supply chain management BBB. FACS business income pre-loss consulting

Compensation for Additional Services

Any items listed as “Fee for Service” in the chart above would be presented to the University with a Statement of Work defining the agreed upon scope and expected outcomes. The fees for these services vary depending on the scope of the project, experience level of the colleague(s) assigned to the project and travel expenses, if any. Any service or project work outside the normal scope of our engagement would be developed to meet a specific need, timeline, and/or budget that the University provides. We would tailor the scope of work to meet your objectives and propose compensation based on that scope of work and present it to you for review and discussion.

For example, Marsh Insurance Management System (MIMS) is currently outside our proposed fee arrangement. In order to determine any additional price for MIMS services, the team will need to better understand how The University would like to utilize MIMS within your current physician management platform, and we can tailor our service offering accordingly.

Transparency

Marsh is the industry leader in compensation disclosure practices. We embrace transparency fully, and do so with respect to the compensation that we earn from insurers and all brokerage compensation, prior to a program being bound. We believe that this is essential to establishing a relationship based on trust and allows our clients to make fully informed decisions when purchasing insurance.

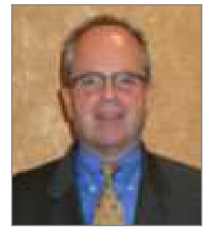
We will fully disclose to our clients the roles that we perform in the insurance transaction, our interests in and compensation arrangements with insurers, the specifics of all quotes and premium indications we receive from insurers on our clients' behalf, and our compensation from insurers and from other third parties for the placements we make on our clients' behalf.

APPENDIX A

Team Members Roles and Responsibilities

ERIC D. HARLEY

Senior Vice President



CURRENT RESPONSIBILITIES

Eric Harley is currently a Client Manager in the Marsh Richmond office. His current clients include manufacturing, hospitality, public entity, and higher education. Eric places property, casualty, and international coverages for a diverse group of clients, and provides risk management services and consulting.

EXPERIENCE

Eric joined Marsh Richmond's office in July of 2004. Prior to joining our firm, he spent 15 years as an underwriter in the Virginia territory primarily with Chubb and St. Paul Insurance companies specializing in property, casualty and international coverages. Eric was a middle school history teacher for eight years prior to entering the insurance industry.

EDUCATION

- BA in Education, Liberty University

AFFILIATIONS

- Member, University Risk Management and Insurance Association (URMIA)
- Member, Virginia Association of Independent Schools (VAIS)

WANDA L. PREDDY
Assistant Vice President

CURRENT RESPONSIBILITIES

Wanda Preddy is a Claims Advisor in the Marsh Claims Practice for our Richmond, Virginia office. She works directly with a number of mid-sized clients and handles the daily oversight of workers' compensation claims for several Global Risk Management and National Accounts. Wanda has extensive knowledge of the workers' compensation programs in most states, the ability to navigate multiple carrier and third party administrator systems, and the people skills to advocate the client's position while remaining on good terms with the claims examiners.

EXPERIENCE

Wanda began her insurance career in 1978 with Life of Virginia. She joined our firm in the Casualty Claims Department in 1982. She has partnered with consultants on large, complex projects. In 2004, she focused on developing her workers' compensation skills by taking on several large claims management outsource projects. She has become a multi-state expert in workers compensation law and a valuable resource for clients.

AFFILIATIONS

- Associate in Claims (AIC)
- Licensed Property and Casualty Broker in the State of Virginia

CHARMAINE R. DAVIS
Senior Vice President

CURRENT RESPONSIBILITIES

Charmaine Davis is a client manager within the National Brokerage Segment in Washington, DC. Her responsibilities include understanding risk exposure, negotiating coverage terms and conditions, developing pricing strategy, reviewing contract agreements and providing day-to-day administrative services for insureds. Charmaine specializes in commercial risks with domestic and international USAID operations, education, and public entity clients as well as non-profits, civil organization and trade associations.

EXPERIENCE

Charmaine joined Marsh USA's National Brokerage Team in December 2001 as an administrative broker. She was promoted to client advisor in December 2003 and to team leader of the client representatives in 2005, overseeing seven professional staff members. Before joining Marsh, Charmaine worked as an account manager at a local insurance agency, focusing on a variety of insurance risks including public entity, non-profit and construction.

Prior to her insurance career, Charmaine worked as a professional non-profit consultant coordinating capital campaigns for national organizations, conducting feasibility studies for expansion programs, assessing operations, as well as teaching on the subject.

EDUCATION

- BBA, University of Maryland

AFFILIATIONS

- Property and Casualty licensed
- Certified Insurance Counselor (CIC)
- Past Chair, National African-American Insurance Association
- Member, National Association of Insurance Women
- Member, Association of African-American Financial Advisors
- Risk & Insurance Magazine's Education Power Broker Award in 2018

D. JEAN DEMCHAK

Managing Director

CURRENT RESPONSIBILITIES

Jean Demchak is the global leader of Marsh's Education and Public Entity practices. She also manages the integration of Marsh & McLennan companies into these sectors.

Her responsibilities include managing and coordinating the firm's resources, assisting the various local offices with emerging issues, designing and building products for not-for-profits, serving as liaison with the marketplace, developing and customizing specialized services to meet client needs. Jean serves as a resource to key professional organizations within the education community, as well as assists in identifying and responding to the emerging issues facing colleges and universities in the 21st Century.

EXPERIENCE

As a professional in the brokerage community for over 34 years, Jean dedicated the last 29 years of her career to specialize in the education industry, especially focused on the development of risk retention groups and pooling programs, consortia programs, innovative product design and customization of coverage documents.

EDUCATION

- Associates, Tomlinson College
- Bachelors of Science, University of Tennessee Chattanooga
- Masters of Business Administration, University of Connecticut

AFFILIATIONS

- United Educators Broker Advisory Committee
- University Risk Management and Insurance Association (URMIA):
  - Board of Directors: 2009-2012
  - Chair, URMIA Affiliates Committee; 2006-2009
  - URMIA Task Force "International Fellow Program"
  - URMIA Total Cost of Risk Task Force, two whitepapers, webinar and seminars
  - Chair, URMIA Global Task Force, 2009-2011
  - Co-Chair, URMIA International Committee 2011-present
- Member, National Association of College & University Business Officers (NACUBO):
  - Member of Editorial Advisory Board of the International Resource Center (IRC) for 2,500 members of NACUBO

- “Risk & Insurance” Education Power Broker from 2006-2010; “Responsibility Leader” 2010 designation for the higher education industry
- Faculty at the Stetson College of Law Higher Education Conference 2007-present, including a report on “Large Losses Driving Emerging Litigation in Higher Education”, “Changing Business Model – A Higher Education Reformation”, “Employment Litigation“ “Board Governance in Higher Education” and “Internationalization of Education”; Board Advisor to Stetson HE Law Center, Honorary co-chair of 2018 HE Law Conference.
- State Risk & Insurance Management Association (STRIMA) as speaker and board advisor
- British Universities Finance Directors Group (BUFDG); speaker at Annual Conference on “Cyber Liability”, “Emerging Trends in Higher Education: Global-UK-US Perspectives”
- Speaker at the National Conference for Higher Education Insurance Managers in the U.K. on “Internationalization of Higher Education”
- Public Risk Management and Insurance Association (PRIMA) as speaker and board advisor
- Public Agency Risk Management Agency (PARMA) speaker on “Total Cost of Risk: A Model for Public Sector”

RICHARD A. VOHDEN
Senior Vice President

CURRENT RESPONSIBILITIES

Rick Vohden is a senior vice president and managing risk consultant residing in the Morristown, New Jersey office. He consults for many of Marsh's educational institutions including public and private early childhood learning, primary and secondary education, and colleges and universities. He also consults with our firm's arts and entertainment clients. Rick's specialties include: liability risk management and campus safety including residence hall safety and security; special events; athletic liability; employment practices, vehicle operations; risk profiling; new construction and remodeling, builders risk and owner and contractor controlled wrap-up programs, loss cost containment practices; statistical and performance measurement. Through his client service, he has developed more than 35 Best Practices for managing risk on campus, ranging from contractor/vendor services to technology transfers and licensing to youth camps. He is the Education and Public Entity Practice Leader for Marsh Risk Consulting.

EXPERIENCE

Rick has more than 30 years of experience in the insurance and risk management services field, all in the capacity of risk management consulting. He has worked in brokerage, consulting, and insurance company environments.

Rick is the lead consultant for Pinnacle Consortium, a risk retention reciprocal for 17 national research universities in the northeast. He has assisted the group to publish the "Best Practices" for Risk Control in Higher Education. He also supports the risk consulting activities for M.U.S.I.C. (a consortium of Michigan state universities), and I.U.C. (a consortium of Ohio state universities). Rick has also consulted for other insurance captives and associations, including Preferred Amusement Risk, a Cayman Islands based circus, amusement park, and carnival insurance association; Atlantic City casinos; theme parks; and the Delaware, New Jersey, North Carolina, and Texas State Fairs. Rick has presented at many national and regional professional conferences including URMIA, NACUBO, APPA, and CSHEMA. Rick has worked as a risk consultant to public and private collegiate educators for more than 20 years.

EDUCATION

- BS in industrial engineering, The College of New Jersey
- MS in management, Boston University

AFFILIATIONS

- Certified Safety Professional (CSP), #7299
- Chartered Property Casualty Underwriter (CPCU)
- Associate in Loss Control Management (ALCM)
- Member, URMIA Government and Regulations Committee

KELLY THOERIG

Managing Director

CURRENT RESPONSIBILITIES

As the Marsh US Employment Practices Liability Coverage Leader, Kelly Thoerig is primarily responsible for manuscripting EPL policies, leading policy and insurer new product reviews, and drafting endorsements. In addition, Kelly is a claims advocate for Marsh's FINPRO Practice, our financial and professional insurance group, specializing in complex coverage and claims issues concerning employment practices liability, directors and officers, professional liability, cyber, crime, and fiduciary liability insurance. In both roles, she works closely with advisory professionals to deliver the best possible coverage afforded by the insurance markets, produces timely white papers and other content for internal and external distribution, and frequently presents at industry seminars on various insurance coverage topics. Kelly is located in our Richmond, Virginia office.

EXPERIENCE

Prior to joining Marsh in 2012, Kelly was an associate in the Directors & Officers Insurance Practice Group of Troutman Sanders LLP, where she counseled and litigated on behalf of insurer clients in coverage matters nationwide. Kelly represented insurers in complex disputes arising under directors and officers, employment practices, and professional liability insurance. Kelly was also a member of the firm's White Collar & Government Investigations and Antitrust Practice Groups, where she defended antitrust and other commercial litigation matters, as well as criminal investigations and inquiries by securities regulators.

During her seven years as a litigator, Kelly tried multiple cases to verdict and successfully argued motions in a variety of Virginia state and federal court actions.

EDUCATION

- BA in English, University of Virginia
- JD (cum laude), University of Richmond School of Law

AFFILIATIONS

- Active member of the Virginia and District of Columbia Bars, and admitted to practice before the United States District Court for the Eastern District of Virginia
- Manuscripts Editor (former), *Richmond Journal of Law and Technology*

APPENDIX B

Annual Report

APPENDIX C

Request for Proposals GMU-1603-20 Page 1

APPENDIX D

Vendor Data Sheet

APPENDIX E

Sample Client Service Agreement

APPENDIX F

Timeline

MARSH & McLENNAN COMPANIES

2018
Enabling bold futures

MARSH & McLENNAN COMPANIES
ANNUAL REPORT

We are the world's leading professional services firm in the areas of risk, strategy and people.

We are four global businesses united by a common purpose and a uniquely collaborative culture.

We are over 65,000 colleagues committed to each other, to our clients and to the greater good.

We help clients change what's possible, enabling enterprise around the world.

WE ARE MARSH & McLENNAN.

OUR BUSINESSES:

Risk & Insurance Services

MARSH
Insurance broking and risk management solutions

GUY CARPENTER
Reinsurance and capital strategies

Consulting

MERCER
Health, wealth and career consulting and solutions

OLIVER WYMAN
Strategy, economic and brand consulting

This annual report contains "forward-looking statements," as defined in the Private Securities Litigation Reform Act of 1995. Please see "Information Concerning Forward-Looking Statements" on page (i) in the Form 10-K included in this annual report.

> "Our firm is built for changing times. Helping our clients realize the opportunities these times present requires ongoing investment in our own capabilities—and an ability to drive growth and value in any market conditions or operating environment."

DAN GLASER
PRESIDENT AND CHIEF EXECUTIVE OFFICER
MARSH & McLENNAN COMPANIES

To our shareholders,

Marsh & McLennan is a trusted advisor to clients around the world, helping them address the greatest challenges and opportunities of our time. We are in the business of change.

John F. Kennedy once said, "Change is the law of life. And those who look only to the past or the present are certain to miss the future." At Marsh & McLennan, we do more than help our clients find the future—we enable them to make bold new futures happen.

Since 1871, we've helped clients manage through most of the great industrial transformations in modern history: railroads, electrification, automobiles and aviation. And now, the digital age, where the pace of change in every aspect of business and life is outpacing the ability of many to keep up.

The work we do matters, and we thrive on the opportunity to help our clients—and society—change what's possible. We're always searching for a smarter way, taking what we already do *well* and making it *better*. Our more than 65,000 colleagues around the world share a common purpose: to make a meaningful difference for our clients, our colleagues and the communities in which we live and work.

Risk, strategy and people are the three things every organization has to get right. And, together, we do all of it. We offer expert advice, analysis and transactional capabilities to clients in more than 130 countries. Even when the issues of the day inevitably change, our expertise remains timely and relevant.

There has never been a more exciting time to lead a business into the future, or a more extraordinary group of people to call my colleagues.

I'm pleased to report on the progress our firm made in 2018, and to highlight some of the change we're creating to make sure Marsh & McLennan's best days are ahead of us.

CREATING BREAKTHROUGH IMPACT, ENABLING INNOVATION

In a world growing increasingly accustomed to the exponential rather than the incremental, management teams confront existential choices every day: make an impact or be disrupted. Our job is to help them achieve their most ambitious goals and make their futures more secure.

Our businesses are each leaders in their respective fields, but fields don't define the advantage we deliver to clients. Marsh & McLennan is a vast network of expertise. Every day, we gather the right people and the right solutions around each client's challenge—from wherever they are in the company. This is the MMC Advantage, bringing the full value of *all* of our businesses to bear: Marsh, Guy Carpenter, Mercer and Oliver Wyman. It reflects our core belief: that our businesses and the company as a whole must deliver insights and solutions to shape the industries we serve.

Achieving lasting impact requires us to see the big picture and work across sectors, industries and economies. Marsh & McLennan Insights was created to draw on resources across our company and a network of independent researchers. We collaborate with governments, non-governmental organizations and academic institutions to explore new solutions that change what's possible. Working together, they consolidate the best thinking on what we see as critical challenges and major opportunities: building resilience to climate change, realizing the potential of transformative technologies, reimagining the workforce for the future, developing infrastructure for Earth's eight billion citizens and enhancing healthy societies everywhere.

These insights and solutions—the MMC Advantage—are organized around industries and delivered by local leaders across the firm, including our Country Corporate Officers, in more than 130 geographies.

> "Every day, we gather the right people and the right solutions around each client's challenge — from wherever they are in the company."

Our specialized businesses increasingly serve as incubators for emerging technologies with transformative potential. Some examples:

- Marsh's launch of Bluestream, a cloud-based digital broking platform that gives our affinity clients a streamlined way to deliver insurance products and services to their customers, contractors and employees. This platform has great potential for broader use in matching risk and capital in the small commercial and consumer segment.
- Guy Carpenter's launch of GC Genesis, an advisory business that helps clients find the right insurtech opportunities to enhance their operations and technology strategies.
- Mercer's strategic alliance with Morningstar, which gives its clients digital subscription access to Mercer's proprietary investment manager research, creating opportunities for the firm among a broad user base of financial advisors.
- Oliver Wyman's ongoing buildout of its digital and technology capabilities to support our clients' most ambitious transformations.

The volume of data that our global business ecosystem generates is staggering. By harnessing the power of this accumulated knowledge in real time, we're putting new tools in our clients' hands and creating new sources of revenue for the company.

ASSESSING OUR OPERATING ENVIRONMENT

The global economy remains uncertain and fragile. The International Monetary Fund recently lowered its global growth forecast for 2019 and 2020, citing the negative effects of tariff increases enacted in 2018 by the US and China as a contributing factor. And global risks continue to intensify.

Scientific and technical advances have mitigated a host of conventional risks. However, growing systemic risks — such as climate change mitigation and adaptation — urgently require multilateral action and shared solutions. Emerging technologies, while offering vast potential for life as we know it, are creating new risks and changing the very nature of risk. Interconnected technology platforms are increasingly vulnerable: cyberattacks are the number one risk as seen by business leaders in advanced economies.

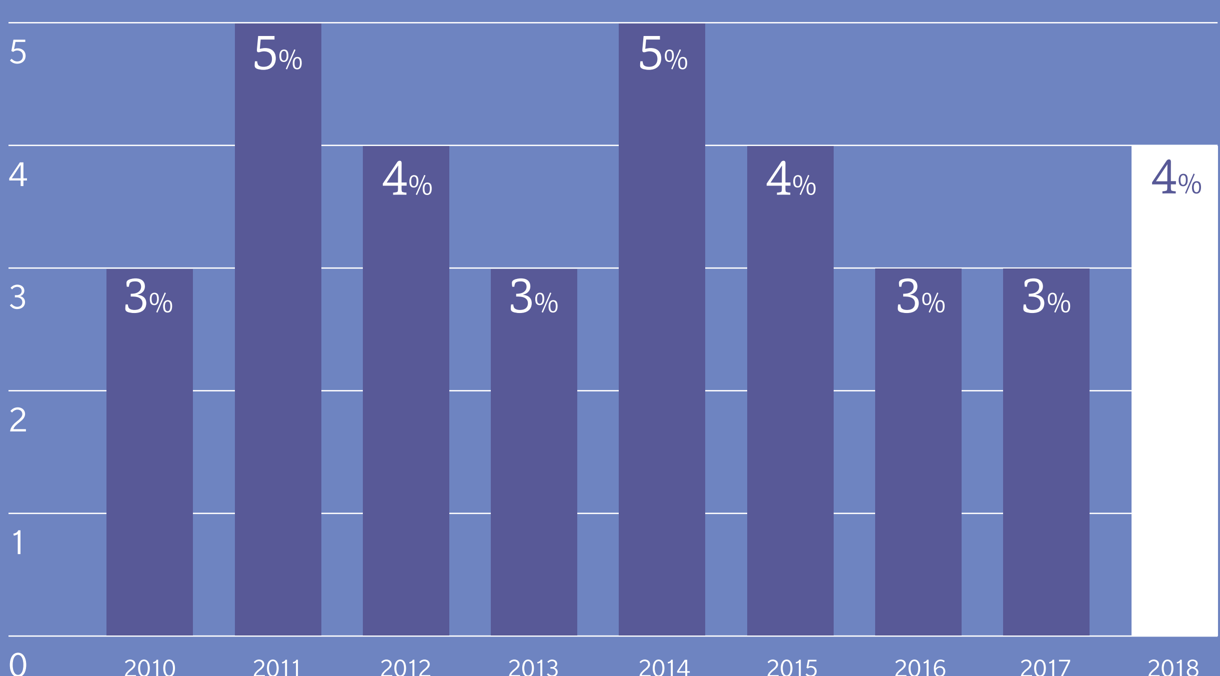
This year's *Global Risks Report*, produced by the World Economic Forum in partnership with Marsh & McLennan and others, ranks the top global risks by their potential impact and likelihood. We encourage leaders to read it.

Marsh & McLennan is at home in this dynamic landscape. Marsh and Guy Carpenter both evaluate risk and advise on how businesses can address complex challenges such as geopolitical volatility, cybersecurity and natural disasters whose costs governments increasingly bear.

> "Since 2009, our adjusted EPS has grown at a compound annual growth rate of 13%; our firm stands apart when it comes to consistency of results."

9 YEARS

of consecutive underlying revenue growth in the 3-5 percent range



19.7%
CONSOLIDATED ADJUSTED MARGIN
—an increase of 1,120 basis points since 2008

Highest adjusted margin in Risk & Insurance Services in
15 YEARS

Risk & Insurance Services and Consulting adjusted operating income each at
RECORD HIGH

Reduced year-end shares outstanding for
5TH CONSECUTIVE YEAR

Annual revenue of
$15 BILLION

Closed transactions totaling more than
$7 BILLION
across 160+ acquisitions and investments since 2009

10%
DIVIDEND GROWTH
delivering on our annual commitment to increase dividends per share by double digits

Clients in more than
130 COUNTRIES

OVER 65,000
colleagues around the world making a difference for clients in critical moments

The heart of Mercer's business is about the future of work, healthcare affordability and access, and helping people achieve financial security for life. Oliver Wyman works with industry leaders and government institutions to help them transform for the future and help ensure that companies, industries and sectors are prepared for the world ahead.

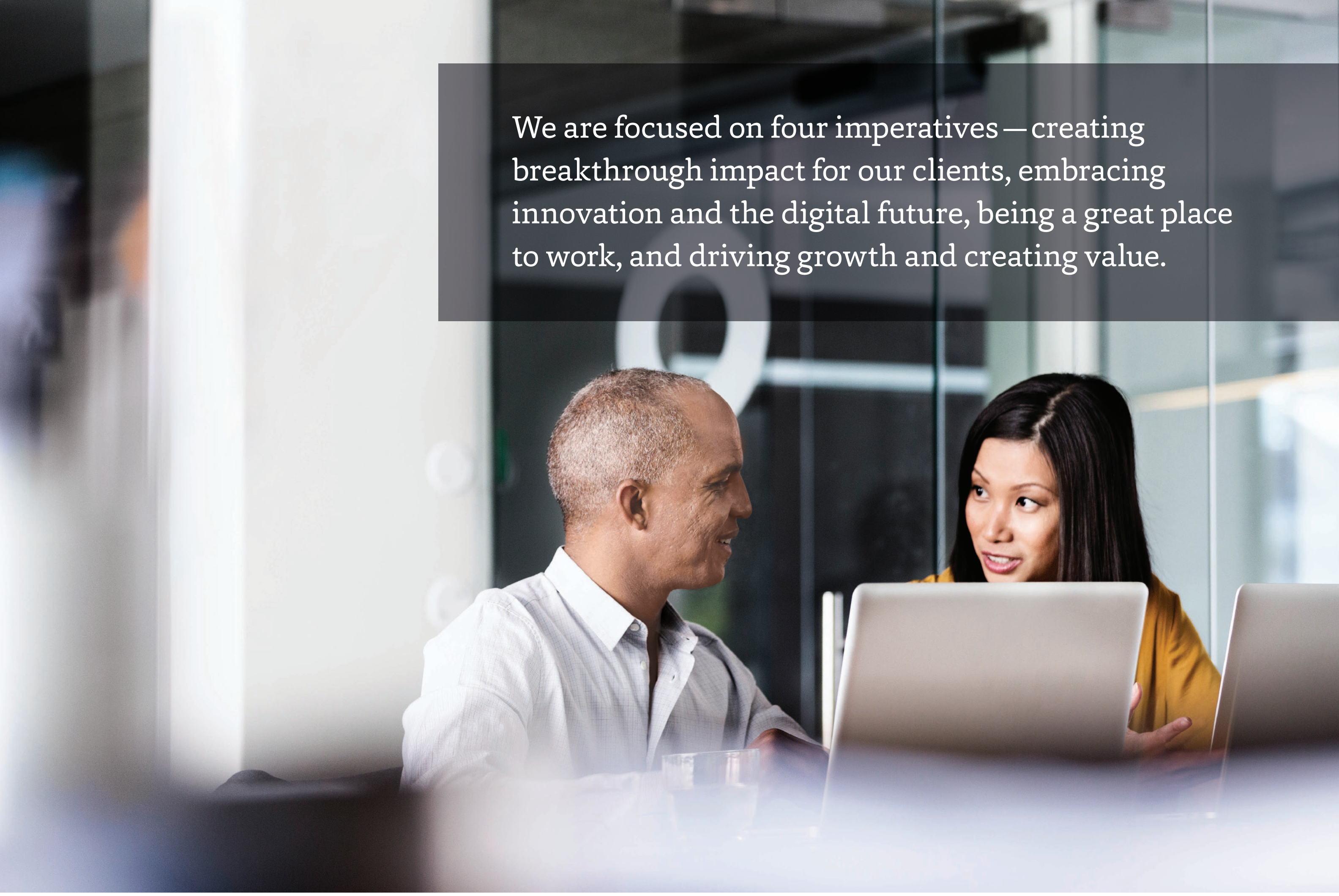
Our firm is built for changing times. Helping our clients realize the opportunities these times present requires ongoing investment in our own capabilities—and an ability to drive growth and value in any market conditions or operating environment.

> "Our ambition is to make Marsh & McLennan a place where extraordinary people can do the best work of their careers—and lead their best lives."

DELIVERING STRONG FINANCIAL PERFORMANCE

Marsh & McLennan closed 2018 with an outstanding fourth quarter that contributed to strong results for the year, even as we continue to shape our organization for the long term. Our agreement to acquire Jardine Lloyd Thompson Group (JLT) and 23 other transactions are part of positioning us for the future.

We consistently balance delivering today with investing for tomorrow, and 2018 was a great example of strong overall execution. We generated $15 billion in consolidated revenue for the year, an increase of 7% compared with 2017, or 4% on an underlying basis.



Adjusted operating income[1] rose 8% and consolidated adjusted margin increased 30 basis points, our 11th consecutive year of margin improvement. Our adjusted earnings per share grew 11% to $4.35, compared with $3.92 in 2017—another year of double-digit growth that came on top of 15% growth in 2017. Since 2009, our adjusted EPS has grown at a compound annual growth rate of 13%; our firm stands apart when it comes to consistency of results.

Our risk and insurance businesses produced consolidated underlying growth of 5% in 2018, the best full-year growth we've seen since 2012. Marsh delivered 4% underlying growth for the year, its best result since 2014; Guy Carpenter had a terrific year with 7% underlying growth, its strongest result since 2009.

Our consulting businesses delivered 3% consolidated underlying growth in 2018. Mercer achieved 3% underlying growth, an improvement on 2017. Oliver Wyman grew 5% for the year, overcoming headwinds from declining bank regulatory work.

For the fifth year in a row, we fulfilled our two capital commitments to shareholders:

1) Increase our dividends per share by double digits; and

2) Reduce our total shares outstanding.

In 2018, we returned nearly $1.5 billion to our shareholders in the form of dividends and share repurchases. We reduced our share count by 4.9 million shares, or 1%, and increased our dividends per share by 10%.

1 For a reconciliation of non-GAAP results to GAAP results, as related to all non-GAAP references presented in this letter, please refer to the Company's Form 8-K, dated January 31, 2019, available on the Company's website at mmc.com.

Over the long term, we expect to grow EPS at a higher rate than the S&P 500 with lower capital requirements — and lower volatility.

DRIVING GROWTH, CREATING VALUE

Marsh & McLennan has an exceptional track record for sustained value creation, and timely acquisitions played a key role in 2018.

Leading this list is our agreement to acquire JLT. The combination with JLT is one of strength. On its own, JLT has generated industry-leading revenue growth, averaging organic growth of 5% from 2012 to 2017. We expect this investment to put us on a new trajectory with a significant addition in talent and capabilities, stronger geographic positioning and greater capacity for investments in digital, data and analytics.

We invested $1.1 billion across 23 other high-quality transactions. Highlights include:

Mercer closed its Pavilion and Summit acquisitions in the fourth quarter. These businesses add to our capabilities in investment consulting and open new avenues for our delegated investment management services.

Marsh acquired Houston, Texas-based Wortham Insurance, the 33rd largest agency in the US with more than $130 million of revenue and 530 colleagues. This move further strengthens our position as the leading insurance broker in the US Southwest, a deep and vital marketplace.

We also continue to invest in high-growth businesses and markets. Marsh & McLennan Agency (MMA) now represents 19% of Marsh's revenue — and is growing faster than the overall business. MMA added seven new firms in 2018 to further bolster its leadership position in the middle market.

We see significant growth potential in the small commercial market, where we have focused on digital initiatives. We're in an ideal position to help simplify the client experience and add value at every turn in this large and fragmented market. Some innovations to watch:

- Torrent, a suite of cloud-based technology solutions for flood insurance.
- Dovetail, an online insurance marketplace that enables agencies to get the best policies for their clients.
- ICAT, which leverages sophisticated tools to underwrite catastrophe insurance risk.
- Both Dovetail and ICAT are part of our managing general underwriter unit, Victor, which uses best-in-class technology to distribute specialty insurance through a vast network of agents and brokers.

Key trends present opportunities to create long-term growth and value. In many markets, the actual losses from cyber-attacks, floods and other natural perils far exceed insurance coverage. Filling this gap is a growth opportunity for us that also serves the greater good.

Similarly, private and public retirement benefits in much of the world are falling short of what today's longer-lived people will need. Mercer is a leader in this space, where actuarial, investment and fintech specialties meet.

We expect health-related business broadly across Marsh and Mercer to benefit from faster macroeconomic growth and demand for advice in the face of healthcare complexities.

THE POWER OF EXTRAORDINARY PEOPLE

The strength of our company is in every one of our colleagues, who thrive on complex challenges and the desire to make a difference for their clients, for each other and the world.

Marsh & McLennan is a "brains business." Our colleagues *are* the company, and we put them first. We invest in their personal as well as professional growth. A recent example is a new on-demand education series we created to help colleagues—no matter their role—become more fluent in transformative technologies, to better understand their potential not only for our clients and our company but also for their own careers.

Our ambition is to make Marsh & McLennan a place where extraordinary people can do the best work of their careers—and lead their best lives. We welcome the passion our colleagues bring to their work and we encourage them to be present where their families and communities need them.

Our colleagues embody our firm's commitment to live the greater good. In 2018, Marsh & McLennan colleagues volunteered their services to more than 3,900 nonprofit organizations. In many cases we donated our professional skills: increasing financial literacy, for example, or mentoring women entrepreneurs in developing economies.

Marsh & McLennan has been a pioneer in the use of evidence-based workforce strategy. We regularly analyze how our people policies and practices affect key elements of our performance, such as colleague engagement, retention, development and productivity.

We are increasing inclusion in our leadership ranks and throughout the company. Internal analysis at Mercer has shown that where we serve our clients with more diverse teams, we're more likely to grow those relationships. Diverse teams approach problems from multiple angles and devise more thoughtful—and ultimately more profitable—solutions.

Profit is not the only measure. In recent years we have seen increasing alignment of colleagues, clients and investors around the environmental, social and governance dimensions of business. This led us to organize a formal Environmental, Social & Governance working group to coordinate our activities across these broad dimensions. Our efforts have been recognized by, among others, CDP (formerly the Carbon Disclosure Project) for managing our environmental impact; Human Rights Campaign for advancing equal protections and benefits for our LGBTQ colleagues; and the Bloomberg Gender-Equality Index, which recently admitted Marsh & McLennan as a new member for our commitment to transparency in gender reporting and advancing women's equality in the workplace.

The bedrock of any strong culture is integrity. Every day, each one of our more than 65,000 colleagues carries the reputation of the firm with them. We have a shared responsibility to protect our culture and to do what's right for our clients at all times. We have one code of conduct, *The Greater Good*, which every colleague receives upon joining the firm.

LOOKING FORWARD

Our business is focused on the future. We help our clients see new opportunities ahead, pursue them in spite of the risks and organize the talent they need to get there.

We are optimistic about the future, beginning with our own. We continue to shift our revenue base toward faster growing areas, and we expect to see benefits from our investments in digital and technology. Successfully completing our acquisition and integration of JLT will put us on a new trajectory, accelerating growth, new-market entry and our capacity to invest in digital platforms that will change what's possible in our business and for our clients.

None of this would be possible without the dedication and support of several key constituents. I'd like to thank our Board of Directors, led by Ed Hanway, our Independent Chairman, for their exceptional governance, wisdom and leadership.

I'd also like to thank our clients for the opportunity to earn their trust, and our colleagues for the energy and creativity they bring to every challenge.

> "Successfully completing our acquisition and integration of JLT will put us on a new trajectory, accelerating growth, new-market entry and our capacity to invest in digital platforms that will change what's possible in our business and for our clients."

Finally, I'd like to thank our investors, whose support is indispensable for innovation, impact and growth at Marsh & McLennan.

We have bold aspirations for the future we aim to bring about—and we're excited to continue our journey toward it.

Best regards,

DAN GLASER
PRESIDENT AND CHIEF EXECUTIVE OFFICER
MARSH & McLENNAN COMPANIES
FEBRUARY 21, 2019

Top, from left: R. David Yost, Marc D. Oken, Lloyd M. Yates, Daniel S. Glaser, Morton O. Schapiro, Bruce P. Nolop, Steven A. Mills, Anthony K. Anderson
Bottom, from left: Oscar Fanjul, Deborah C. Hopkins, H. Edward Hanway, Elaine La Roche

OUR BOARD OF DIRECTORS

ANTHONY K. ANDERSON
Former Vice Chair and
Midwest Area Managing Partner,
Ernst & Young LLP

OSCAR FANJUL
Vice Chairman, Omega Capital
Founding Chairman and Former
Chief Executive Officer, Repsol

DANIEL S. GLASER
President and Chief Executive Officer,
Marsh & McLennan Companies

H. EDWARD HANWAY
Former Chairman and
Chief Executive Officer,
CIGNA Corporation

DEBORAH C. HOPKINS
Former Chief Executive Officer
of Citi Ventures and
Chief Innovation Officer,
Citigroup

ELAINE LA ROCHE
Chief Executive Officer,
China International Capital Corporation US
Securities, Inc.
Former Chief Executive Officer,
China International Capital Corporation,
Beijing

STEVEN A. MILLS
Former Executive Vice President,
Software & Systems,
International Business Machines
Corporation (IBM)

BRUCE P. NOLOP
Former Executive Vice President and
Chief Financial Officer,
E*TRADE Financial Corporation

MARC D. OKEN
Founding Partner,
Falfurrias Capital Partners
Former Chief Financial Officer,
Bank of America Corporation

MORTON O. SCHAPIRO
President and Professor of Economics,
Northwestern University

LLOYD M. YATES
Executive Vice President, Market
Solutions of Duke Energy and President of
Duke Energy's Carolinas Region

R. DAVID YOST
Former President and
Chief Executive Officer,
AmerisourceBergen

Recognition

Named one of **America's Best Employers** by *Forbes* magazine

Ranked **#1 Insurance Broker** by *Business Insurance*

Named one of the **Best Places to Work for LGBTQ Equality** by Human Rights Campaign

Included in *Bloomberg's* **2019 Gender-Equality Index**

Named a **2019 Supplier Engagement Leader** by CDP

Named a **Military Friendly®** company for the third consecutive year

Top, from left: Peter Hearn, John Q. Doyle, Scott McDonald, Peter J. Beshar, E. Scott Gilbert
Bottom, from left: Julio A. Portalatin, Daniel S. Glaser, Laurie Ledford, Mark McGivney

2018 EXECUTIVE COMMITTEE

PETER J. BESHAR
Executive Vice President and
General Counsel,
Marsh & McLennan Companies

JOHN Q. DOYLE
President and Chief Executive Officer,
Marsh

E. SCOTT GILBERT
Senior Vice President and
Chief Information Officer,
Marsh & McLennan Companies

DANIEL S. GLASER
President and Chief Executive Officer,
Marsh & McLennan Companies

PETER HEARN
President and Chief Executive Officer,
Guy Carpenter

LAURIE LEDFORD
Senior Vice President and
Chief Human Resources Officer,
Marsh & McLennan Companies

SCOTT McDONALD
President and Chief Executive Officer,
Oliver Wyman Group

MARK McGIVNEY
Chief Financial Officer,
Marsh & McLennan Companies

JULIO A. PORTALATIN
President and Chief Executive Officer,
Mercer

BUSINESS INSURANCE INNOVATION AWARDS 2018

Marsh awarded three *Business Insurance* **2018 Innovation Awards**

vault #1 GLOBALLY 2019 HR CONSULTING

Mercer ranked **#1 Best Consulting Firm** for HR Consulting by *Vault*

TRADING RISK AWARDS BROKER-DEALER OF THE YEAR WINNER GC Securities

GC Securities named *Trading Risk* Awards **2018 Broker-Dealer of the Year**

Great Place To Work. Best Workplaces for Diversity USA 2018

Great Place to Work and *FORTUNE* honored Oliver Wyman as one of the **2018 Best Workplaces for Diversity**

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 10-K

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2018
Commission File No. 1-5998

Marsh & McLennan Companies, Inc.
(Exact name of registrant as specified in its charter)

Delaware	**36-2668272**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)

1166 Avenue of the Americas
New York, New York 10036-2774
(Address of principal executive offices; Zip Code)
(212) 345-5000
Registrant's telephone number, including area code
Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Name of each exchange on which registered
Common Stock, par value $1.00 per share	New York Stock Exchange
	Chicago Stock Exchange
	London Stock Exchange

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.
Yes ☒ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act.
Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Website, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer or a smaller reporting Company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting Company" in Rule 12b-2 of the Exchange Act. (Check one):

Large Accelerated Filer ☒	Accelerated Filer ☐
Non-Accelerated Filer ☐ (Do not check if a smaller reporting company)	Smaller Reporting Company ☐
	Emerging Growth Company ☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant is a shell Company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

As of June 29, 2018, the aggregate market value of the registrant's common stock held by non-affiliates of the registrant was approximately $40,260,247,498 computed by reference to the closing price of such stock as reported on the New York Stock Exchange on June 29, 2018.

As of February 18, 2019, there were outstanding 505,108,980 shares of common stock, par value $1.00 per share, of the registrant.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of Marsh & McLennan Companies, Inc.'s Notice of Annual Meeting and Proxy Statement for the 2019 Annual Meeting of Stockholders (the "2019 Proxy Statement") are incorporated by reference in Part III of this Form 10-K.

INFORMATION CONCERNING FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K contains "forward-looking statements," as defined in the Private Securities Litigation Reform Act of 1995. These statements, which express management's current views concerning future events or results, use words like "anticipate," "assume," "believe," "continue," "estimate," "expect," "intend," "plan," "project" and similar terms, and future or conditional tense verbs like "could," "may," "might," "should," "will" and "would."

Forward-looking statements are subject to inherent risks and uncertainties that could cause actual results to differ materially from those expressed or implied in our forward-looking statements. Factors that could materially affect our future results include, among other things:

- our ability to successfully consummate, integrate or achieve the intended benefits of the acquisition of JLT;
- the impact of any investigations, reviews, market studies or other activity by regulatory or law enforcement authorities, including the ongoing investigations by the European and Brazilian competition authorities;
- the impact from lawsuits, other contingent liabilities and loss contingencies arising from errors and omissions, breach of fiduciary duty or other claims against us;
- our organization's ability to maintain adequate safeguards to protect the security of our information systems and confidential, personal or proprietary information, particularly given the large volume of our vendor network and the need to patch software vulnerabilities;
- our ability to compete effectively and adapt to changes in the competitive environment, including to respond to disintermediation, digital disruption and other types of innovation;
- the financial and operational impact of complying with laws and regulations where we operate, including cybersecurity and data privacy regulations such as the E.U.'s General Data Protection Regulation, anticorruption laws and trade sanctions regimes;
- the impact of macroeconomic, political, regulatory or market conditions on us, our clients and the industries in which we operate, including the impact and uncertainty around Brexit or the inability to collect on our receivables;
- the regulatory, contractual and reputational risks that arise based on insurance placement activities and various broker and consulting revenue streams;
- our ability to manage risks associated with our investment management and related services business, including potential conflicts of interest between investment consulting and fiduciary management services;
- our ability to successfully recover if we experience a business continuity problem due to cyberattack,natural disaster or otherwise;
- the impact of changes in tax laws, guidance and interpretations, including related to certain provisions of the U.S. Tax Cuts and Jobs Act, or disagreements with tax authorities;
- the impact of fluctuations in foreign exchange and interest rates on our results; and
- the impact of changes in accounting rules or in our accounting estimates or assumptions, including the impact of the adoption of the revenue recognition, pension and lease accounting standards.

The factors identified above are not exhaustive. Further information concerning Marsh & McLennan Companies and its businesses, including information about factors that could materially affect our results of operations and financial condition, is contained in the Company's filings with the Securities and Exchange Commission, including the "Risk Factors" section in Part I, Item 1A of this report and the "Management's Discussion and Analysis of Financial Condition and Results of Operations" section in Part II, Item 7 of this report. We caution readers not to place undue reliance on any forward-looking statements, which are based only on information currently available to us and speak only as of the dates on which they are made. We undertake no obligation to update or revise any forward-looking statement to reflect events or circumstances arising after the date on which it is made.

TABLE OF CONTENTS

PART I

ITEM 1. BUSINESS.

References in this report to "we", "us" and "our" are to Marsh & McLennan Companies, Inc. and its consolidated subsidiaries (the "Company"), unless the context otherwise requires.

GENERAL

The Company is a global professional services firm offering clients advice and solutions in risk, strategy and people. Its businesses include: Marsh, the insurance broker, intermediary and risk advisor; Guy Carpenter, the risk and reinsurance specialist; Mercer, the provider of HR and investment related advice and services; and Oliver Wyman Group, the management, economic and brand consultancy. With over 65,000 colleagues worldwide and annual revenue of $15 billion, the Company provides analysis, advice and transactional capabilities to clients in more than 130 countries.

The Company conducts business through two segments:

- **Risk and Insurance Services** includes risk management activities (risk advice, risk transfer and risk control and mitigation solutions) as well as insurance and reinsurance broking and services. The Company conducts business in this segment through Marsh and Guy Carpenter.
- **Consulting** includes health, wealth and career services and products, and specialized management, economic and brand consulting services. The Company conducts business in this segment through Mercer and Oliver Wyman Group.

We describe our current segments in further detail below. We provide financial information about our segments in our consolidated financial statements included under Part II, Item 8 of this report.

OUR BUSINESSES

RISK AND INSURANCE SERVICES

The Risk and Insurance Services segment generated approximately 55% of the Company's total revenue in 2018 and employs approximately 36,000 colleagues worldwide. The Company conducts business in this segment through Marsh and Guy Carpenter.

MARSH

Marsh is a global leader in delivering risk advisory and insurance solutions to companies, institutions and individuals around the world. From its founding in 1871 to the present day, Marsh has demonstrated a commitment to thought leadership, innovation and insurance expertise to meet its clients' needs. Marsh's pioneering contributions include introducing the practice of client representation through brokerage, the discipline of risk management, the globalization of risk management services and the development of service platforms that identify, quantify, mitigate and transfer risk.

Currently, approximately 34,000 Marsh colleagues provide risk management, insurance broking, insurance program management services, risk consulting, analytical modeling and alternative risk financing services to a wide range of businesses, government entities, professional service organizations and individuals in more than 130 countries. Marsh generated approximately 46% of the Company's total revenue in 2018.

Insurance Broking and Risk Consulting

In its core insurance broking and risk advisory business, Marsh employs a team approach to identify, quantify and address clients' risk management and insurance needs. Marsh's product and service offerings include risk analysis, insurance program design and placement, insurance program support and administration, claims support and advocacy, alternative risk strategies and a wide array of risk analysis and risk management consulting services. Clients benefit from Marsh's advanced analytics, deep technical expertise, collaborative global culture and the ability to develop innovative solutions and products. The firm's resources also include more than thirty five risk, specialty and industry practices, including cyber, financial and professional service practices, along with a growing employee health & benefits business.

Marsh provides services to clients of all sizes, including large multinational companies, high growth middle-market businesses, small commercial enterprises and high net-worth private clients. Marsh segments clients to ensure that their needs are effectively addressed through tailored value propositions, which aim to provide solutions that best mitigate and manage their risk exposures.

Risk Management. Marsh has an extensive global footprint and market-leading advisory and placement services that benefit large domestic and international companies and institutions facing complex risk exposures. These clients are also supported by Marsh's robust analytics and a growing digital experience.

In addition, Marsh's largest multinational clients are serviced by a dedicated team of colleagues from around the world focused on delivering service excellence and insurance solutions to clients wherever they are located. Marsh provides global expertise and an intimate knowledge of local markets, helping clients navigate local regulatory environments to address the worldwide risk issues that confront them.

Corporate. A fast-growing segment, middle market and corporate clients are served by Marsh's brokerage operations globally and constitute a substantial majority of clients served by Marsh & McLennan Agency (MMA) in the United States, Jelf in the United Kingdom and large portions of Marsh's international business.

- ***MMA*** offers a broad range of commercial property and casualty products and services, as well as solutions for employee health and benefits, retirement and administration needs and a growing personal lines business in the United States and Canada. Since its first acquisition in 2009, MMA has acquired 70 agencies. MMA provides advice on insurance program structure and market dynamics, along with industry expertise and transactional capability.
- ***Jelf*** (acquired in December 2015) *and* ***Bluefin*** (acquired in December 2016 and largely integrated into Jelf) service more than 250,000 clients, primarily in the small to mid-market segment across the United Kingdom, and offer high quality technical advice, bespoke products and distinctive services including claims consultancy, employee health and benefit, personal lines solutions and risk management. As a result of these acquisitions, Marsh is now a leading SME (small and medium enterprise) broker in the United Kingdom.

Commercial & Consumer. Clients in this market segment typically face less complex risks and are served by Marsh's innovative product and placement offerings and growing capabilities in digitally enabled distribution.

- ***Victor Insurance Holdings*** is one of the largest underwriting managers of professional liability and specialty insurance programs worldwide. In the United States, Victor O. Schinnerer & Co. and ICAT Managers offer risk management and insurance solutions to over 125,000 insureds through a national third-party distribution network of licensed brokers. ENCON Group Inc., a leading managing general agent in Canada with over 43,000 insureds, offers professional liability and construction insurance, as well as group and retiree benefits programs and claims handling for individuals, professionals, organizations and businesses. Victor has a growing business in the UK (where it was formerly known as Bluefin Underwriting) and Europe, where new businesses have been launched in the Netherlands, Italy and Germany.
- ***Dovetail Insurance*** is a leading provider of cloud-based insurance services and transaction processing tailored to the U.S. small commercial market. Dovetail deploys an advanced cloud-based technology platform that enables independent insurance agents, on behalf of their small business clients, to obtain online quotes from multiple insurance providers and bind property and casualty and workers compensation insurance policies in real time.

High Net Worth (HNW). Individual high net worth clients are serviced by Marsh USA's Private Client Services (PCS), MMA and other personal lines businesses globally. These businesses provide a single-source solution for high net worth clients and are dedicated to sourcing protections across a broad spectrum of risk. Using a consultative approach, PCS analyzes exposures and customizes programs to cover clients with complex asset portfolios.

Additional Services and Adjacent Businesses

In addition to insurance broking, Marsh provides certain other specialist advisory or placement services:

Marsh Risk Consulting (MRC) is a global practice comprising specialists that advise clients on identifying exposures, use data and analytics to assess critical business activities and evaluate existing risk practices and strategies. MRC provides client services in four main areas: Property Consulting; Casualty Consulting; Strategic Risk and Cybersecurity Consulting; and Financial Advisory Services.

Marsh Data, Digital and Analytics provides technology solutions to enhance the insurance process and data and analytical tools to better understand risks, make more informed decisions and support the implementation of innovative solutions and strategies. Among the suite of solutions deployed by this team are: Bluestream, a digital broker that enables clients to provide insurance to their customers or suppliers in a B2B2C affinity model; Blockchain solutions, where Marsh is working in conjunction with industry consortia and IBM to digitally verify insurance; and the Marsh Analytical Platform - Marsh's proprietary suite of analytics applications that delivers risk insights to clients for better decision making concerning retaining, mitigating, transferring risk and financing risk.

Marsh Captive Solutions serves more than 1,200 captive facilities, including single-parent captives, reinsurance pools and risk retention groups. The Captive Solutions practice operates in 51 captive domiciles and leverages the consulting expertise within Marsh's brokerage offices worldwide. The practice includes the Captive Advisory Group, a consulting arm that performs captive feasibility studies and helps to structure and implement captive solutions; the Captive Management Group, an industry leader in managing captive facilities and in providing administrative, consultative and insurance-related services; and the Actuarial Services Group, which is comprised of credentialed actuaries and supporting actuarial analysts.

Torrent Technologies is a service provider to Write Your Own (WYO) insurers participating in the National Flood Insurance Program (NFIP) in the United States. It offers a comprehensive suite of flood insurance products and services to WYO carriers and agents. In addition, Torrent serves as the Direct Servicing Agent of the NFIP.

Bowring Marsh is an international placement broker primarily for property and casualty risks. Bowring Marsh uses placement expertise in major international insurance market hubs, including Bermuda, Brazil, China, United Arab Emirates, Ireland, Spain, United Kingdom, the United States, Singapore, Japan and Switzerland, and an integrated global network to secure advantageous terms and conditions for its clients throughout the world.

Services for Insurers

Insurer Consulting Group provides services to insurance carriers. Through Marsh's patented electronic platform, MarketConnect, and sophisticated data analysis, Marsh provides insurers with individualized preference setting and risk identification capabilities, as well as detailed performance data and metrics. Insurer consulting teams review performance metrics and preferences with insurers and provide customized consulting services to insurers designed to improve business planning and strategy implementation. Marsh's Insurer Consulting services are designed to improve the product offerings available to clients, assist insurers in identifying new opportunities and enhance insurers' operational efficiency. The scope and nature of the services vary by insurer and by geography.

GUY CARPENTER

Guy Carpenter, the Company's reinsurance intermediary and advisor, generated approximately 9% of the Company's total revenue in 2018. The workforce consists of approximately 2,400 colleagues who provide clients with a combination of specialized reinsurance broking expertise, strategic advisory services and analytics solutions. Guy Carpenter creates and executes reinsurance and risk management solutions for clients worldwide through risk assessment analytics, actuarial services, highly-specialized product knowledge and trading relationships with reinsurance markets. Client services also include contract and claims management and fiduciary accounting.

Acting as a broker or intermediary on all classes of reinsurance, Guy Carpenter places two main types of property casualty and life / health reinsurance: treaty reinsurance, which involves the transfer of a portfolio of risks; and facultative reinsurance, which involves the transfer of part or all of the coverage provided by a single insurance policy.

Guy Carpenter provides reinsurance services in a broad range of centers of excellence and segments, including: Automobile / Motor, Aviation, Crop/Agriculture, Cyber, D&O/Non-Medical Professional, Engineering / Construction, Environmental, GL & Umbrella, Health, Life, Marine and Energy, Medical Professional, Mortgage, Political Risk & Trade Credit, Program Manager Solutions, Property, Public Sector, Retrocessional Reinsurance, Surety, Terror, and Workers Compensation / Employer Liability.

Guy Carpenter also offers clients alternatives to traditional reinsurance, including industry loss warranties and, through its licensed affiliates, capital markets alternatives such as transferring catastrophe risk through the issuance of risk-linked securities. GC Securities, the Guy Carpenter division of MMC Securities LLC and MMC Securities (Europe) Limited, offers corporate finance solutions, including mergers & acquisitions and private debt and equity capital raising, and capital markets-based risk transfer solutions that complement Guy Carpenter's strong industry relationships, analytical capabilities and reinsurance expertise.

Guy Carpenter also provides its clients with reinsurance-related services, including actuarial, enterprise risk management, financial and regulatory consulting, portfolio analysis and advice on the efficient use of capital. Guy Carpenter's Global Strategic Advisory ("GSA") unit helps clients better understand and quantify the uncertainties inherent in their businesses. Working in close partnership with Guy Carpenter account executives, GSA specialists help support clients' critical decisions in numerous areas, including reinsurance utilization, catastrophe exposure portfolio management, new product and market development, rating agency, regulatory and account impacts, loss reserve risk, capital adequacy and return on capital.

Compensation for Services in Risk and Insurance Services

Marsh and Guy Carpenter are compensated for brokerage and consulting services through commissions and fees. Commission rates and fees vary in amount and can depend on a number of factors, including the type of insurance or reinsurance coverage provided, the particular insurer or reinsurer selected, and the capacity in which the broker acts and negotiates with clients. In addition to compensation from its clients, Marsh also receives other compensation, separate from retail fees and commissions, from insurance companies. This other compensation includes, among other things, payments for consulting and analytics services provided to insurers; compensation for administrative and other services (including fees for services provided to or on behalf of insurers relating to the administration and management of quota shares, panels and other facilities in which insurers participate); and contingent commissions, which are paid by insurers based on factors such as volume or profitability of Marsh's placements, primarily driven by MMA and parts of Marsh's international operations.

Marsh and Guy Carpenter receive interest income on certain funds (such as premiums and claims proceeds) held in a fiduciary capacity for others. For a more detailed discussion of revenue sources and factors affecting revenue in our Risk and Insurance Services segment, see Part II, Item 7 ("Management's Discussion and Analysis of Financial Condition and Results of Operations") of this report.

CONSULTING

The Company's Consulting segment generated approximately 45% of the Company's total revenue in 2018 and employs approximately 28,000 colleagues worldwide. The Company conducts business in this segment through Mercer and Oliver Wyman Group.

MERCER

Mercer delivers advice and digital solutions that help organizations meet the health, wealth and career needs of a changing workforce. Mercer has more than 23,000 colleagues based in 43 countries. Clients include a majority of the companies in the Fortune 1000 and FTSE 100, as well as medium- and small-market organizations. Mercer generated approximately 32% of the Company's total revenue in 2018.

Mercer operates in the following areas:

Health. Mercer assists public and private sector employers in the design and management of employee health care programs; administration of health benefits and flexible benefits programs, including benefits outsourcing; employee engagement with their health benefits through a digital experience; compliance with local benefits-related regulations; and the establishment of health and welfare benefits coverage for employees. Mercer provides a range of advice and solutions to clients, which, depending on the engagement, may include: total health and wellness management strategies; global health brokerage solutions; vendor performance and audit; life and disability management; and measurement of healthcare provider performance. These services are provided through traditional fee-based consulting as well as commission-based brokerage services in connection with the selection of insurance companies and healthcare providers. Mercer also provides solutions for private active and retiree exchanges in the United States, including its Mercer Marketplace 365℠ and Mercer 365+℠ offerings, as well as tools to enhance employee engagement with their health benefits through its Darwin℠ platform across the world.

Wealth. Mercer assists clients worldwide in the design, governance and risk management of defined benefit, defined contribution and hybrid retirement plans. Mercer provides retirement plan outsourcing, including administration and delivery of defined benefit and defined contribution retirement benefits. Mercer also provides investment advice and related services to the sponsors and trustees of pension plans, master trusts, foundations, endowments, and insurance companies as well as wealth management and other financial intermediary firms.

The Wealth business is comprised of two practices: Defined Benefit Consulting & Administration (DBA) and Investment Management & Related Services (IMS).

DBA includes mature businesses primarily in defined benefit and actuarial consulting, defined benefit investment consulting and defined benefit plan administration. Through DBA, Mercer provides a range of retirement-related services and solutions to corporate, trustees, governmental and institutional clients. Through IMS, Mercer provides primarily investment consulting and investment management (also referred to as “delegated solutions” or “fiduciary management”) services defined contribution-related consulting and investment and administration services, and financial wellness. Mercer's services cover all stages of the investment process, from strategy, asset allocation and implementation to ongoing portfolio management services. Mercer provides these services primarily to institutional and other sophisticated investors including retirement plans (defined benefit and defined contribution), master trusts, endowments and foundations and wealth managers and other financial intermediary firms, primarily through manager of manager funds sponsored and managed by Mercer. Mercer also provides services to individual investors, including financial planning and other discretionary investment services. As of December 31, 2018, Mercer and its global affiliates had assets under delegated management of approximately $241 billion worldwide. Mercer’s financial wellness advice and services are designed to promote the financial wellbeing of employees.

Career. Mercer's Career businesses advise organizations on the engagement, management and reward of employees; the design of executive remuneration programs; people strategies during business transformation, improvement of human resource (HR) effectiveness; and the implementation of digital and cloud-based Human Resource Information Systems through Mercer Career Digital. In addition, through proprietary survey data and decision support tools, Mercer's Career Products business provides clients with human capital information and analytical capabilities to improve strategic human capital decision making. Mercer's Communications business helps clients plan and implement HR programs and other organizational changes designed to maximize employee engagement, drive desired employee behaviors and achieve improvements in business performance.

OLIVER WYMAN GROUP

With more than 5,000 professionals and offices in 30 countries, Oliver Wyman Group delivers advisory services to clients through three operating units, each of which is a leader in its field: Oliver Wyman, Lippincott and NERA Economic Consulting. Oliver Wyman Group generated approximately 14% of the Company's total revenue in 2018.

Oliver Wyman is a leading global management consulting firm. Oliver Wyman's consultants specialize by industry and functional area, allowing clients to benefit from both deep sector knowledge and specialized expertise in strategy, operations, risk management and organization transformation. Industry groups include:

- Automotive
- Aviation, Aerospace & Defense
- Business Services
- Communications, Media & Technology
- Distribution & Wholesale
- Education
- Energy
- Financial Services (including corporate and institutional banking, insurance, wealth and asset management, public policy, and retail and business banking)
- Health & Life Sciences
- Industrial Products
- Public Sector
- Retail & Consumer Products
- Surface Transportation
- Travel & Leisure

Oliver Wyman overlays its industry knowledge with expertise in the following functional specializations:

- *Actuarial*. Oliver Wyman offers actuarial consulting services to public and private enterprises, self-insured group organizations, insurance companies, government entities, insurance regulatory agencies and other organizations.
- *Corporate Finance & Restructuring.* Oliver Wyman provides an array of capabilities to support investment decision making by private equity funds, hedge funds, sovereign wealth funds, investment banks, commercial banks, arrangers, strategic investors and insurers.
- *Digital*. Oliver Wyman has a dedicated cross-industry team helping clients capitalize on the opportunities created by digital technology and addressing the strategic threats.
- *OW Labs*. OW Labs applies innovative approaches to technology to drive business impact for its clients. The mission of OW Labs is to help clients to unleash the power of the information they already have or could capture - essentially to become knowledge-powered businesses - and through that to drive competitive advantage and sustained impact.
- *Operations.* Oliver Wyman offers market-leading IT organization design, IT economics management, Lean Six Sigma principles and methodologies, and sourcing expertise to clients across a broad range of industries.
- *Organizational Effectiveness.* Our Organizational Effectiveness capability brings together deep functional expertise and industry knowledge to enable the whole organization to work in service of its strategic vision and to address the most pressing organizational, people, and change issues.
- *Payments.* Oliver Wyman draws on years of industry-shaping work in the Financial Services and Retail industries, deep digital expertise, and renowned research partners at Celent, to help clients - from banks/issuers, to payments providers, to retailers - to build growth strategies, form effective partnerships, optimize costs, and manage risk.
- *Pricing, Sales, and Marketing.* We help organizations drive top-line and margin growth through outstanding strategy and decision making on pricing, marketing optimization, and best practices on sales effectiveness.

- *Risk Management.* Oliver Wyman works with chief financial officers, chief risk officers, and other senior finance and risk management executives of corporations and financial institutions on risk management solutions. Oliver Wyman provides effective, customized solutions to the challenges presented by the evolving roles, needs and priorities of these individuals and organizations.
- *Strategy*. Oliver Wyman is a leading provider of corporate strategy advice and solutions in the areas of growth strategy and corporate portfolio; non-organic growth and M&A; performance improvement; business design and innovation; corporate center and shared services; and strategic planning.
- *Sustainability Center*. The Sustainability Center at Oliver Wyman supports leading companies and governments around the world in their efforts to foster economic growth while encouraging more responsible use of natural resources and environmental protection.

Lippincott is a brand strategy and design consulting firm that advises corporations around the world in a variety of industries on corporate branding, identity and image. Lippincott has helped create some of the world's most recognized brands.

NERA Economic Consulting provides economic analysis and advice to public and private entities to achieve practical solutions to highly complex business and legal issues arising from competition, regulation, public policy, strategy, finance and litigation. NERA professionals operate worldwide assisting clients including corporations, governments, law firms, regulatory agencies, trade associations, and international agencies. NERA's specialized practice areas include: antitrust; securities; complex commercial litigation; energy; environmental economics; network industries; intellectual property; product liability and mass torts; and transfer pricing.

Compensation for Services in Consulting

Mercer and the Oliver Wyman Group of businesses are compensated for advice and services primarily through fees paid by clients. Mercer's Health business is also compensated through commissions for the placement of insurance contracts (comprising more than half of the revenue in the Health business). Mercer's Delegated Solutions business and certain of Mercer's administration services are compensated typically through fees based on assets under administration or management. For a majority of the Mercer-managed investment funds, revenue received from Mercer's investment management clients as sub-advisor fees is reported in accordance with U.S. GAAP, on a gross basis rather than a net basis. For a more detailed discussion of revenue sources and factors affecting revenue in the Consulting segment, see Part II, Item 7 ("Management's Discussion and Analysis of Financial Condition and Results of Operations") of this report.

REGULATION

The Company's activities are subject to licensing requirements and extensive regulation under U.S. federal and state laws, as well as laws of other countries in which the Company's subsidiaries operate. See Part I, Item 1A ("Risk Factors") below for a discussion of how actions by regulatory authorities or changes in legislation and regulation in the jurisdictions in which we operate may have an adverse effect on our businesses.

***Risk and Insurance Services*.** While laws and regulations vary from location to location, every state of the United States and most foreign jurisdictions require insurance market intermediaries and related service providers (such as insurance brokers, agents and consultants, reinsurance brokers and managing general agents) to hold an individual or company license from a government agency or self-regulatory organization. Some jurisdictions issue licenses only to individual residents or locally-owned business entities; in those instances, if the Company has no licensed subsidiary, it may maintain arrangements with residents or business entities licensed to act in such jurisdiction. Such arrangements are subject to an internal review and approval process. Licensing of reinsurance intermediaries is generally less rigorous compared to that of insurance brokers, and most jurisdictions require only corporate reinsurance intermediary licenses.

In 2005, the Insurance Mediation Directive which, as from October 1, 2018 has been superseded by the Insurance Distribution Directive, was adopted by the United Kingdom and 26 other European Union Member States. Its implementation gave powers to the Financial Services Authority ("FSA"), the United

Kingdom regulator at the time, to expand their responsibilities in line with the Financial Services and Markets Act (2000), the result of which was the regulation of insurance and reinsurance intermediaries. The enhanced regulatory regime implemented in the United Kingdom created a licensing system based on an assessment of factors which included professional competence, financial capacity and the requirement to hold professional indemnity insurance. In April 2013, the FSA was superseded by the Financial Conduct Authority ("FCA"). In April 2014, the FCA's responsibilities were expanded further to include the regulation of credit activities for consumers. This included the broking of premium finance to consumers who wished to spread the cost of their insurance. In April 2015, the FCA obtained concurrent competition powers enabling it to enforce prohibitions on anti-competitive behavior in relation to financial services.

Insurance authorities in the United States and certain other jurisdictions in which the Company's subsidiaries do business, including the FCA in the United Kingdom, also have enacted laws and regulations governing the investment of funds, such as premiums and claims proceeds, held in a fiduciary capacity for others. These laws and regulations typically provide for segregation of these fiduciary funds and limit the types of investments that may be made with them, and generally apply to both the insurance and reinsurance business.

Certain of the Company's Risk and Insurance Services activities are governed by other regulatory bodies, such as investment, securities and futures licensing authorities. In the United States, Marsh and Guy Carpenter use the services of MMC Securities LLC, a SEC registered broker-dealer in the United States, investment adviser and introducing broker. MMC Securities LLC is a member of the Financial Industry Regulatory Authority ("FINRA"), the National Futures Association and the Securities Investor Protection Corporation ("SIPC"), primarily in connection with capital markets and other investment banking-related services relating to insurance-linked and alternative risk financing transactions. Also in the United States, Marsh uses the services of MMA Securities LLC, a SEC registered broker-dealer, investment adviser and member of FINRA and SIPC and JSL Securities, Inc., a SEC registered broker-dealer and member of FINRA, SIPC and the municipal Securities Rulemaking Board, primarily in connection with retirement, executive compensation and benefits consulting and advisory services to qualified and non-qualified benefits plans, companies and executives. In the United Kingdom, Marsh and Guy Carpenter use the expertise of MMC Securities (Europe) Limited, which is authorized and regulated by the FCA to provide advice on securities and investments, including mergers & acquisitions in the European Union. MMC Securities LLC, MMC Securities (Europe) Limited, MMA Securities LLC and JSL Securities, Inc. are indirect, wholly-owned subsidiaries of Marsh & McLennan Companies, Inc.

Consulting. Mercer's retirement-related consulting and investment services are subject to pension law and financial regulation in many countries. In addition, the trustee services, investment services (including advice to persons, institutions and other entities on the investment of pension assets and assumption of discretionary investment management responsibilities) and retirement and employee benefit program administrative services provided by Mercer and its subsidiaries and affiliates are also subject to investment and securities regulations in various jurisdictions, including regulations imposed or enforced by the SEC and the Department of Labor in the United States, the FCA in the United Kingdom, the Central Bank of Ireland and the Australian Prudential Regulation Authority and the Australian Securities and Investments Commission. In the United States, Mercer provides investment services through Mercer Investment Management, Inc. and Mercer Investment Consulting LLC, each an SEC-registered investment adviser in the United States. Mercer Trust Company, a New Hampshire chartered trust bank, provides services for Mercer's investment management business in the United States. The benefits insurance consulting and brokerage services provided by Mercer and its subsidiaries and affiliates are subject to the same licensing requirements and regulatory oversight as the insurance market intermediaries described above regarding our Risk and Insurance Services businesses. Mercer uses the services of MMC Securities LLC to provide certain retirement and employee benefit services. Oliver Wyman Group uses the services of MMC Securities (Europe) Limited in the European Union, primarily in connection with corporate finance advisory services.

FATCA. Regulations promulgated by the U.S. Treasury Department pursuant to the Foreign Account Tax Compliance Act and related legislation (FATCA) require the Company to take various measures relating to non-U.S. funds, transactions and accounts. The regulations impose on Mercer certain client financial account tracking and disclosure obligations with respect to non-U.S. financial institution and insurance clients, and until recently, required Marsh and Guy Carpenter (and Mercer, in limited circumstances) to collect, validate and maintain certain documentation from each foreign insurance entity that insures a risk that is subject to the regulations. On December 13, 2018, the U.S. Treasury Department modified these rules, effectively relieving Marsh and Guy Carpenter from FATCA compliance with respect to its handling of non-cash value premium payments. As it relates to these non-cash value insurance premiums, the new rules were put into immediate effect.

COMPETITIVE CONDITIONS

The Company faces strong competition in all of its businesses from providers of similar products and services, including competition with regard to identifying and pursuing acquisition candidates. The Company also encounters strong competition throughout its businesses from both public corporations and private firms in attracting and retaining qualified employees. In addition to the discussion below, see "Risks Relating to the Company Generally — Competitive Risks," in Part I, Item 1A of this report.

Risk and Insurance Services. The Company's combined insurance and reinsurance services businesses are global in scope. Our insurance and reinsurance businesses compete principally on sophistication, range, quality and cost of the services and products they offer to clients. The Company encounters strong competition from other insurance and reinsurance brokerage firms that operate on a global, regional, national or local scale, from a large number of regional and local firms in the United States, the European Union and elsewhere, from insurance and reinsurance companies that market, distribute and service their insurance and reinsurance products without the assistance of brokers or agents and from other businesses, including commercial and investment banks, accounting firms, consultants and online platforms, that provide risk-related services and products or alternatives to traditional insurance brokerage services. In addition, third party capital providers have entered the insurance and reinsurance risk transfer market offering products and capital directly to the Company's clients. Their presence in the market increases the competitive pressures that the Company faces.

Certain insureds and groups of insureds have established programs of self-insurance (including captive insurance companies) as a supplement or alternative traditional third-party insurance, thereby reducing in some cases their need for insurance placements. Certain insureds also obtain coverage directly from insurance providers. There are also many other providers of managing general agency, affinity programs and private client services, including specialized firms, insurance companies and other institutions.

Consulting. The Company's consulting businesses face strong competition from other privately and publicly held worldwide and national companies, as well as regional and local firms. These businesses generally compete on the basis of the range, quality and cost of the services and products they provide to clients. Competitors include independent consulting and outsourcing firms, as well as consulting and outsourcing operations affiliated with accounting, information systems, technology and financial services firms. Mercer's investments business faces competition from many sources, including investment consulting firms (many of which offer delegated services) and other financial institutions. In some cases, clients have the option of handling the services provided by Mercer and Oliver Wyman Group internally, without assistance from outside advisors.

Segmentation of Activity by Type of Service and Geographic Area of Operation.

Financial information relating to the types of services provided by the Company and the geographic areas of its operations is incorporated herein by reference to Note 17 to the consolidated financial statements included under Part II, Item 8 of this report.

Employees

As of December 31, 2018, the Company and its consolidated subsidiaries employed over 65,000 colleagues worldwide, including approximately 36,000 in Risk and Insurance Services and 28,000 in Consulting.

EXECUTIVE OFFICERS OF THE COMPANY

The executive officers and executive officer appointees of the Company are appointed annually by the Company's Board of Directors. The following individuals are the executive officers of the Company:

Peter J. Beshar, age 57, is Executive Vice President and General Counsel of Marsh & McLennan Companies. Mr. Beshar leads the Company's Legal, Compliance, Public Affairs, Risk Management and External Communications Departments. Before joining Marsh & McLennan Companies in November 2004, Mr. Beshar was a Litigation Partner in the law firm of Gibson, Dunn & Crutcher LLP. Mr. Beshar joined Gibson, Dunn & Crutcher in 1995 after serving as an Assistant Attorney General in the New York Attorney General's office and as the Special Assistant to Cyrus Vance in connection with the peace negotiations in the former Yugoslavia.

John Q. Doyle, age 55, is President and Chief Executive Officer of Marsh and oversees all of Marsh's businesses and operations globally. Mr. Doyle was named CEO of Marsh in July 2017. He joined Marsh & McLennan Companies as President of Marsh in April 2016. Prior to that, he was most recently Chief Executive Officer of AIG's commercial insurance businesses. Mr. Doyle began his career at AIG in 1986 and held several senior executive positions, including President and Chief Executive Officer of AIG property and casualty in the U.S., President and Chief Executive Officer of National Union Fire Insurance Company, and President of American Home Assurance Company.

Martine Ferland, age 57, is Group President of Mercer. Effective March 1, 2019, Ms. Ferland will assume the position of President and CEO of Mercer. Ms. Ferland joined Mercer in 2011 as Retirement Business Leader for EMEA Region. She then served as Europe and Pacific Region President and Co-President, Global Health, before being named Mercer Group President. Prior to joining Mercer she held senior leadership positions at Willis Towers Watson in Montreal and New York. She is a Fellow of the Society of Actuaries and of the Canadian Institute of Actuaries.

E. Scott Gilbert, age 63, is Senior Vice President and Chief Information Officer of Marsh & McLennan Companies. In addition, Mr. Gilbert oversees the Company's global Business Resiliency and Security operations. Prior to assuming his current role in September 2015, Mr. Gilbert served as Senior Vice President and Chief Risk and Compliance Officer of the Company. Prior to joining Marsh & McLennan Companies in January 2005, he had been the Chief Compliance Counsel of the General Electric Company since September 2004. Prior thereto, he was Counsel, Litigation and Legal Policy at GE. Between 1986 and 1992, when he joined GE, he served as an Assistant United States Attorney in the Southern District of New York.

Daniel S. Glaser, age 58, is President and Chief Executive Officer of Marsh & McLennan Companies. Prior to assuming his current role in 2013, Mr. Glaser served as Group President and Chief Operating Officer of the Company, with operational and strategic oversight of its Risk and Insurance Services and Consulting segments. He rejoined Marsh & McLennan Companies in December 2007 as Chairman and Chief Executive Officer of Marsh, returning to the firm where he had begun his career right out of university in 1982. Mr. Glaser is an insurance industry veteran who has held senior positions in commercial insurance and insurance brokerage, working in the United States, Europe and the Middle East. Mr. Glaser serves as the Chairman of the U.S. Federal Advisory Committee on Insurance (FACI). He is a member of the Boards of Trustees for The Institutes and Ohio Wesleyan University; the Board of Directors for the Partnership for New York City; and the Advisory Councils for St. George's Society of New York and BritishAmerican Business.

Peter Hearn, age 63, is President and Chief Executive Officer of Guy Carpenter. Previously, he was Global Chairman of Willis Re from March 2011 to June 2015. Prior to that, Mr. Hearn served as the company's Global CEO from February 2005 to March 2011, during which time he was also a member of the Willis Group Executive Committee. Mr. Hearn began his reinsurance career in 1978 with Willis Faber and Dumas, working in the North American casualty, facultative, marine, and North American reinsurance divisions until 1981, when he joined Towers Perrin Forster and Crosby. Mr. Hearn joined Willis Re as a Senior Vice President in 1994.

Laurie Ledford, age 61, is Senior Vice President and Chief Human Resources Officer of Marsh & McLennan Companies. Ms. Ledford is responsible for Marsh & McLennan Companies' overall human capital and talent strategy and the delivery of human resources services to all our colleagues worldwide. Prior to her current role, Ms. Ledford served as Chief Human Resources Officer (CHRO) for Marsh Inc.

Ms. Ledford joined Marsh in 2000 and was named CHRO in 2006, after having served as Senior Human Resources Director for Marsh's International Specialty Operations. Her prior experience was with Citibank and NationsBank.

Scott McDonald, age 52, is President and Chief Executive Officer of Oliver Wyman Group. Prior to assuming this role in January 2014, Mr. McDonald was President of Oliver Wyman. Before becoming President of Oliver Wyman in 2012, Mr. McDonald was the Managing Partner of Oliver Wyman's Financial Services practice and has held a number of senior positions, including the Global head of the Corporate & Institutional Banking practice. Before joining Oliver Wyman in 1995, he was an M&A investment banker with RBC Dominion Securities in Toronto.

Mark McGivney, age 51, is Chief Financial Officer of Marsh & McLennan Companies and has held this position since January 1, 2016. Prior to his current role, Mr. McGivney held a number of senior financial management positions since joining the Company in 2007, including Senior Vice President, Corporate Finance, Chief Financial Officer of Marsh, and Chief Financial Officer and Chief Operating Officer of Mercer. His prior experience includes senior positions at The Hanover Insurance Group, including serving as Senior Vice President of Finance, Treasurer, and Chief Financial Officer of the Property & Casualty business, and investment banking positions at Merrill Lynch and Salomon Brothers.

Julio A. Portalatin, age 59, is President and Chief Executive Officer of Mercer. Effective March 1, 2019, Mr. Portalatin will serve as Vice Chairman of Marsh & McLennan Companies and will no longer serve as an executive officer of Marsh & McLennan Companies. Prior to joining Mercer in February 2012, Mr. Portalatin was the President and CEO of Chartis Growth Economies, and Senior Vice President, American International Group (AIG). In that role, he had responsibility for operations in Asia Pacific, South Asia, Latin America, Africa, the Middle East and Central Europe. Mr. Portalatin began his career with AIG in 1993 and thereafter held a number of key leadership roles, including President of the Worldwide Accident & Health Division at American International Underwriters (AIU) from 2002-2007. From 2007-2010, he served as President and CEO of Chartis Europe S.A. and Continental European Region, based in Paris, before becoming President and CEO of Chartis Emerging Markets. Prior to joining AIG / Chartis, Mr. Portalatin spent 12 years with Allstate Insurance Company in various executive product underwriting, distribution and marketing positions. Mr. Portalatin also serves on the Board of Directors of DXC Technology.

AVAILABLE INFORMATION

The Company is subject to the information reporting requirements of the Securities Exchange Act of 1934. In accordance with the Exchange Act, the Company files with, or furnishes to, the SEC annual reports on Form 10-K, quarterly reports on Form 10-Q and current reports on Form 8-K. The Company makes these reports and any amendments to these reports available free of charge through its website, www.mmc.com, as soon as reasonably practicable after they are filed with or furnished to the SEC. The SEC also maintains a website at www.sec.gov that contains reports, proxy and information statements and other information regarding issuers, like the Company, that file electronically with the SEC.

The Company also posts on its website certain governance and other information for investors.

The Company encourages investors to visit these websites from time to time, as information is updated and new information is posted. Website references in this report are provided as a convenience and do not constitute, and should not be viewed as, incorporation by reference of the information contained on, or available through, the websites. Therefore, such information should not be considered part of this report.

Item 1A. Risk Factors

You should consider the risks described below in conjunction with the other information presented in this report. These risks have the potential to materially adversely affect the Company's business, results of operations or financial condition.

RISKS RELATING TO THE COMPANY GENERALLY

Acquisitions and Dispositions Risks

We face risks when we acquire businesses, including risks related to our proposed acquisition of JLT.

We have a history of making acquisitions and investments, including a total of 114 in the period from 2013 to 2018. In September 2018, we announced our agreement to acquire the Jardine Lloyd Thompson Group plc ("JLT"). We expect the acquisition of JLT (the "JLT Transaction") to close in the spring of 2019; however, we can provide no assurance that the various conditions to closing the JLT Transaction will be satisfied.

We may not be able to successfully integrate the business of JLT or any other business that we may acquire into our own business, or achieve any expected cost savings or synergies from such integration. The potential difficulties that we may face which could cause the results of the acquisition of JLT or any other business to differ from our expectations, include, but are not limited to, the following:

- the retention of key colleagues and clients;
- failure to implement our business plan for the combined business or to achieve anticipated revenue or profitability targets;
- delays or difficulties in completing the integration of acquired companies or assets;
- higher than expected costs, lower than expected cost savings and/or a need to allocate resources to manage unexpected operating difficulties;
- issues in integrating information and technology, accounting, tax, financial reporting, human resources, and other systems;
- assumption of unknown liabilities, or other unanticipated issues, expenses and liabilities;
- weaknesses and vulnerabilities in an acquired entity’s information systems, either before or after the acquisition, which could expose us to unexpected liabilities or make our own systems more vulnerable to a cyber-attack;
- changes in applicable laws and regulations, including changes in tax laws and any changes in the U.K. and Europe related to Brexit;
- diversion of attention and resources of management;
- promoting or retaining a positive corporate culture;
- retaining and obtaining required regulatory approvals, licenses and permits;
- for acquisitions in which the acquired company’s financial performance is incorporated into our financial results, either in full or in part, the dependence on the acquired company’s accounting, financial reporting and similar systems, controls and processes;
- the difficulty of implementing the required controls, procedures and policies appropriate for a U.S. public company, including compliance with the requirements under the Sarbanes-Oxley Act of 2002, and the potential for significant deficiencies or material weaknesses related to controls and procedures, particularly for acquisitions of companies headquartered outside the U.S.;
- the ability to receive dividends and other payments from newly acquired companies; and
- compliance with all current and potentially applicable U.S. federal and state or foreign laws and regulations, including the U.S. Foreign Corrupt Practices Act and U.S. sanctions laws.

In addition, if in the future the performance of our reporting units or an acquired business varies from our projections or assumptions, or estimates about future profitability of our reporting units or an acquired business change, the estimated fair value of our reporting units or an acquired business could change materially and could result in an impairment of goodwill and other acquisition-related intangible assets recorded on our balance sheet or in adjustments in contingent payment amounts. Given the significant size of the Company's goodwill and intangible assets, an impairment could have a material adverse effect on our results of operations in any given period.

We expect that acquisitions will continue to be a key part of our business strategy. Our success in this regard will depend on our ability to identify and compete for appropriate acquisition candidates and to complete the transactions we decide to pursue with favorable results.

When we dispose of businesses, we may continue to be subject to certain liabilities of that business after its disposition relating to the prior period of our ownership and may not be able to negotiate for limitations on those liabilities. We are also subject to the risk that the sales price is less than the amount reflected on our balance sheet.

Legal and Regulatory Risks

We are subject to significant uninsured exposures arising from errors and omissions, breach of fiduciary duty and other claims.

Our operating companies provide numerous professional services, including the placement of insurance and the provision of consulting, investment advisory and actuarial services, to clients around the world. As a result, the Company and its subsidiaries are subject to a significant number of errors and omissions, breach of fiduciary duty and similar claims, which we refer to collectively as "E&O claims." In our Risk and Insurance Services segment, such claims include allegations of damages arising from our failure to assess clients' risks, advise clients, place coverage or notify insurers of potential claims on behalf of clients in accordance with our obligations to them. In our Consulting segment, where we increasingly act in a fiduciary capacity through our investments business, such claims could include allegations of damages arising from the provision of consulting, investments, actuarial, pension administration and other services. These Consulting segment services frequently involve complex calculations and other analysis, including (i) making assumptions about, and preparing estimates concerning, contingent future events, (ii) drafting and interpreting complex documentation governing pension plans, (iii) calculating benefits within complex pension structures, (iv) providing investment advice, including guidance on asset allocation and investment strategy, and (v) managing client assets, including the selection of investment managers and implementation of the client's investment policy. We provide these services to a broad client base, including clients in the public sector for our investment services. Matters often relate to services provided by the Company dating back many years. Such claims may subject us to significant liability for monetary damages, including punitive and treble damages, negative publicity and reputational harm, and may divert personnel and management resources. We may be unable to effectively limit our potential liability in certain jurisdictions, including through insurance, or in connection with certain types of claims, particularly those concerning claims of a breach of fiduciary duty.

In establishing liabilities for E&O claims under generally accepted accounting principles ("GAAP"), the Company uses case level reviews by inside and outside counsel, actuarial analysis by Oliver Wyman Group, a subsidiary of the Company, and other methods to estimate potential losses. A liability is established when a loss is both probable and reasonably estimable. The liability is assessed quarterly and adjusted as developments warrant. In many cases, the Company has not recorded a liability, other than for legal fees to defend the claim, because we are unable, at the present time, to make a determination that a loss is both probable and reasonably estimable. Given the challenges inherent in establishing liabilities in accordance with GAAP, as well as the unpredictability of E&O claims and the litigation that can flow from them, it is possible that an adverse outcome in a particular matter could have a material adverse effect on the Company's business, results of operations or financial condition.

We are subject to regulatory investigations, reviews and other inquiries that consume significant management time and, if determined unfavorably to us, could have a material adverse effect on our business, results of operations or financial condition.

We are subject to regulatory investigations, reviews and other inquiries that consume significant management time and, if determined unfavorably to us, could have a material adverse effect on our business, results of operations or financial condition. For example, in October 2017, the Company received a notice that the Directorate-General for Competition of the European Commission had commenced a civil investigation of a number of insurance brokers, including Marsh, regarding "the exchange of commercially sensitive information between competitors in relation to aviation and aerospace insurance and reinsurance broking products and services in the European Economic Area, as well as possible coordination between competitors." In July 2017, the Directorate-General for Competition of the European Commission together with the Irish Competition and Consumer Protection Commission conducted on-site inspections at the offices of Marsh and other industry participants in Dublin in connection with an investigation regarding the "possible participation in anticompetitive agreements and/or concerted practices contrary to [E.U. competition law] in the market for commercial motor insurance in the Republic of Ireland." In January 2019, we received a notice that the Administrative Council for Economic Defense anti-trust agency in Brazil had commenced an administrative proceeding against a number of insurance brokers, including Marsh, and insurers “to investigate an alleged sharing of sensitive commercial and competitive confidential information” in the aviation insurance and reinsurance sector.

These regulatory matters are ongoing, and we are unable to predict their likely timing, outcome or ultimate impact. Additional information regarding these investigations and certain other legal and regulatory proceedings is set forth in Note 16 to our consolidated financial statements included under Part II, Item 8 of this report. In addition, by virtue of the acquisition of JLT, we will assume the legal liabilities of JLT upon closing. Accordingly, upon closing of the acquisition, we will become responsible for JLT’s legal and regulatory exposures, some of which may be currently unidentified.

We cannot guarantee that we are or will be in compliance with all current and potentially applicable U.S. federal and state or foreign laws and regulations, and actions by regulatory authorities or changes in legislation and regulation in the jurisdictions in which we operate could have a material adverse effect on our business.

Our activities are subject to extensive regulation under the laws of the United States and its various states, the United Kingdom, the European Union and its member states and the other jurisdictions in which we operate. For example, we are subject to regulation by agencies such as the Securities and Exchange Commission, FINRA and state insurance regulators in the United States, the FCA and the Competition and Markets Authority (CMA) in the United Kingdom, and the European Commission in the European Union, as further described above under Part I, Item 1 - Business (Regulation) of this report. We are also subject to trade sanctions laws relating to countries such as Cuba, Iran, Russia, Sudan and Syria, and anti-corruption laws such as the U.S. Foreign Corrupt Practices Act and the U.K. Anti-Bribery Act. We are subject to numerous other laws on matters as diverse as internal control over financial reporting and disclosure controls and procedures, securities regulation, data privacy and protection, cybersecurity, taxation, anti-trust and competition, immigration, wage-and-hour standards and employment and labor relations.

The U.S. and foreign laws and regulations that apply to our operations are complex and may change rapidly, and our efforts to comply and keep up with them require significant resources. In some cases, these laws and regulations may decrease the need for our services, increase our costs, negatively impact our revenues or impose operational limitations on our business, including on the products and services we may offer or on the amount or type of compensation we may collect. While we attempt to comply with applicable laws and regulations, there can be no assurance that we, our employees, our consultants and our contractors and other agents are in full compliance with such laws and regulations or interpretations at all times, or that we will be able to comply with any future laws or regulations. If we fail to comply or are accused of failing to comply with applicable laws and regulations, including those referred to above, we may become subject to investigations, criminal penalties, civil remedies or other consequences, including fines, injunctions, loss of an operating license or approval, increased scrutiny or oversight by regulatory authorities, the suspension of individual employees, limitations on engaging in a particular business or redress to clients or other parties, and we may become exposed to negative publicity or reputational damage. Moreover, our failure to comply with laws or regulations in one jurisdiction may result in increased regulatory scrutiny by other regulatory agencies in that jurisdiction or regulatory agencies in other jurisdictions. The cost of compliance and the consequences of failing to be in compliance could therefore have a material adverse effect on our business, results of operations and financial condition.

In most jurisdictions, government regulatory authorities have the power to interpret and amend or repeal applicable laws and regulations, and have discretion to grant, renew and revoke the various licenses and approvals we need to conduct our activities. Such authorities may require the Company to incur substantial costs in order to comply with such laws and regulations. In some areas of our businesses, we act on the basis of our own or the industry's interpretations of applicable laws or regulations, which may conflict from state to state or country to country. In the event those interpretations eventually prove different from the interpretations of regulatory authorities, we may be penalized or precluded from carrying on our previous activities. Moreover, the laws and regulations to which we are subject may conflict among the various jurisdictions and countries in which we operate, which increases the likelihood of our businesses being non-compliant in one or more jurisdictions.

Cybersecurity and Data Protection Risks

We could incur significant liability or our reputation could be damaged if our information systems are breached or we otherwise fail to protect client or Company data or information systems.

We rely on the efficient, uninterrupted and secure operation of complex information technology systems and networks to operate our business and securely process, transmit and store electronic information. In the normal course of business, we also share electronic information with our vendors and other third parties. This electronic information comprises sensitive and confidential data, including information related to financial records, health care, mergers and acquisitions and clients' personal data. Our information technology systems and safety control systems, and those of our numerous third-party providers, are potentially vulnerable to damage or interruption from a variety of external threats, including cyber-attacks, computer viruses and other malware, ransomware and other types of data and systems-related modes of attack. Our systems are also subject to compromise from internal threats such as improper action by employees, vendors and other third parties with otherwise legitimate access to our systems. Moreover, we face the ongoing challenge of managing access controls in a complex environment. The latency of a compromise is often measured in months but could be years, and we may not be able to detect a compromise in a timely manner. We could experience significant financial and reputational harm if our information systems are breached, sensitive client or Company data are compromised, surreptitiously modified, rendered inaccessible for any period of time or maliciously made public, or if we fail to make adequate or timely disclosures to the public or law enforcement agencies following any such event, whether due to delayed discovery or a failure to follow existing protocols.

We are at risk of attack by a variety of adversaries, including state-sponsored organizations, organized crime, hackers or "hactivists" (activist hackers), through use of increasingly sophisticated methods of attack, including long-term, persistent attacks referred to as advanced persistent threats. These techniques used to obtain unauthorized access or sabotage systems include, among other things, computer viruses, malicious or destructive code, ransomware, social engineering attacks (including phishing and impersonation), hacking and denial-of-service attacks. Because these techniques change frequently and new techniques may not be identified until they are launched against a target, we may be unable to anticipate these techniques or implement adequate preventative measures, resulting in potential data loss or other damage to information technology systems.

As the breadth and complexity of the technologies we use and the software and platforms we develop continue to grow, including as a result of the use of mobile devices, cloud services, "open source" software, social media and the increased reliance on devices connected to the Internet (known as the "Internet of Things"), the potential risk of security breaches and cyber-attacks also increases. Despite ongoing efforts to improve our ability to protect data from compromise, we may not be able to protect all of our data across our diverse systems. Our policies, employee training (including phishing prevention training), procedures and technical safeguards may also be insufficient to prevent or detect improper access to confidential, personal or proprietary information. In addition, the competition for talent in the data privacy and cybersecurity space is intense, and we may also be unable to hire, develop or retain suitable talent capable of adequately detecting, mitigating or remediating these risks.

Should an attacker gain access to our network using compromised credentials of an authorized user, we are at risk that the attacker might successfully leverage that access to compromise additional systems and data. Certain measures that could increase the security of our systems, such as data encryption (including data at rest encryption), heightened monitoring and logging, scanning for source code errors or deployment of multi-factor authentication, take significant time and resources to deploy broadly, and such measures may not be deployed in a timely manner or be effective against an attack. The inability to implement, maintain and upgrade adequate safeguards could have a material adverse effect on our business.

Our information systems must be continually updated, patched, and upgraded to protect against known vulnerabilities. The volume of new software vulnerabilities has increased markedly, as has the criticality of patches and other remedial measures. In addition to remediating newly identified vulnerabilities, previously identified vulnerabilities must also be continuously addressed. Accordingly, we are at risk that cyber attackers exploit these known vulnerabilities before they have been addressed. Due to the large number and age of the systems and platforms that we operate, the increased frequency at which vendors are issuing security patches to their products, the need to test patches and, in some cases coordinate with clients and vendors, before they can be deployed, we perpetually face the substantial risk that we cannot deploy patches in a timely manner. We are also dependent on third party vendors to keep their systems patched and secure in order to protect our data. Any failure related to these activities could have a material adverse effect on our business.

We have numerous vendors and other third parties who receive personal information from us in connection with the services we offer our clients. In addition, we have migrated certain data, and may increasingly migrate data, to the cloud hosted by third-party providers. Some of these vendors and third parties also have direct access to our systems. We are at risk of a cyber-attack involving a vendor or other third party, which could result in a breakdown of such third party's data protection processes or the cyber-attackers gaining access to our infrastructure through the third party. To the extent that a vendor or third party suffers a cyber-attack that compromises its operations, we could incur significant costs and possible service interruption, which could have an adverse effect on our business.

We have a history of making acquisitions and investments, and in September 2018 we announced the agreement to acquire JLT. The process of integrating the information systems of the businesses we acquire is complex and exposes us to additional risk. For instance, we may not adequately identify weaknesses and vulnerabilities in an acquired entity's information systems, either before or after the acquisition, which could affect the value we are able to derive from the acquisition, expose us to unexpected liabilities or make our own systems more vulnerable to a cyber-attack. We may also be unable to integrate the systems of the businesses we acquire into our environment in a timely manner, which could further increase these risks until such integration takes place.

We have from time to time experienced data incidents and cybersecurity breaches, such as malware incursions (including computer viruses and ransomware), users exceeding their data access authorization, employee misconduct and incidents resulting from human error, such as loss of portable and other data storage devices or misconfiguration of software or hardware resulting in inadvertent exposure of confidential or proprietary information. Like many companies, we are subject to social engineering attacks such as regular phishing email campaigns directed at our employees that can result in malware infections and data losses. Although these incidents have resulted in data loss and other damages, to date, they have not had a material adverse effect on our business or operations. In the future, these types of incidents could result in confidential, personal or proprietary information being lost or stolen, surreptitiously modified, rendered inaccessible for any period of time, or maliciously made public, including client, employee or Company data, which could have a material adverse effect on our business. In the event of a cyber-attack, we might have to take our systems offline, which could interfere with services to our clients or damage our reputation. We also may be unable to detect an incident, assess its severity or impact, or appropriately respond in a timely manner. In addition, our liability insurance, which includes cyber insurance, may not be sufficient in type or amount to cover us against claims related to security breaches, cyber-attacks and other related data and system incidents.

The costs to comply with, or our failure to comply with, U.S. and foreign laws related to privacy, data security and data protection, such as the E.U. General Data Protection Regulation, could adversely affect our financial condition, operating results and our reputation.

In operating our business and providing services and solutions to clients, we store and transfer sensitive employee and client data, including personal data, in and across multiple jurisdictions. We leverage systems and applications that are spread all over the world requiring us to regularly move data across national borders. As a result, we are subject to a variety of laws and regulations in the United States, Europe and around the world regarding privacy, data protection, data security and cyber-security. These laws and regulations are continuously evolving and developing. In particular, the number of high-profile security breaches at major companies continues to accelerate, which will likely lead to even greater regulatory scrutiny.

The scope and interpretation of the laws that are or may be applicable to us are often uncertain and may be conflicting, particularly with respect to foreign laws. For example, the E.U. General Data Protection Regulation ("GDPR"), which became effective in May 2018, greatly increased the European Commission’s jurisdictional reach of its laws and adds a broad array of requirements for handling personal data, such as the public disclosure of data breaches, privacy impact assessments, data portability and the appointment of data protection officers in some cases. Much remains unknown with respect to how to interpret and implement the GDPR. EU member states are tasked under the GDPR to enact certain implementing legislation that would add to or further interpret the GDPR requirements and potentially extend our obligations and potential liability for failing to meet such obligations. Given the breadth and depth of changes in data protection obligations, including classification of data and our commitment to a range of administrative, technical and physical controls to protect data and enable data transfers outside of the EU, our compliance with the GDPR’s requirements will continue to require time, resources and review of the technology and systems we use to satisfy the GDPR’s requirements, including as EU member states enact their legislation.

The implementation of the GDPR has led other jurisdictions to amend, or propose legislation to amend, their existing data protection laws to align with the requirements of the GDPR with the aim of obtaining an adequate level of data protection to facilitate the transfer of personal data to most jurisdictions from the EU. Accordingly, the challenges we face in the EU will likely also apply to other jurisdictions outside the EU that adopt laws similar in construction to the GDPR or regulatory frameworks of equivalent complexity. For example, Brazil, China, India and Japan have also proposed or adopted sweeping new data protection laws, in some cases including data localization laws that will require that personal data stay within their borders. At a state level, California has enacted a broad consumer privacy law that will come into effect in 2020 and several other states have introduced similar bills, or are enacting data localization laws that require data to stay within their borders. In addition to data protection laws, countries and states in the U.S. are enacting cybersecurity laws and regulations. For example, the New York State Department of Financial Services issued in 2017 cybersecurity regulations which impose an array of detailed security measures on covered entities. These requirements are being phased in and the last of them comes into effect on March 1, 2019. All of these evolving compliance and operational requirements impose significant costs that are likely to increase over time, may divert resources from other initiatives and projects and could restrict the way services involving data are offered, all of which may adversely affect our results of operations.

Furthermore, enforcement actions and investigations by regulatory authorities related to data security incidents and privacy violations continue to increase. Unauthorized disclosure or transfer of sensitive or confidential client or Company data, whether through systems failure, employee negligence, fraud or misappropriation, by the Company, our vendors or other parties with whom we do business (if they fail to meet the standards we impose) could subject us to significant litigation, monetary damages, regulatory enforcement actions, fines and criminal prosecution in one or more jurisdictions. Given the complexity of operationalizing the GDPR, the maturity level of proposed compliance frameworks and the relative lack of guidance in the interpretation of its numerous requirements, we and our clients are at risk of enforcement actions taken by EU data protection authorities or litigation from consumer advocacy groups acting on behalf of data subjects.

Competitive Risks

Our business performance and growth plans could be negatively affected if we are not able to respond effectively to the threat of digital disruption and other technological change.

To remain competitive in many of our business areas, we must anticipate and respond effectively to the threat of digital disruption and other technological change. The threat comes from traditional players, such as insurers, through disintermediation as well as from new entrants, such as technology companies, "Insurtech" start-up companies and others. These players are focused on using technology and innovation, including artificial intelligence (AI), robotics and blockchain, to simplify and improve the client experience, increase efficiencies, alter business models and effect other potentially disruptive changes in the industries in which we operate.

In order to maintain a competitive position, we must continue to upgrade our legacy operating technology and invest in new technologies and new ways to deliver our products and services. We have a number of strategic initiatives involving investments in or partnerships with technology companies as well as investments in technology systems and infrastructure to support our growth strategy. These investments may be costly, may not be profitable or may be less profitable than what we have experienced historically. In some cases, we depend on key vendors and partners to provide technology and other support for our strategic initiatives. If these vendors or partners fail to perform their obligations or otherwise cease to work with us, our ability to execute on our strategic initiatives could be adversely affected. If we do not keep up with technological changes or execute effectively on our strategic initiatives, our business and results of operations could be adversely impacted.

Failure to maintain our corporate culture or damage to our reputation could have a material adverse effect on our business.

We strive to create a culture in which our colleagues act with integrity and respect and feel comfortable speaking up to report instances of misconduct or other concerns. We are a people business, and our ability to attract and retain employees and clients is highly dependent upon our commitment to a diverse and inclusive workplace, our level of service, trustworthiness, ethical business practices and other qualities. Our colleagues are the cornerstone of this culture, and acts of misconduct by any employee, and particularly by senior management, could erode trust and confidence and damage our reputation among existing and potential clients and other stakeholders. Negative public opinion could result from actual or alleged conduct by us or those currently or formerly associated with us in any number of activities or circumstances, including operations, employment-related offenses such as sexual harassment and discrimination, regulatory compliance, and the use and protection of data and systems, satisfaction of client expectations, and from actions taken by regulators or others in response to such conduct. Any damage to our reputation could affect the confidence of our clients, rating agencies, regulators, stockholders and the other parties in a wide range of transactions that are important to our business and could have a material adverse effect on our business, financial condition and operating results.

The loss of members of our senior management team or other key colleagues could have a material adverse effect on our business.

We rely upon the contributions of our senior management team to establish and implement our business strategy and to manage the future growth of our business. The loss of any of the senior management team could limit our ability to successfully execute our business strategy or adversely affect our ability to retain existing and attract new clients. Moreover, we could be adversely affected if we fail to adequately plan for the succession of members of our senior management team.

Across all of our businesses, our colleagues are critical to developing and retaining client relationships as well as performing the services on which our revenues are earned. It is therefore important for us to attract, incentivize and retain significant revenue-producing employees and the key managerial and other professionals who support them. We face numerous challenges in this regard, including the intense competition for talent and the general mobility of colleagues.

Losing colleagues who manage or support substantial client relationships or possess substantial experience or expertise could adversely affect our ability to secure and complete client engagements, which could adversely affect our results of operations. And, subject to applicable enforceable restrictive covenants, if a key employee were to join an existing competitor or form a competing company, some of our clients could choose to use the services of that competitor instead of our services.

We face significant competitive pressures in each of our businesses, including from disintermediation.

As a global professional services firm, the Company faces intense, sustained competition in each of its businesses, and the competitive landscape continues to change and evolve. Our ability to compete successfully depends on a variety of factors, including the quality and expertise of our colleagues, our geographic reach, the sophistication and quality of our services, our pricing relative to competitors, our clients' ability to self-insure or use internal resources instead of consultants, and our ability to respond to changes in client demand and industry conditions. Some of our competitors may have greater financial resources, or may be better positioned to respond to technological and other changes in the industries we serve, and they may be able to compete more effectively. If we are unable to respond successfully to the changing conditions we face, our businesses, results of operations and financial condition will be adversely impacted.

In our Risk and Insurance Services segment, in addition to the challenges posed by capital market alternatives to traditional insurance and reinsurance, we compete intensely against a wide range of other insurance and reinsurance brokerage and risk advisory firms that operate on a global, regional, national or local scale for both client business and employee talent. In the last ten years, private equity sponsors have invested tens of billions of dollars into the insurance brokerage sector, transforming existing players and creating new ones to compete with large global and regional brokers. We also compete with in-house brokers, captive insurance companies, insurance and reinsurance companies that market and service their insurance products directly to consumers and without the assistance of brokers or other market intermediaries, and with various other companies that provide risk-related services or alternatives to traditional brokerage services, including those that rely almost exclusively on technological solutions or platforms. This competition is intensified by an industry trend toward a "syndicated" or "distributed" approach to the purchase of insurance and reinsurance brokerage services, where a client engages multiple brokers to service different portions of the client's account. In addition, third party capital providers have entered the insurance and reinsurance risk transfer market offering products and capital directly to our clients that serve as substitutes for traditional insurance.

In our Consulting segment, we compete for business with numerous consulting firms and similar organizations, many of whom also provide, or are affiliated with firms that provide, accounting, information systems, technology and financial services. Such competitors may be able to offer more comprehensive products and services to potential clients, which may give them a competitive advantage.

Consolidation in the industries we serve could adversely affect our business.

Companies in the industries that we serve may seek to achieve economies of scale and other synergies by combining with or acquiring other companies. If two or more of our current clients merge, or consolidate or combine their operations, it may decrease the amount of work that we perform for these clients. If one of our current clients merges or consolidates with a company that relies on another provider for its services, we may lose work from that client or lose the opportunity to gain additional work. Any of these or similar possible results of industry consolidation could adversely affect our business. The insurance industry continued to see robust market consolidation in 2018, and this trend could continue or accelerate in 2019. As insurance and reinsurance companies continue to consolidate, Guy Carpenter's smaller client base may be more susceptible to this risk given the limited number of insurance company clients and reinsurers in the marketplace.

We rely on a large number of vendors and other third parties to perform key functions of our business operations and to provide services to our clients. These vendors and third parties may act in ways that could harm our business.

We rely on a large number of vendors and other third parties, and in some cases subcontractors, to provide services, data and information such as technology, information security, funds transfers, business process management, and administration and support functions that are critical to the operations of our business. These third parties include correspondents, agents and other brokers and intermediaries, insurance markets, data providers, plan trustees, payroll service providers, software and system vendors, health plan providers, investment managers, risk modeling providers, outsourced providers of client-related services and providers of human resource functions, such as recruiters. As we do not fully control the actions of these third parties, we are subject to the risk that their decisions or operations may adversely impact us and replacing these service providers could create significant delay and expense. A failure by the third parties to comply with service level agreements, or regulatory or legal requirements in a high quality and timely manner, particularly during periods of our peak demand for their services, could result in economic and reputational harm to us. In addition, these third parties face their own technology, operating, business and economic risks, and any significant failures by them, including the improper use or disclosure of our confidential client, employee, or Company information or failure to comply with applicable law, could cause harm to our reputation or otherwise expose us to liability. An interruption in or the cessation of service by any service provider as a result of systems failures, capacity constraints, financial difficulties or for any other reason could disrupt our operations, impact our ability to offer certain products and services, and result in contractual or regulatory penalties, liability claims from clients or employees, damage to our reputation and harm to our business.

Business Resiliency Risks

Our inability to successfully recover should we experience a disaster or other business continuity or data recovery problem could cause material financial loss, loss of human capital, regulatory actions, reputational harm or legal liability.

If we experience a local or regional disaster or other business continuity event, such as an earthquake, hurricane, flood, terrorist attack, pandemic, security breach, cyber-attack, power loss or telecommunications failure, our ability to operate will depend, in part, on the continued availability of our personnel, our office facilities and the proper functioning of our computer, telecommunication and other related systems and operations. In such an event, we could experience operational challenges that could have a material adverse effect on our business. The risk of business disruption is more pronounced in certain geographic areas, including major metropolitan centers, like New York or London, where we have significant operations and approximately 3,500 colleagues in each location, and in certain countries and regions in which we operate that are subject to higher potential threat of terrorist attacks or military conflicts.

Our operations depend in particular upon our ability to protect our technology infrastructure against damage. If a business continuity event occurs, we could lose client or Company data or experience interruptions to our operations or delivery of services to our clients, which could have a material adverse effect. A cyber-attack or other business continuity event affecting us or a key vendor or other third party could result in a significant and extended disruption in the functioning of our information technology systems or operations or our ability to recover data, requiring us to incur significant expense to address and remediate or otherwise resolve such issues. For example, hackers have increasingly targeted companies by attacking internet-connected industrial control and safety control systems. An extended outage could result in the loss of clients and a decline in our revenues.

We regularly assess and take steps to improve our existing business continuity, disaster recovery and data recovery plans and key management succession. However, a disaster or other continuity event on a significant scale or affecting certain of our key operating areas within or across regions, or our inability to successfully recover from such an event, could materially interrupt our business operations and result in material financial loss, loss of human capital, regulatory actions, reputational harm, damaged client relationships and legal liability. Our business disruption insurance may also not fully cover, in type or amount, the cost of a successful recovery in the event of such a disruption.

Financial Risks

The ongoing effects from the 2017 Tax Cuts and Jobs Act could make our results difficult to predict.

Our effective tax rate may fluctuate in the future as a result of the 2017 Tax Cuts and Jobs Act (the "TCJA"), which included significant changes in U.S. income tax law that has a meaningful impact on our provision for income taxes and requires significant judgments and estimates in interpretation and calculations. We made reasonable estimates of the effects of the deemed repatriation of earnings and other transitional provisions and recorded provisional amounts in our financial statements for the year ended December 31, 2017. The provisional estimates were trued up during 2018 pursuant to SAB 118. However, these estimates and the ongoing impact of the TCJA are based on our current knowledge and assumptions, and therefore the ultimate impacts remain uncertain. Given the significant complexity of the TCJA, the potential for new legislation or additional guidance from U.S. Treasury, the Securities and Exchange Commission, the Financial Accounting Standards Board or other regulatory authorities related to the TCJA, recognized impacts in future periods could be significantly different from our current estimates. Such uncertainty may also result in increased scrutiny from, or disagreements with, tax authorities.

The enacted tax legislation included, among other new provisions, a reduction in the corporate tax rate, new limitations on the deductibility of net interest, a tax on Global Intangible Low-Taxed Income ("GILTI"), and the Base Erosion and Anti-Abuse Tax ("BEAT"). With respect to GILTI, we are experiencing relatively high effective tax rates on our foreign source earnings because of the limitation on foreign tax credits on income already subject to tax rates higher than the U.S. rate. The provision continues to be subject to additional regulatory guidance and possible legislative changes, which make predicting its impact on our tax rate difficult. In addition, the interaction of GILTI with the interest expense limitations may negatively impact our effective tax rate. In addition, due to potential revisions to regulations issued by the U.S. Treasury, or other legal or regulatory changes, it cannot be certain that we will not be subject to the BEAT. The BEAT levies a significant tax on cross border payments to related group companies. While we operate in a manner that currently limits our exposure to BEAT, uncertainty about the financial impact on us of this new tax remains and there can be no assurance that we will not be subject to material amounts of BEAT in the future.

Our results of operations could be adversely affected by macroeconomic conditions, political events and market conditions.

Macroeconomic conditions, political events and other market conditions around the world affect our clients' businesses and the markets they serve. These conditions may reduce demand for our services or depress pricing for those services, which could have a material adverse effect on our results of operations. Changes in macroeconomic and political conditions could also shift demand to services for which we do not have a competitive advantage, and this could negatively affect the amount of business that we are able to obtain.

The United Kingdom’s pending exit from the European Union, referred to as "Brexit," continues to create political and economic uncertainty, particularly in the United Kingdom and the European Union. The uncertainty surrounding the implementation and effect of Brexit may cause increased economic volatility, affecting our operations and business. The effects of Brexit will depend on any agreements the U.K. makes to retain access to European Union markets either during a transitional period or more permanently. The measures could potentially disrupt the markets we serve and may cause us to lose clients and colleagues. In addition, Brexit could lead to legal uncertainty and potentially divergent national laws and regulations as the U.K. determines which European Union laws to replace or replicate. These developments may have a material adverse effect on global economic conditions and the stability of financial markets, both in the U.K. and globally. Any of these factors could affect the demand for our services. Furthermore, currency exchange rates in GBP and the euro with respect to each other and the U.S. dollar have already been adversely affected by these developments. Should this foreign exchange volatility continue, it could cause volatility in our quarterly financial results.

In addition, any changes in U.S. trade policy could trigger retaliatory actions by affected countries, resulting in “trade wars,” which could affect volume of economic activity in the United States, including demand for our services.

Our investments, including our minority investments in other companies as well as our cash investments and those held in a fiduciary capacity, are subject to general credit, liquidity, counterparty, foreign exchange, market and interest rate risks. These risks may be exacerbated by global macroeconomic conditions, market volatility and regulatory, financial and other difficulties affecting the companies in which we have invested or that may be faced by financial institution counterparties. During times of stress in the banking industry, counterparty risk can quickly escalate, potentially resulting in substantial trading and investment losses for corporate and other investors. In addition, we may incur investment losses as a result of unusual and unpredictable market developments, and we may continue to experience reduced investment earnings if the yields on investments deemed to be low risk remain at or near their current low levels. If the banking system or the fixed income, interest rate, credit or equity markets deteriorate, the value and liquidity of our investments could be adversely affected. Finally, the value of the Company's assets held in other jurisdictions, including cash holdings, may decline due to foreign exchange fluctuations.

If we are unable to collect our receivables, our results of operations and cash flows could be adversely affected.

Our business depends on our ability to obtain payment from our clients of the amounts they owe us for the work we perform. As of December 31, 2018, our receivables for our commissions and fees were approximately $4.0 billion, or approximately one-quarter of our total annual revenues, and portions of our receivables are increasingly concentrated in certain businesses and geographies.

Macroeconomic or political conditions could result in financial difficulties for our clients, which could cause clients to delay payments to us, request modifications to their payment arrangements that could increase our receivables balance or default on their payment obligations to us.

We may not be able to obtain sufficient financing on favorable terms.

The maintenance and growth of our business, the payment of dividends and our ability to make share repurchases rely on our access to capital, which depends in large part on cash flow generated by our business and the availability of equity and debt financing. Certain of our businesses such as GC Securities, a division of MMC Securities, LLC and MMC Securities (Europe) Limited also rely on financings by us to fund their underwriting of debt and equity capital raising offerings by their clients. There can be no assurance that our operations will generate sufficient positive cash flow to finance all of our capital needs or that we will be able to obtain equity or debt financing on favorable terms. In addition, our ability to obtain financing will depend in part upon prevailing conditions in credit and capital markets, which are beyond our control.

Our defined benefit pension plan obligations could cause the Company's financial position, earnings and cash flows to fluctuate.

Our defined benefit pension obligations and the assets set aside to fund those obligations are sensitive to certain changes in the financial markets. Any such changes may result in increased pension expense or additional cash payments to fund these plans.

The Company has significant defined benefit pension obligations to its current and former employees, totaling approximately $14.5 billion, and related plan assets of approximately $14.4 billion, at December 31, 2018 on a U.S. GAAP basis. The Company's policy for funding its defined benefit pension plans is to contribute amounts at least sufficient to meet the funding requirements set forth by law. In the United States, contributions to these plans are based on ERISA guidelines. Outside the United States, contributions are generally based on statutory requirements and local funding practices, which may differ from measurements under U.S. GAAP. In the U.K., for example, the assumptions used to determine pension contributions are the result of legally-prescribed negotiations between the Company and the plans' trustee. Currently, the use of these assumptions results in a lower funded status than determined under U.S. GAAP and may result in contributions irrespective of the U.S. GAAP funded status.

The financial calculations relating to our defined benefit pension plans are complex. Pension plan assets could decrease as the result of poor future asset performance. Also, pension plan liabilities, periodic pension expense and future funding amounts could increase as a result of a decline in the interest rates we use to discount our pension liabilities, longer lifespans than those reflected in our mortality assumptions, changes in investment markets that result in lower expected returns on assets, actual investment return that is less than the expected return on assets, adverse changes in laws or regulations and other variables.

While we have taken steps to mitigate the impact of pension volatility on our earnings and cash funding requirements, these strategies may not be successful. Accordingly, given the magnitude of our worldwide pension plans, variations in or reassessment of the preceding or other factors or potential miscalculations relating to our defined benefit pension plans could cause significant fluctuation from year to year in our earnings and cash flow, as well as our pension plan assets, liabilities and equity, and may result in increased levels of contributions to our pension plans.

Our significant non-U.S. operations expose us to exchange rate fluctuations and various risks that could impact our business.

Approximately 52% of our business is located outside of the United States. We are subject to exchange rate movement because we must translate the financial results of our foreign subsidiaries into U.S. dollars and also because some of our subsidiaries receive revenue other than in their functional currencies. Exchange rate movements may change over time, and they could have a material adverse impact on our financial results and cash flows reported in U.S. dollars. Our U.S. operations earn revenue and incur expenses primarily in U.S. dollars. In certain jurisdictions, however, while Risk and Insurance Services operations generate revenue in a number of different currencies, expenses are almost entirely incurred in local currency. Due to fluctuations in foreign exchange rates, we are subject to economic exposure as well as currency translation exposure on the net operating results of our operations. Because the non-U.S. based revenue that is exposed to foreign exchange fluctuations is approximately 52% of total revenue, exchange rate movement can have a significant impact on our business, financial condition, results of operations and cash flow. For additional discussion, see "Market Risk and Credit Risk-Foreign Currency Risk" in Part II, Item 7A ("Quantitative and Qualitative Disclosures about Market Risk") of this report.

The purchase price of the JLT transaction is denominated in GBP. To hedge the risk of appreciation in GBP, we entered into a deal contingent foreign exchange contract ("FX Contract"), which is discussed in Note 11 to the consolidated financial statements. For each 1% increase or decrease in the GBP/U.S. dollar exchange rate, the fair value of the FX Contract will increase (dollar weakens) or decrease (dollar strengthens) by approximately $70 million. As of December 31, 2018, the GBP had depreciated 3.4% since we entered into the FX Contract in September 2018. Furthermore, and as noted above, the unknown impacts of Brexit may expose us to additional exchange rate fluctuations in GBP. We expect to record fair value gains or losses, which may be significant, through the consolidated statement of income until the closing of the JLT Transaction.

We may not be able to receive dividends or other distributions in needed amounts from our subsidiaries.

The Company is organized as a legal entity separate and distinct from our operating subsidiaries. Because we do not have significant operations of our own, we are dependent upon dividends and other payments from our operating subsidiaries to meet our obligations for paying principal and interest on outstanding debt obligations, paying dividends to stockholders, repurchasing our common stock under our share repurchase program and paying corporate expenses. In the event our operating subsidiaries are unable to pay sufficient dividends and make other payments to the Company, we may not be able to service our debt, pay dividends on or repurchase our common stock or meet our other obligations.

Further, the Company derives a significant portion of its revenue and operating profit from operating subsidiaries located outside the United States. Funds from the current year’s earnings of the Company's non-U.S. operating subsidiaries are regularly repatriated to the United States. A number of factors could arise that could limit our ability to repatriate funds or could make repatriation cost-prohibitive, including, but not limited to, the imposition of currency controls and other government restrictions on repatriation in the jurisdictions in which our subsidiaries operate, fluctuations in foreign exchange rates and the imposition of withholding and other taxes on such payments.

In the event we are unable to generate or repatriate cash from our operating subsidiaries, our overall liquidity could deteriorate and our ability to finance our obligations, including to pay dividends on or repurchase our common stock, could be adversely affected.

Our quarterly revenues and profitability may fluctuate significantly.

Quarterly variations in revenues and operating results may occur due to several factors. These include:

- the number of client engagements during a quarter;
- the possibility that clients may decide to delay or terminate a current or anticipated project as a result of factors unrelated to our work product or progress;
- fluctuations in hiring and utilization rates and clients' ability to terminate engagements without penalty;

- the impact of changes in accounting standards or in our accounting estimates or assumptions, including from the adoption of the revenue recognition, pension or lease accounting standards;
- the impact of fair value changes in the FX Contract for the JLT Transaction;
- the impact on us or our clients of changes in legislation, regulation and legal guidance or interpretations in the jurisdictions in which we operate, including with respect to the TCJA;
- seasonality due to the impact of regulatory deadlines, policy renewals and other timing factors to which our clients are subject;
- the success of our acquisitions or investments;
- macroeconomic factors such as changes in foreign exchange rates, interest rates and global securities markets, particularly in the case of Mercer, where fees in its investments business and certain other business lines are derived from the value of assets under management or administration; and
- general economic conditions, including factors beyond our control affecting economic conditions such as severe weather or other catastrophic events, since results of operations are directly affected by the levels of business activity of our clients, which in turn are affected by the level of economic activity in the industries and markets that they serve.

A significant portion of our total operating expenses is relatively fixed in the short term. Therefore, a variation in the number of client assignments or in the timing of the initiation or the completion of client assignments can cause significant variations in quarterly operating results for these businesses.

Credit rating downgrades would increase our financing costs and could subject us to operational risk.

Currently, the Company's senior debt is rated A- by S&P and Baa1 by Moody's. The ratings from both S&P and Moody's currently carry a Negative outlook.

If we need to raise capital in the future (for example, in order to fund maturing debt obligations or finance acquisitions or other initiatives), credit rating downgrades would increase our financing costs, and could limit our access to financing sources. Further, a downgrade to a rating below investment-grade could result in greater operational risks through increased operating costs and increased competitive pressures.

We have debt outstanding that could adversely affect our financial flexibility.

We have incurred significant debt in order to finance the JLT Transaction. As of December 31, 2018, we had total consolidated debt outstanding of approximately $5.8 billion. In January 2019, we issued $5 billion aggregate amount of senior notes to finance, in part, the JLT Transaction. We expect to incur additional debt before the closing of the JLT Transaction in order to finance the remaining purchase price.

The level of debt outstanding could adversely affect our financial flexibility by reducing our ability to use cash from operations for other purposes, including working capital, dividends to shareholders, share repurchases, acquisitions, capital expenditures and general corporate purposes. In addition, we are subject to risks that, at the time any of our outstanding debt matures, we will not be able to retire or refinance the debt on terms that are acceptable to us. We also face the risk of a credit rating downgrade if we do not retire or refinance the debt to levels acceptable to the credit rating agencies in a timely manner.

Global Operations

We are exposed to multiple risks associated with the global nature of our operations.

We conduct business globally. In 2018, approximately 52% of the Company's total revenue was generated from operations outside the United States, and over one-half of our employees were located outside the United States. We expect to expand our non-U.S. operations further. In particular, the JLT Transaction will significantly expand our non-U.S. operations in jurisdictions such as the U.K., Asia, South America and Australia upon close.

The geographic breadth of our activities (and the activities of JLT upon the consummation of the JLT Transaction) subjects us to significant legal, economic, operational, market, compliance and reputational risks. These include, among others, risks relating to:

- economic and political conditions in the countries in which we operate;
- client concentration in certain high-growth countries in which we operate;
- the length of payment cycles and potential difficulties in collecting accounts receivable;
- unexpected increases in taxes or changes in U.S. or foreign tax laws, rulings, policies or related legal and regulatory interpretations, including recent international initiatives to require multinational enterprises, like ours, to report profitability on a country-by-country basis, which could increase scrutiny by, or cause disagreements with, foreign tax authorities;
- potential transfer pricing-related tax exposures that may result from the flow of funds among our subsidiaries and affiliates in the various jurisdictions in which we operate;
- withholding or other taxes that foreign governments may impose on the payment of dividends or other remittances to us from our non-U.S. subsidiaries;
- potential conflicts of interest that may arise as we expand the scope of our businesses and our client base;
- international hostilities, international trade disputes, terrorist activities, natural disasters and infrastructure disruptions;
- local investment or other financial restrictions that foreign governments may impose;
- potential lawsuits, investigations, market studies, reviews or other activity by foreign regulatory or law enforcement authorities or legislatively appointed commissions, which may result in potential modifications to our businesses, related private litigation or increased scrutiny from U.S. or other regulators;
- potential costs and difficulties in complying with a wide variety of foreign laws and regulations (including tax systems) administered by foreign government agencies, some of which may conflict with U.S. or other sources of law;
- potential costs and difficulties in complying, or monitoring compliance, with foreign and U.S. laws and regulations that are applicable to our operations abroad, including trade sanctions laws relating to countries such as Cuba, Iran, Russia, Sudan and Syria and anti-corruption laws such as the U.S. Foreign Corrupt Practices Act and the U.K. Bribery Act 2010;
- limitations or restrictions that foreign or U.S. governments and regulators may impose on the products or services we sell, the methods by which we sell our products and services and the manner in which and the amounts we are compensated;
- limitations that foreign governments may impose on the conversion of currency or the payment of dividends or other remittances to us from our non-U.S. subsidiaries;
- engaging and relying on third parties to perform services on behalf of the Company; and
- potential difficulties in monitoring employees in geographically dispersed locations.

RISKS RELATING TO OUR RISK AND INSURANCE SERVICES SEGMENT

Our Risk and Insurance Services segment, conducted through Marsh and Guy Carpenter, represented 55% of the Company's total revenue in 2018. Our business in this segment is subject to particular risks.

Results in our Risk and Insurance Services segment may be adversely affected by a general decline in economic activity.

Demand for many types of insurance and reinsurance generally rises or falls as economic growth expands or slows. This dynamic affects the level of commissions and fees generated by Marsh and Guy Carpenter. To the extent our clients become adversely affected by declining business conditions, they may choose to limit their purchases of insurance and reinsurance coverage, as applicable, which would inhibit our ability to generate commission revenue and other revenue based on premiums placed by us. Also, the insurance they seek to obtain through us may be impacted by changes in their assets, property values, sales or number of employees, which may reduce our commission revenue, and they may decide not to purchase our risk advisory or other services, which would inhibit our ability to generate fee revenue. Moreover, insolvencies and combinations associated with an economic downturn, especially insolvencies and combinations in the insurance industry, could adversely affect our brokerage business through the loss of clients or by limiting our ability to place insurance and reinsurance business, as well as our revenues from insurers. Guy Carpenter is especially susceptible to this risk given the limited number of insurance company clients and reinsurers in the marketplace.

Volatility or declines in premiums and other market trends may significantly impede our ability to grow revenues and profitability.

A significant portion of our Risk and Insurance Services revenue consists of commissions paid to us out of the premiums that insurers and reinsurers charge our clients for coverage. We do not determine the insurance premiums on which our commissions are generally based. Our revenues and profitability are subject to change to the extent that premium rates fluctuate or trend in a particular direction. The potential for changes in premium rates is significant, due to the normal cycles of pricing in the commercial insurance and reinsurance markets.

As traditional insurance companies continue to rely on non-affiliated brokers or agents to generate premium, those insurance companies may seek to reduce their expenses by lowering their commission rates. The reduction of these commission rates, along with general volatility or declines in premiums, may significantly affect our revenue and profitability. Because we do not determine the timing or extent of premium pricing changes, it is difficult to accurately forecast our commission revenues, including whether they will significantly decline. As a result, we may have to adjust our plans for future acquisitions, capital expenditures, dividend payments, loan repayments and other expenditures to account for unexpected changes in revenues, and any decreases in premium rates may adversely affect the results of our operations.

In addition to movements in premium rates, our ability to generate premium-based commission revenue may be challenged by disintermediation and the growing availability of alternative methods for clients to meet their risk-protection needs. This trend includes a greater willingness on the part of corporations to self-insure, the use of captive insurers, and the presence of capital markets-based solutions for traditional insurance and reinsurance needs. Further, the profitability of our Risk and Insurances Services segment depends in part on our ability to be compensated for the analytical services and other advice that we provide, including the consulting and analytics services that we provide to insurers. If we are unable to achieve and maintain adequate billing rates for all of our services, our margins and profitability could decline.

Adverse legal developments and future regulations concerning how intermediaries are compensated by insurers or clients, as well as allegations of anti-competitive behavior or conflicts of interest more broadly, could have a material adverse effect on Marsh's business, results of operations and financial condition.

The ways in which insurance intermediaries are compensated receive scrutiny from regulators in part because of the potential for anti-competitive behavior and conflicts of interest. The vast majority of the compensation that Marsh receives is in the form of retail fees and commissions that are paid by the client or paid from premium that is paid by the client. The amount of other compensation that we receive from insurance companies, separate from retail fees and commissions, has increased in the last several years, both on an underlying basis and through acquisition. This other compensation includes payment for (i) consulting and analytics services provided to insurers; (ii) administrative and other services provided to insurers (including services relating to the administration and management of quota shares, lineslips, panels and other facilities); and (iii) contingent commissions (paid by insurers based on factors such as volume or profitability of Marsh's placements). These other revenue streams present potential regulatory, litigation and reputational risks that may arise from alleged anti-competitive behavior or conflicts of interest, and future changes in the regulatory environment may impact our ability to collect such revenue. Adverse regulatory, legal or other developments could have a material adverse effect on our business and expose the Company to negative publicity and reputational harm.

RISKS RELATING TO OUR CONSULTING SEGMENT

Our Consulting segment, conducted through Mercer and Oliver Wyman Group, represented 45% of our total revenue in 2018. Our businesses in this segment are subject to particular risks.

Mercer’s Investment Management and Related Services (IMS) business is subject to a number of risks, including risks related to third-party investment managers, operational risk, conflicts of interest, asset performance and regulatory compliance, that, if realized, could result in significant damage to our business.

Mercer’s IMS business provides clients with investment consulting and investment management (also referred to as "delegated solutions" or "fiduciary management") services. In the investment consulting business, clients make and implement their own investment decisions based upon advice provided by Mercer. In its delegated solutions business, Mercer implements the client’s investment policy by engaging and overseeing third-party asset managers who determine which investments to buy and sell. To effect implementation of a client’s investment policy, Mercer may utilize its "manager of managers" investment funds.

Mercer’s IMS business is subject to a number of risks, including risks related to third-parties, our operations, conflicts of interest, asset performance and regulatory compliance and scrutiny, which could arise in connection with these offerings. For example, Mercer’s due diligence on an asset manager may fail to uncover material deficiencies or fraud that could result in investment losses to a client. There is a risk that Mercer will fail to properly implement a client’s investment policy, which could cause an incorrect or untimely allocation of client assets among asset managers or strategies. Mercer may also be perceived as recommending certain asset managers to clients, or offering delegated solutions to an investment consulting client, solely to enhance its own compensation. Asset classes may perform poorly, or asset managers may underperform their benchmarks, due to poor market performance, a downturn in the global equity markets, negligence or other reasons, resulting in poor returns or loss of client capital. These risks, if realized, could result in significant liability and damage our business.

Revenues for the services provided by our Consulting segment may decline for various reasons, including as a result of changes in economic conditions, the value of equity, debt and other asset markets, our clients’ or an industry's financial condition or government regulation or an accelerated trend away from actively managed investments to passively managed investments.

Global economic conditions may negatively impact businesses and financial institutions. Many of our clients, including financial institutions, corporations, government entities and pension plans, have reduced expenses, including amounts spent on consulting services, and used internal resources instead of consultants during difficult economic periods. The evolving needs and financial circumstances of our clients may reduce demand for our consulting services and could adversely affect our revenues and profitability. If the economy or markets in which we operate experience weakness or deteriorate, our business, financial condition and results of operations could be materially and adversely affected.

In addition, some of Mercer's IMS business generate fees based upon the value of the clients’ assets under management or advisement. Changes in the value of equity, debt, currency, real estate, commodities or other asset classes could cause the value of assets under management or advisement, and the fees received by Mercer, to decline. Such changes could also cause clients to withdraw funds from Mercer’s IMS business in favor of other investment service providers. In either case, our business, financial condition and results of operations could be materially and adversely affected. Mercer’s IMS business also could be adversely affected by an accelerated shift away from actively managed investments to passively managed investments with associated lower fees. Further, revenue received by Mercer as investment manager to the majority of the Mercer-managed investment funds is reported in accordance with U.S. GAAP on a gross basis rather than a net basis, with sub-advisor fees reflected as an expense. Therefore the reported revenue for these offerings does not fully reflect the amount of net revenue ultimately attributable to Mercer.

Demand for many of Mercer's benefits services is affected by government regulation and tax laws, rulings, policies and interpretations, which drive our clients' needs for benefits-related services. Significant changes in government regulations affecting the value, use or delivery of benefits and human resources programs, including changes in regulations relating to health and welfare plans, defined contribution plans or defined benefit plans, may adversely affect the demand for or profitability of Mercer's services.

Factors affecting defined benefit pension plans and the services we provide relating to those plans could adversely affect Mercer.

Mercer currently provides corporate trustees, multi-employer and public clients with actuarial, consulting and administration services relating to defined benefit pension plans. The nature of our work is complex. A number of Mercer's clients have frozen or curtailed their defined benefit plans and have moved to defined contribution plans resulting in reduced revenue for Mercer's retirement business. These developments and a continued or accelerated rate of decline in revenues for our defined benefit pension plans business could adversely affect Mercer's business and operating results. In addition, our actuarial services involve numerous assumptions and estimates regarding future events, including interest rates used to discount future liabilities, estimated rates of return for a plan's assets, healthcare cost trends, salary projections and participants' life expectancies. Our consulting services involve the drafting and interpretation of trust deeds and other complex documentation governing pension plans. Our administration services include calculating benefits within complicated pension plan structures. Clients dissatisfied with our services have brought, and may bring, significant claims against us, particularly in the United States and the United Kingdom.

The profitability of our Consulting segment may decline if we are unable to achieve or maintain adequate utilization and pricing rates for our consultants.

The profitability of our Consulting businesses depends in part on ensuring that our consultants maintain adequate utilization rates (i.e., the percentage of our consultants' working hours devoted to billable activities). Our utilization rates are affected by a number of factors, including:

- our ability to transition consultants promptly from completed projects to new assignments, and to engage newly-hired consultants quickly in revenue-generating activities;
- our ability to continually secure new business engagements, particularly because a portion of our work is project-based rather than recurring in nature;
- our ability to forecast demand for our services and thereby maintain appropriate headcount in each of our geographies and workforces;
- our ability to manage attrition;
- unanticipated changes in the scope of client engagements;
- the potential for conflicts of interest that might require us to decline client engagements that we otherwise would have accepted;
- our need to devote time and resources to sales, training, professional development and other non-billable activities;
- the potential disruptive impact of acquisitions and dispositions; and
- general economic conditions.

If the utilization rate for our consulting professionals declines, our profit margin and profitability could decline.

In addition, the profitability of our Consulting businesses depends in part on the prices we are able to charge for our services. The prices we charge are affected by a number of factors, including:

- clients' perception of our ability to add value through our services;
- market demand for the services we provide;

- our ability to develop new services and the introduction of new services by competitors;
- the pricing policies of our competitors;
- the extent to which our clients develop in-house or other capabilities to perform the services that they might otherwise purchase from us; and
- general economic conditions.

If we are unable to achieve and maintain adequate billing rates for our services, our profit margin and profitability could decline.

Item 1B. Unresolved Staff Comments.

There are no unresolved comments to be reported pursuant to Item 1B.

Item 2. Properties.

Marsh & McLennan Companies maintains its corporate headquarters in New York City. We also maintain other offices around the world, primarily in leased space. In certain circumstances we may have space that we sublet to third parties, depending upon our needs in particular locations.

Marsh & McLennan Companies and certain of its subsidiaries own, directly and indirectly through special purpose subsidiaries, a 58% condominium interest covering approximately 900,000 square feet of office space in a 44 story condominium in New York City. This real estate serves as the Company's headquarters and is occupied primarily by the Company and its subsidiaries for general corporate use. The condominium interests are financed by a 30-year mortgage loan that is non-recourse to the Company unless the Company (i) is downgraded below B (stable outlook) by S&P or Fitch or B2 (stable outlook) by Moody's and such downgrade is continuing or (ii) an event of default under the mortgage loan has occurred. The mortgage is secured by a first priority assignment of leases and rents, including the leases which the Company and certain of its subsidiaries entered into with their affiliated special purpose subsidiaries which own the mortgaged condominium interests. The net rent due under those leases in effect services the mortgage debt.

Item 3. Legal Proceedings.

In April 2017, the Financial Conduct Authority in the United Kingdom (the "FCA") commenced a civil competition investigation into the aviation insurance and reinsurance sector. In connection with that investigation, the FCA carried out an on-site inspection at the London office of Marsh Limited, our Marsh and Guy Carpenter operating subsidiary in the United Kingdom. The FCA indicated that it had reasonable grounds for suspecting that Marsh Limited and other participants in the market have been sharing competitively sensitive information within the aviation insurance and reinsurance broking sector.

In October 2017, the Company received a notice that the Directorate-General for Competition of the European Commission had commenced a civil investigation of a number of insurance brokers, including Marsh, regarding "the exchange of commercially sensitive information between competitors in relation to aviation and aerospace insurance and reinsurance broking products and services in the European Economic Area ("EEA"), as well as possible coordination between competitors." In light of the action taken by the European Commission, the FCA informed Marsh Limited at the same time that it has discontinued its investigation under U.K. competition law. In May 2018, the FCA advised that it would not be taking any further action with Marsh Limited in connection with this matter.

In July 2017, the Directorate-General for Competition of the European Commission together with the Irish Competition and Consumer Protection Commission conducted on-site inspections at the offices of Marsh and other industry participants in Dublin in connection with an investigation regarding the "possible participation in anticompetitive agreements and/or concerted practices contrary to [E.U. competition law] in the market for commercial motor insurance in the Republic of Ireland."

In January 2019, the Company received a notice that the Administrative Council for Economic Defense anti-trust agency in Brazil had commenced an administrative proceeding against a number of insurance brokers, including Marsh, and insurers “to investigate an alleged sharing of sensitive commercial and competitive confidential information” in the aviation insurance and reinsurance sector.

We are cooperating with these investigations and are conducting our own reviews. At this time, we are unable to predict their likely timing, outcome or ultimate impact. There can be no assurance that the ultimate resolution of these or any related matters will not have a material adverse effect on our consolidated results of operations, financial condition or cash flows.

We and our subsidiaries are also party to a variety of other legal, administrative, regulatory and government proceedings, claims and inquiries arising in the normal course of business. Additional information regarding certain legal proceedings and related matters is set forth in Note 14 to the consolidated financial statements appearing under Part II, Item 8 ("Financial Statements and Supplementary Data") of this report.

Item 4. Mine Safety Disclosures.

Not applicable.

PART II

Item 5. Market for the Company's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities.

For information regarding dividends paid and the number of holders of the Company's common stock, see the table entitled "Selected Quarterly Financial Data and Supplemental Information (Unaudited)" below on the last page of Part II, Item 8 ("Financial Statements and Other Supplementary Data") of this report.

The Company's common stock is listed on the New York, Chicago and London Stock Exchanges. The following table indicates the high and low prices (NYSE composite quotations) of the Company's common stock during 2018 and 2017 and each quarterly period thereof:

	2018 Stock Price Range		2017 Stock Price Range	
	High	Low	High	Low
First Quarter	$85.94	$78.69	$75.52	$66.75
Second Quarter	$84.52	$78.60	$80.47	$71.79
Third Quarter	$87.89	$81.38	$84.32	$76.68
Fourth Quarter	$89.59	$74.30	$86.54	$80.12
Full Year	$89.59	$74.30	$86.54	$66.75

On February 20, 2019, the closing price of the Company's common stock on the NYSE was $91.95.

During 2018, the Company repurchased 8.2 million shares of its common stock for total consideration of $675 million. In November 2016, the Board of Directors of the Company authorized the Company to repurchase up to $2.5 billion in shares of the Company's common stock, which superseded any prior authorizations. As of December 31, 2018, the Company remained authorized to repurchase up to approximately $866 million in shares of its common stock. There is no time limit on the authorization.

Period	Total Number of Shares (or Units) Purchased	Average Price Paid per Share (or Unit)	Total Number of Shares (or Units) Purchased as Part of Publicly Announced Plans or Programs	Maximum Number (or Approximate Dollar Value) of Shares (or Units) that May Yet Be Purchased Under the Plans or Programs
Oct 1-31, 2018	—	$ —	—	$ 865,752,978
Nov 1-30, 2018	—	$ —	—	$ 865,752,978
Dec 1-31, 2018	—	$ —	—	$ 865,752,978
Total	—	$ —	—	$ 865,752,978

Item 6. Selected Financial Data.

Marsh & McLennan Companies, Inc. and Subsidiaries
FIVE-YEAR STATISTICAL SUMMARY OF OPERATIONS

For the Years Ended December 31, *(In millions, except per share figures)*	**2018**	2017	2016	2015	2014
Revenue	**$ 14,950**	$ 14,024	$ 13,211	$ 12,893	$ 12,951
Expense:					
Compensation and Benefits	**8,605**	8,085	7,694	7,569	7,692
Other Operating Expenses	**3,584**	3,284	3,086	3,140	3,135
Operating Expenses	**12,189**	11,369	10,780	10,709	10,827
Operating Income [(a)]	**2,761**	2,655	2,431	2,184	2,124
Other net benefits credits [(b)]	**215**	201	233	235	177
Interest Income	**11**	9	5	13	21
Interest Expense	**(290)**	(237)	(189)	(163)	(165)
Cost of Extinguishment of Debt	**—**	—	—	—	(137)
Investment (loss) income	**(12)**	15	—	38	37
Acquisition Related Derivative Contracts	**(441)**	—	—	—	—
Income Before Income Taxes	**2,244**	2,643	2,480	2,307	2,057
Income Tax Expense [(c)]	**574**	1,133	685	671	586
Income From Continuing Operations	**1,670**	1,510	1,795	1,636	1,471
Discontinued Operations, Net of Tax	**—**	2	—	—	26
Net Income Before Non-Controlling Interests	**1,670**	1,512	1,795	1,636	1,497
Less: Net Income Attributable to Non-Controlling Interests	**20**	20	27	37	32
Net Income Attributable to the Company	**$ 1,650**	$ 1,492	$ 1,768	$ 1,599	$ 1,465
Basic Net Income Per Share Information:					
Income From Continuing Operations	**$ 3.26**	$ 2.91	$ 3.41	$ 3.01	$ 2.64
Income From Discontinued Operations	**—**	—	—	—	0.05
Net Income Attributable to the Company	**$ 3.26**	$ 2.91	$ 3.41	$ 3.01	$ 2.69
Average Number of Shares Outstanding	**506**	513	519	531	545
Diluted Income Per Share Information:					
Income From Continuing Operations	**$ 3.23**	$ 2.87	$ 3.38	$ 2.98	$ 2.61
Discontinued Operations, Net of Tax Per Share	**—**	—	—	—	0.04
Net Income Attributable to the Company	**$ 3.23**	$ 2.87	$ 3.38	$ 2.98	$ 2.65
Average Number of Shares Outstanding	**511**	519	524	536	553
Dividends Paid Per Share	**$ 1.58**	$ 1.43	$ 1.30	$ 1.18	$ 1.06
Return on Average Equity	**22%**	22%	27%	23%	19%
Year-End Financial Position:					
Working capital	**$ 1,010**	$ 1,300	$ 802	$ 1,336	$ 1,856
Total assets	**$ 21,578**	$ 20,429	$ 18,190	$ 18,216	$ 17,793
Long-term debt	**$ 5,510**	$ 5,225	$ 4,495	$ 4,402	$ 3,368
Total equity	**$ 7,584**	$ 7,442	$ 6,272	$ 6,602	$ 7,133
Total shares outstanding (net of treasury shares)	**504**	509	514	522	540
Other Information:					
Number of employees	**66,000**	64,000	60,000	60,000	57,000
Stock price ranges—					
U.S. exchanges — High	**$ 89.59**	$ 86.54	$ 69.77	$ 59.99	$ 58.74
— Low	**$ 74.30**	$ 66.75	$ 50.81	$ 50.90	$ 44.25

(a) Includes the impact of net restructuring costs of $161 million, $40 million, $44 million, $28 million, and $12 million in 2018, 2017, 2016, 2015 and 2014, respectively.

(b) Reflects the adoption of ASC 715 on January 1, 2018, which changed the presentation of net periodic pension cost and net periodic postretirement cost. The Company has restated prior years for this new presentation.

(c) Income tax expense in 2017 includes a $460 million provisional charge related to the enactment of U.S. tax reform.

See "Management's Discussion and Analysis of Financial Condition and Results of Operations", appearing under Part II, Item 7 of this report, for discussion of significant items affecting the results of operations in 2018, 2017 and 2016.

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

General

Marsh & McLennan Companies, Inc. and its consolidated subsidiaries (the "Company") is a global professional services firm offering clients advice and solutions in risk, strategy and people. Its businesses include: Marsh, the insurance broker, intermediary and risk advisor; Guy Carpenter, the risk and reinsurance specialist; Mercer, the provider of HR and Investment related financial advice and services; and Oliver Wyman Group, the management, economic and brand consultancy. With over 65,000 colleagues worldwide and annual revenue of $15 billion, the Company provides analysis, advice and transactional capabilities to clients in more than 130 countries.

The Company conducts business through two segments:

- **Risk and Insurance Services** includes risk management activities (risk advice, risk transfer and risk control and mitigation solutions) as well as insurance and reinsurance broking and services. The Company conducts business in this segment through Marsh and Guy Carpenter.
- **Consulting** includes health, wealth and career consulting services and products, and specialized management, economic and brand consulting services. The Company conducts business in this segment through Mercer and Oliver Wyman Group.

We describe the primary sources of revenue and categories of expense for each segment below, in our discussion of segment financial results. A reconciliation of segment operating income to total operating income is included in Note 17 to the consolidated financial statements included in Part II, Item 8 in this report. The accounting policies used for each segment are the same as those used for the consolidated financial statements.

Pending Acquisition

On September 18, 2018, the Company announced that it had reached agreement on the terms of a recommended cash acquisition of Jardine Lloyd Thompson Group plc ("JLT"), a public company organized under the laws of England and Wales (the "JLT Transaction"). Under the terms of the Transaction, JLT shareholders will receive £19.15 in cash for each JLT share, which values JLT's existing issued and to be issued share capital at approximately £4.3 billion (or approximately $5.6 billion based on an exchange rate of U.S. $1.31:£1). The Company intends to implement the Transaction by way of a scheme of arrangement under Part 26 of the United Kingdom Companies Act 2006, as amended. In addition, the Company expects to repay existing JLT debt in connection with the closing of the Transaction.

The Transaction was approved by JLT shareholders on November 7, 2018. The Transaction remains subject to conditions and certain further terms, including, among others, (i) the sanction of the Transaction by the High Court of Justice in England and Wales, (ii) completion of the transaction no later than December 31, 2019 and (iii) the receipt of certain antitrust, regulatory and other approvals. Subject to the satisfaction or waiver of all relevant conditions, the Transaction is expected to be completed in the spring of 2019.

This Management's Discussion & Analysis ("MD&A") contains forward-looking statements as that term is defined in the Private Securities Litigation Reform Act of 1995. See "Information Concerning Forward-Looking Statements" at the outset of this report.

Consolidated Results of Operations

For the Years Ended December 31, *(In millions, except per share figures)*		**2018**		2017		2016
Revenue	**$**	**14,950**	$	14,024	$	13,211
Expense						
Compensation and Benefits		**8,605**		8,085		7,694
Other Operating Expenses		**3,584**		3,284		3,086
Operating Expenses		**12,189**		11,369		10,780
Operating Income	**$**	**2,761**	$	2,655	$	2,431
Income from Continuing Operations	**$**	**1,670**	$	1,510	$	1,795
Discontinued Operations, Net of Tax		**—**		2		—
Net Income Before Non-Controlling Interests	**$**	**1,670**	$	1,512	$	1,795
Net Income Attributable to the Company	**$**	**1,650**	$	1,492	$	1,768
Basic net income per share						
– Continuing operations	**$**	**3.26**	$	2.91	$	3.41
– Net income attributable to the Company	**$**	**3.26**	$	2.91	$	3.41
Diluted net income per share						
– Continuing operations	**$**	**3.23**	$	2.87	$	3.38
– Net income attributable to the Company	**$**	**3.23**	$	2.87	$	3.38
Average number of shares outstanding						
– Basic		**506**		513		519
– Diluted		**511**		519		524
Shares outstanding at December 31,		**504**		509		514

In 2018, the Company's results of operations and earnings per share were significantly impacted by the following items:

- In connection with the Transaction, to hedge the risk of appreciation of the GBP-denominated purchase price relative to the U.S. dollar, in September 2018, the Company entered into a deal contingent foreign exchange contract (the "FX Contract") to, solely upon consummation of the Transaction, purchase £5.2 billion and sell a corresponding amount of U.S. dollars at a contracted exchange rate. The FX Contract is discussed in Note 11 to the consolidated financial statements. An unrealized loss of $325 million related to the fair value changes to this derivative has been recognized in the consolidated statement of income for the year ended December 31, 2018, largely due to the depreciation of the GBP from September 2018. The Company expects to record fair value gains and losses, which may be significant, through its income statement until the completion of the Transaction.
- To secure funding for the Transaction, the Company entered into a bridge loan agreement with aggregate commitments of £5.2 billion in September 2018. The Company paid approximately $35 million of customary upfront fees related to the bridge loan, which are being amortized as interest expense based on the period of time the facility is expected to be in effect. The Company recorded interest expense of approximately $30 million for the year ended December 31, 2018 related to the amortization of the bridge loan fees. The commitments under the bridge loan agreement were reduced by £3.79 billion as a result of a $5 billion aggregate amount of senior notes issued in January 2019.
- In addition, to hedge the economic risk of increases in interest rates prior to its issuance of senior notes in January 2019, in the fourth quarter of 2018, the Company entered into Treasury lock contracts related to $2 billion of the expected debt. These economic hedges were not designated as accounting hedges. The Company recorded an unrealized loss of $116 million related to the changes in the fair value of these derivatives in the consolidated statement of income for the year

ended December 31, 2018. In January 2019, upon issuance of the $5 billion of senior notes, the Company settled the Treasury lock contracts and made a payment to its counter party for $122 million. An additional charge of $6 million will be recorded in the first quarter of 2019 related to the settlement of the Treasury lock derivatives.

- The Company owns approximately 33% of the common stock of Alexander Forbes ("AF"), a South African company listed on the Johannesburg Stock Exchange, which it purchased in 2014 for 7.50 South African Rand per share. Based on the duration of time and the extent to which the shares traded below their cost, the Company concluded the decline in value of the investment was other than temporary and recorded a charge of $83 million in the 2018 consolidated statement of income.
- Pension Settlement charge – The Defined Benefit Pension Plans in the U.K. allow participants an option for the payment of a lump sum distribution from plan assets before retirement in full satisfaction of the retirement benefits due to the participant as well as any survivor's benefit. The Company's policy under applicable U.S. GAAP is to treat these lump sum payments as a partial settlement of the plan liability if they exceed the sum of service cost plus interest cost components of net period pension cost of a plan for the year ("settlement thresholds"). The amount of lump sum payments through December 31, 2018 exceeded the settlement thresholds in two of the U.K. plans. The Company recorded non-cash settlement charges, primarily related to these plans of $42 million in December 2018 in the consolidated statement of income, of which approximately 90% impacted Risk and Insurance Services.

In 2017, the Company's results of operations and earnings per share were impacted, in part, by two significant items:

- U.S. tax reform – On December 22, 2017, the U.S. enacted comprehensive tax legislation commonly referred to as the Tax Cuts and Jobs Act (the "TCJA"). The TCJA provides for a reduction in the U.S. corporate tax rate to 21% and the creation of a territorial tax system. The TCJA also changes the deductibility of certain expenses, primarily executive officers compensation. An aggregate charge of $460 million was recorded in the fourth quarter of 2017 as a result of the enactment of the TCJA. The TCJA provides for a transition to the territorial system through a deemed repatriation tax (the "transition tax") on undistributed earnings of non-U.S. subsidiaries. The Company recorded a provisional charge of $240 million in the fourth quarter of 2017 as an estimate of U.S. transition taxes and ancillary effects, including state taxes and foreign withholding taxes related to the change in permanent reinvestment status with respect to our pre-2018 foreign earnings. This transition tax is payable over eight years. The reduction of the U.S. corporate tax rate from 35% to 21%, reduces the value of the U.S. deferred tax assets and liabilities, accordingly, a net charge of $220 million was also recorded in the fourth quarter of 2017 in the consolidated statement of income.
- Pension Settlement charge – Similar to the item discussed above, the Company recorded a non-cash settlement charge, primarily related to its U.K. plans of $54 million in 2017, of which approximately 85% impacted Risk and Insurance Services.

Consolidated operating income increased 4%, to $2.8 billion in 2018 compared with $2.7 billion in 2017, reflecting the impact of 7% increases in both revenue and operating expenses. Income before income taxes decreased 15%, to $2.2 billion. This decrease primarily resulted from the significant items discussed above (the "significant items"), which reduced income before taxes by 21%, and more than offset the increase in operating income. Net income attributable to the Company ("after tax income") increased 11%, of which 9% was due to the year-over-year increase in operating earnings and investment income related to the change in fair value of equity securities, partly offset by the significant items discussed above and higher interest expense. The year over year impact of the significant items was 2% of the increase.

Diluted earnings per share increased 13% to $3.23 in 2018 compared with $2.87 in 2017. This increase primarily resulted from an increase in operating earnings and investment income related to the change in fair value of equity securities, partly offset by the significant items discussed above and higher interest expense, as well as a 2% decrease in the average number of shares outstanding. The negative earnings per share impact of the significant items was in 2018, largely offset by the year-over-year impact of the

$460 million charge in 2017 related to U.S. tax reform, which together resulted in a net increase of approximately $.06 in diluted earnings per share.

Average diluted shares outstanding for 2018 decreased to 511 million, compared with 519 million during 2017. Share repurchases during the year were partly offset by the shares issued related to vesting of share awards and the exercise of employee stock options.

Risk and Insurance Services operating income increased $133 million, or 8%, in 2018 compared with 2017. Revenue increased 8%, reflecting a 5% increase on an underlying basis and a 3% increase from acquisitions. Expense increased 8% or 5% on an underlying basis in 2018 compared with 2017.

Consulting operating income decreased $11 million, or 1%, to $1.1 billion in 2018 compared with 2017, reflecting the combined impact of a 5% growth in revenue and 6% in expense.

Consolidated operating income increased 9%, to $2.7 billion, in 2017 compared to $2.4 billion in 2016, reflecting the combined impact of a 6% increase in revenue and a 5% increase in expenses as compared to the prior year.

Risk and Insurance Services operating income increased $150 million, or 9% in 2017 compared with 2016. Revenue increased 7% reflecting a 3% increase on an underlying basis and a 4% increase from acquisitions. Expense increased 6% compared with 2016.

Consulting operating income increased $72 million, or 7%, to $1.1 billion in 2017 compared with 2016, reflecting the combined impact of 5% growth for both revenue and expense.

Consolidated Revenue and Expense

Revenue - Components of Change

The Company conducts business in many countries. As a result, foreign exchange rate movements may impact period-to-period comparisons of revenue. Similarly, certain other items such as the revenue impact of acquisitions and dispositions, including transfers among businesses, and the impact of the new revenue standard, ASC 606, may impact period-to-period comparisons of revenue. Underlying revenue measures the change in revenue from one period to another by isolating these impacts. The impact of foreign currency exchange fluctuations, acquisitions and dispositions, including transfers among businesses, on the Company's operating revenues by segment was as follows:

	Year Ended December 31,			Components of Revenue Change*			
(In millions, except percentage figures)	**2018**	2017	**% Change GAAP Revenue**	**Currency Impact**	**Acquisitions/ Dispositions/ Other Impact**	**Revenue Standard Impact**	**Underlying Revenue**
Risk and Insurance Services							
Marsh	**$ 6,877**	$ 6,404	7%	—	3%	—	4%
Guy Carpenter	**1,286**	1,187	8%	1%	—	—	7%
Subtotal	**8,163**	7,591	8%	1%	3%	—	5%
Fiduciary Interest Income	**65**	39					
Total Risk and Insurance Services	**8,228**	7,630	8%	—	3%	—	5%
Consulting							
Mercer	**4,732**	4,528	5%	1%	1%	—	3%
Oliver Wyman Group	**2,047**	1,916	7%	1%	—	—	5%
Total Consulting	**6,779**	6,444	5%	1%	1%	—	3%
Corporate/Eliminations	**(57)**	(50)					
Total Revenue	**$14,950**	$14,024	7%	1%	2%	—	4%

* Components of revenue change may not add due to rounding.

The following table provides more detailed revenue information for certain of the components presented above:

	Year Ended December 31,		Components of Revenue Change*				
(In millions, except percentage figures)	**2018**	2017	% Change GAAP Revenue	Currency Impact	Acquisitions/ Dispositions/ Other	Revenue Standard Impact	Underlying Revenue
Marsh:							
EMEA	**$ 2,132**	$ 2,033	5 %	3 %	1 %	—	—
Asia Pacific	**683**	645	6 %	—	—	—	5 %
Latin America	**400**	404	(1)%	(10)%	3 %	—	6 %
Total International	**3,215**	3,082	4 %	1 %	1 %	—	2 %
U.S./Canada	**3,662**	3,322	10 %	—	5 %	—	6 %
Total Marsh	**$ 6,877**	$ 6,404	7 %	—	3 %	—	4 %
Mercer:							
Defined Benefit Consulting & Administration	**$ 1,279**	$ 1,381	(7)%	1 %	(5)%	—	(4)%
Investment Management & Related Services	**906**	767	18 %	—	9 %	—	9 %
Total Wealth	**2,185**	2,148	2 %	1 %	—	—	1 %
Health	**1,735**	1,648	5 %	—	1 %	—	4 %
Career	**812**	732	11 %	—	6 %	—	5 %
Total Mercer	**$ 4,732**	$ 4,528	5 %	1 %	1 %	—	3 %

Underlying revenue measures the change in revenue using consistent currency exchange rates, excluding the impact of certain items that affect comparability such as: acquisitions, dispositions, transfers among businesses, changes in estimate methodology and the impact of the new revenue standard.

* Components of revenue change may not add due to rounding.

	Year Ended December 31,		Components of Revenue Change*			
(In millions, except percentage figures)	2017	2016	% Change GAAP Revenue	Currency Impact	Acquisitions/ Dispositions/ Other	Underlying Revenue
Risk and Insurance Services						
Marsh	$ 6,404	$ 5,976	7%	—	5%	3%
Guy Carpenter	1,187	1,141	4%	—	—	4%
Subtotal	7,591	7,117	7%	—	4%	3%
Fiduciary Interest Income	39	26				
Total Risk and Insurance Services	7,630	7,143	7%	—	4%	3%
Consulting						
Mercer	4,528	4,323	5%	—	2%	2%
Oliver Wyman Group	1,916	1,789	7%	—	—	7%
Total Consulting	6,444	6,112	5%	—	2%	4%
Corporate/Eliminations	(50)	(44)				
Total Revenue	$ 14,024	$ 13,211	6%	—	3%	3%

* Components of revenue change may not add due to rounding.

The following table provides more detailed revenue information for certain of the components presented above:

(In millions, except percentage figures)	Year Ended December 31, 2017	2016	% Change GAAP Revenue	Components of Revenue Change* Currency Impact	Acquisitions/ Dispositions/ Other	Underlying Revenue
Marsh:						
EMEA	$ 2,033	$ 1,924	6 %	(1)%	7 %	—
Asia Pacific	645	635	2 %	—	(5)%	6 %
Latin America	404	374	8 %	(3)%	3 %	7 %
Total International	3,082	2,933	5 %	(1)%	4 %	2 %
U.S. / Canada	3,322	3,043	9 %	—	6 %	4 %
Total Marsh	$ 6,404	$ 5,976	7 %	—	5 %	3 %
Mercer:						
Defined Benefit Consulting & Administration	$ 1,381	$ 1,447	(5)%	(1)%	(2)%	(2)%
Investment Management & Related Services	767	606	26 %	1 %	15 %	10 %
Total Wealth	2,148	2,053	5 %	—	3 %	2 %
Health	1,648	1,588	4 %	—	2 %	2 %
Career	732	682	7 %	—	2 %	5 %
Total Mercer	$ 4,528	$ 4,323	5 %	—	2 %	2 %

Underlying revenue measures the change in revenue using consistent currency exchange rates, excluding the impact of certain items that affect comparability such as: acquisitions, dispositions, transfers among businesses and changes in estimate methodology.

Effective January 1, 2017, Mercer established a Wealth business reflecting a unified client strategy for its former Retirement and Investment business. The 2016 information in the chart above has been conformed to the current presentation.

* Components of revenue change may not add due to rounding.

Revenue

Consolidated revenue was $15 billion in 2018, an increase of 7%, or 4% on an underlying basis. Revenue in the Risk and Insurance Services segment increased 8% in 2018 compared with 2017, or 5% on an underlying basis. Revenue increased 4% and 7% on an underlying basis at Marsh and Guy Carpenter, respectively, as compared with 2017. The Consulting segment's revenue increased 5% compared with 2017, or 3% on an underlying basis. Revenue increased 3% and 5% on an underlying basis at Mercer and Oliver Wyman Group, respectively, as compared with 2017. As discussed in more detail in Note 2 of the consolidated financial statements, the adoption of the new revenue standard shifted income among quarters from historical patterns, but did not have a significant year-over-year impact on annual revenue.

Consolidated revenue was $14 billion in 2017, an increase of 6%, or 3% on an underlying basis. Revenue in the Risk and Insurance Services segment increased 7% in 2017 compared with 2016, or 3% on an underlying basis. Revenue increased 3% and 4% on an underlying basis at Marsh and Guy Carpenter, respectively, as compared with 2016. The Consulting segment's revenue increased 5% compared with 2016, or 4% on an underlying basis. Revenue increased 2% and 7% on an underlying basis at Mercer and Oliver Wyman Group, respectively, as compared with 2016.

Operating Expense

Consolidated operating expenses increased 7% in 2018 compared with 2017, or 5% on an underlying basis. The increase in underlying expenses is primarily due to higher base salaries, incentive compensation, asset based fees, recoverable expenses and costs associated with the acquisition of JLT as well as the impact of severance and consulting costs related to the Marsh simplification initiative and Mercer business restructure discussed below under "Risk and Insurance Services" and "Consulting", respectively.

Consolidated operating expenses increased 5% in 2017 compared with 2016, or 2% on an underlying basis. The increase in underlying expenses was primarily due to higher base salaries and incentive compensation costs, partly offset by lower costs related to liabilities for errors and omissions.

Risk and Insurance Services

In the Risk and Insurance Services segment, the Company's subsidiaries and other affiliated entities act as brokers, agents or consultants for insureds, insurance underwriters and other brokers in the areas of risk management, insurance broking and insurance program management services, primarily under the name of Marsh; and engage in reinsurance broking, catastrophe and financial modeling services and related advisory functions, primarily under the name of Guy Carpenter.

Marsh and Guy Carpenter are compensated for brokerage and consulting services primarily through fees paid by clients or commissions paid out of premiums charged by insurance and reinsurance companies. Commission rates vary in amount depending upon the type of insurance or reinsurance coverage provided, the particular insurer or reinsurer, the capacity in which the broker acts and negotiates with clients. Revenues can be affected by premium rate levels in the insurance/reinsurance markets, the amount of risk retained by insurance and reinsurance clients themselves and by the value of the risks that have been insured since commission-based compensation is frequently related to the premiums paid by insureds/reinsureds. In many cases, fee compensation may be negotiated in advance, based on the type of risk, coverage required and service provided by the Company and ultimately, the extent of the risk placed into the insurance market or retained by the client. The trends and comparisons of revenue from one period to the next can be affected by changes in premium rate levels, fluctuations in client risk retention and increases or decreases in the value of risks that have been insured, as well as new and lost business, and the volume of business from new and existing clients.

Marsh also receives other compensation from insurance companies, separate from retail fees and commissions. This compensation includes, among other things, payment for consulting and analytics services provided to insurers; administrative and other services provided to or on behalf of insurers (including services relating to the administration and management of quota share, panels and other facilities in which insurers participate); and contingent commissions. Marsh and Guy Carpenter also receive interest income on certain funds (such as premiums and claims proceeds) held in a fiduciary capacity for others. The investment of fiduciary funds is regulated by state and other insurance authorities. These regulations typically require segregation of fiduciary funds and limit the types of investments that may be made with them. Interest income from these investments varies depending on the amount of funds invested and applicable interest rates, both of which vary from time to time. For presentation purposes, fiduciary interest is segregated from the other revenues of Marsh and Guy Carpenter and separately presented within the segment, as shown in the revenue by segments charts presented earlier in this MD&A.

The results of operations for the Risk and Insurance Services segment are presented below:

(In millions of dollars, except percentages)	**2018**	2017	2016
Revenue	**$ 8,228**	$ 7,630	$ 7,143
Compensation and Benefits	**4,485**	4,171	3,904
Other Operating Expenses	**1,879**	1,728	1,658
Operating Expenses	**6,364**	5,899	5,562
Operating Income	**$ 1,864**	$ 1,731	$ 1,581
Operating Income Margin	**22.7%**	22.7%	22.1%

Revenue

Revenue in the Risk and Insurance Services segment increased 8% in 2018 compared with 2017, due to a 5% growth in underlying revenue and 3% growth from acquisitions. The adoption of the new revenue standard shifted revenue among quarters from historical patterns, but did not have a significant year-over-year impact on annual revenue.

In Marsh, revenue increased 7% to $6.9 billion in 2018 as compared with 2017, reflecting a 4% increase on an underlying basis and a 3% increase from acquisitions. U.S./Canada had underlying revenue growth of 6%. International operations increased 2% on an underlying basis, reflecting increases of 5% in Asia Pacific and 6% in Latin America, while growth in EMEA was flat.

Guy Carpenter's revenue increased 8% to $1.3 billion in 2018 compared with 2017, or 7% on an underlying basis.

Fiduciary interest income was $65 million in 2018 compared with $39 million in 2017 due to the combined effect of higher average invested funds and higher interest rates.

The Risk and Insurance Services segment completed twelve acquisitions during 2018. Information regarding those acquisitions is included in Note 4 to the consolidated financial statements.

Revenue in the Risk and Insurance Services segment increased 7% in 2017 compared with 2016, due to a 3% growth in underlying revenue and 4% growth from acquisitions.

In Marsh, revenue increased 7% to $6.4 billion in 2017 as compared with 2016, reflecting a 3% increase on an underlying basis and a 5% increase from acquisitions. U.S./Canada had underlying revenue growth of 4%. International operations increased 2% on an underlying basis, reflecting increases of 6% in Asia Pacific and 7% in Latin America, while growth in EMEA was flat.

Guy Carpenter's revenue increased 4% to $1.2 billion in 2017 compared with 2016, for both a reported and underlying basis.

Fiduciary interest income was $39 million in 2017 compared with $26 million in 2016 due to the combined effect of higher average invested funds and higher interest rates.

The Risk and Insurance Services segment completed seven acquisitions during 2017.

Expense

Expense in the Risk and Insurance Services segment increased 8% in 2018 compared with 2017, reflecting increases of 5% on an underlying basis, 2% from acquisitions and 1% from the impact of foreign currency.

During 2018, Marsh initiated a program to simplify the organization through reduced management layers and more common structures across regions and businesses to more closely align with its more formalized segmentation strategy across large risk management, middle market corporate, and small commercial & personal segments. These efforts are expected to create increased efficiencies and additional capacity for reinvestment in people and technology. The Company incurred restructuring severance and consulting costs related to this initiative of $96 million in 2018.

During the year, restructuring and related charges increased underlying expenses by approximately 2%. The remaining increase in underlying expense was primarily due to higher base salaries and incentive compensation.

Expense in the Risk and Insurance Services segment increased 6% in 2017 compared with 2016, reflecting a 2% increase on an underlying basis and a 5% increase from acquisitions. The underlying expense increase is primarily due to higher base salaries and incentive compensation costs, partly offset by lower costs related to liabilities for errors and omissions.

Consulting

The Company conducts business in its Consulting segment through two main business groups, Mercer and Oliver Wyman Group. Mercer provides consulting expertise, advice, services and solutions in the areas of health, wealth and career. Oliver Wyman Group provides specialized management, economic and brand consulting services.

Effective January 1, 2017, Mercer merged its investment and retirement businesses into a newly-created wealth business. We believe this combination better aligns Mercer's investment management capabilities globally.

The major component of revenue in the Consulting business is fees paid by clients for advice and services. Mercer, principally through its health line of business, also earns revenue in the form of commissions received from insurance companies for the placement of group (and occasionally individual) insurance contracts, primarily life, health and accident coverages. Revenue for Mercer's investment management business and certain of Mercer's defined contribution administration services consists principally of fees based on assets under management or administration.

Revenue in the Consulting segment is affected by, among other things, global economic conditions, including changes in clients' particular industries and markets. Revenue is also affected by competition due to the introduction of new products and services, broad trends in employee demographics, including levels of employment, the effect of government policies and regulations, and fluctuations in interest and foreign exchange rates. Revenues from the provision of investment management services and retirement trust and administrative services are significantly affected by the level of assets under management or administration, which is impacted by securities market performance.

For the investment management business, revenues from the majority of funds are included on a gross basis in accordance with U.S. GAAP and include reimbursable expenses incurred by professional staff and sub-advisory fees, and the related expenses are included in other operating expenses.

The results of operations for the Consulting segment are presented below:

(In millions of dollars, except percentages)	**2018**	2017	2016
Revenue	**$ 6,779**	$ 6,444	$ 6,112
Compensation and Benefits	**3,760**	3,573	3,450
Other Operating Expenses	**1,920**	1,761	1,624
Operating Expenses	**5,680**	5,334	5,074
Operating Income	**$ 1,099**	$ 1,110	$ 1,038
Operating Income Margin	**16.2%**	17.2%	17.0%

Revenue

Consulting revenue in 2018 increased 5% compared with 2017, reflecting a 3% increase on an underlying basis, 1% growth from acquisitions and a 1% increase from the impact of foreign currency translation. The adoption of the new revenue recognition guidance did not have a significant impact on the timing of revenue recognition or the year-over-year amount of annual revenue in the segment in 2018.

Mercer's revenue in 2018 increased 5% over the prior year to $4.7 billion, or 3% on an underlying basis. Mercer's year over year revenue comparison also reflects an increases of 1% from acquisitions and 1% from the impact of foreign currency translation. The underlying revenue growth reflects an increase in Career of 5%, Health of 4% and Wealth of 1%. Within Wealth, Investment Management & Related Services increased 9% while Defined Benefit Consulting & Administration decreased 4% compared with the prior year. Oliver Wyman Group's revenue increased 7% in 2018 compared with 2017, or 5% on an underlying basis.

The Consulting segment completed eight acquisitions during 2018. Information regarding these acquisitions is included in Note 4 to the consolidated financial statements.

Consulting revenue in 2017 increased 5% compared with 2016, reflecting a 4% increase on an underlying basis and 2% growth from acquisitions. Mercer's revenue increased 5% to $4.5 billion over the prior year, or 2% on an underlying basis. Mercer's year over year revenue growth also reflects an increase of 2% from acquisitions. The underlying revenue growth reflects an increase in Career of 5%, Health of 2% and Wealth of 2%. Within Wealth, Investment Management & Related Services increased 10% while Defined Benefit Consulting & Administration decreased 2% compared with the prior year. Oliver Wyman Group's revenue increased 7% in 2017 compared with 2016, on both a reported and underlying basis.

The Consulting segment completed three acquisitions during 2017.

Expense

Consulting expense in 2018 increased 6% compared with 2017, reflecting increases of 5% on an underlying basis, 1% from the impact of acquisitions and 1% from the impact of foreign currency translation. The increase in underlying expense reflects higher base salaries, asset based fees and recoverable expenses and costs incurred of $51 million associated with a business restructuring at Mercer initiated in the fourth quarter of 2018. The Company expects to incur additional costs of approximately $20-30 million in 2019 related to this initiative.

Consulting expense in 2017 increased 5% compared with 2016, reflecting an increase of 3% on an underlying basis and a 3% increase from the impact of acquisitions. The increase in underlying expense reflects higher base salaries, asset based fees and outside service costs, partly offset by lower severance costs and lower costs related to liabilities for errors and omissions.

Corporate and Other

Corporate expense in 2018 was $202 million compared with $186 million in 2017. The increase in expense is primarily due to costs related to the pending acquisition of JLT.

Corporate expense in 2017 was $186 million compared with $188 million in 2016. The decrease in expense is primarily due to lower consulting, occupancy and general insurance costs.

Other Corporate Items

Interest

Interest income earned on corporate funds amounted to $11 million in 2018 compared with $9 million in 2017. Interest expense in 2018 was $290 million compared with $237 million in 2017. The increase in interest expense was primarily due to higher average debt outstanding in 2018 and bridge loan financing fees related to the pending acquisition of JLT.

Interest income earned on corporate funds amounted to $9 million in 2017 compared with $5 million in 2016. The decrease is due to the combined effects of a lower level of invested funds and lower interest rates. Interest expense in 2017 was $237 million compared with $189 million in 2016 due to higher average outstanding debt in 2017.

Investment Income

The caption "Investment income" in the consolidated statements of income comprises realized and unrealized gains and losses from investments. It includes, when applicable, other-than-temporary declines in the value of securities, mark-to-market increases/decreases in equity investments with readily determinable fair values and equity method gains or losses on its investments in private equity funds. The Company's investments may include direct investments in insurance, consulting or other strategically linked companies and investments in private equity funds.

As discussed in Note 1 to the consolidated financial statements, effective January 1, 2018, the Company prospectively adopted a new accounting standard that requires equity investments (except those accounted for under the equity method of accounting or those that result in consolidation of the investee) to be measured at fair value with changes in fair value recognized in net income. The Company holds certain equity investments that under legacy U.S. GAAP were previously treated as available for sale securities, whereby the mark-to-market change was recorded to other comprehensive income in its consolidated balance sheet. The Company recorded a cumulative-effect adjustment increase to retained earnings as of the beginning of the period of adoption of $14 million, reflecting the reclassification of cumulative unrealized gains, net of tax, as of December 31, 2017 from other comprehensive income to retained earnings. Therefore, prior periods have not been restated.

The Company recorded a net investment loss of $12 million in 2018. The net investment loss reflects the impact of an $83 million charge recorded in 2018 related to an other than temporary decline in the Company's equity method investment in Alexander Forbes (see Note 10 to the consolidated financial statements) partly offset by investment gains of $54 million related to mark-to-market changes in equity securities (discussed above) and $17 million related to investments in private equity funds and other investments. The Company recorded net investment income of $15 million in 2017 compared to less than $1 million in 2016. The increase in 2017 versus 2016 was primarily due to a gain on the sale of an investment and higher equity method gains related to the Company's investments in private equity funds.

Income Taxes

On December 22, 2017, the U.S. tax legislation commonly known as the "Tax Cuts and Jobs Act" (the "TCJA") significantly changed the U.S. Internal Revenue Code of 1986, as amended. The TCJA generally became effective on January 1, 2018. The TCJA provided for a reduction in the U.S. corporate tax rate to 21% and the creation of a new method of taxing non-U.S. based operations. The TCJA also changed the deductibility of certain expenses, primarily executive officers' compensation and interest. In the fourth quarter of 2017 the Company recorded a provisional charge of $460 million related to the enactment of the TCJA. As discussed in Note 7 to the consolidated financial statements, this provisional charge was adjusted in 2018.

The TCJA provided for a transition to a new method of taxing non-U.S. based operations via a transition tax on undistributed earnings of non-U.S. subsidiaries. The Company recorded a provisional charge of $240 million in the fourth quarter of 2017 as an estimate of U.S. transition taxes and ancillary effects, including state taxes and foreign withholding taxes related to the change in permanent reinvestment status with respect to our pre-2018 foreign earnings. This transition tax is payable over eight years. The reduction of the U.S. corporate tax rate from 35% to 21% reduced the value of the U.S. deferred tax assets and liabilities; accordingly, a charge of $220 million was recorded. Adjustments during 2018 to the provisional estimates of transition taxes and U.S. deferred tax assets and liabilities decreased income tax expense by $5 million. These amounts are now final, and the Company does not expect further adjustments to the initial provisional charge.

The Company's consolidated effective tax rate was 25.6%, 42.9%, and 27.6% in 2018, 2017 and 2016, respectively. The rate in 2018 reflects ongoing impacts of the TCJA, primarily the reduced 21% U.S. statutory tax rate and certain tax planning benefits, largely offset by higher estimated costs from the new method of taxing non-U.S. based operations, greater disallowance of compensation and entertainment deductions, the effect of a charge related to the Company’s investment in Alexander Forbes as discussed in Note 10 and a decrease in excess tax benefits related to share compensation primarily due to the lower U.S. tax rate. The rates in 2017 and 2016 reflect foreign operations taxed at rates below the 35% U.S. statutory tax rate, including the effect of repatriation. The tax rates in all periods reflect the impact of discrete tax matters, tax legislation, and nontaxable adjustments to contingent acquisition consideration.

The effective tax rate is sensitive to the geographic mix and repatriation of the Company's earnings, which may result in higher or lower tax rates. Thus, a shift in the mix of profits among jurisdictions can affect the effective tax rate. In 2018, pre-tax income in the U.K., Barbados, Canada, Australia, and Ireland accounted for approximately 60% of the Company's total non-U.S. pre-tax income, with effective rates in those countries of 26%, 1%, 28%, 27% and 10%, respectively.

The TCJA is expected to provide an ongoing benefit to our effective tax rate and U.S. cash tax liabilities due to the significantly lower U.S. statutory tax rate and the quasi-territorial system.

As a U.S. domiciled parent holding company, Marsh & McLennan Companies, Inc. is the issuer of essentially all of the Company's external indebtedness, and incurs the related interest expense in the U.S. Further, most senior executive and oversight functions are conducted in the U.S. and the associated costs are incurred primarily in the United States.

The mandatory taxation of accumulated undistributed foreign earnings through the transition tax substantially changed the economic considerations of continued permanent investment of those accumulated earnings, a key component of our global capital strategy. As a result of the transition tax, the Company anticipates repatriating most of the accumulated earnings that was previously intended to be permanently re-invested outside of the U.S. We continue to evaluate our global investment and repatriation strategy in light of expected relief from U.S. tax reform under the new quasi-territorial tax regime for future foreign earnings.

The effective tax rate may vary significantly from period to period for the foreseeable future. It is sensitive to the geographic mix of and repatriation of the Company's earnings, which may result in higher or lower effective tax rates. Losses in certain jurisdictions cannot be offset by earnings from other operations, and may require valuation allowances that affect the rate, depending on estimates of the realizability of associated deferred tax assets. The effective tax rate is also sensitive to changes in unrecognized tax benefits, including the impact of settled tax audits and expired statutes of limitation.

The realization of deferred tax assets depends on generating future taxable income during the periods in which the tax benefits are deductible or creditable. Tax liabilities are determined and assessed jurisdictionally by legal entity or filing group. Certain taxing jurisdictions allow or require combined or consolidated tax filings. The Company assessed the realizability of its deferred tax assets. The Company considered all available evidence, including the existence of a recent history of losses, placing particular weight on evidence that could be objectively verified. A valuation allowance was recorded to reduce deferred tax assets to the amount that the Company believes is more likely than not to be realized.

Changes in tax laws, rulings, policies or related legal and regulatory interpretations occur frequently and may also have significant favorable or adverse impacts on our effective tax rate.

Liquidity and Capital Resources

The Company is organized as a legal entity separate and distinct from its operating subsidiaries. As the Company does not have significant operations of its own, the Company is dependent upon dividends and other payments from its operating subsidiaries to pay principal and interest on its outstanding debt obligations, pay dividends to stockholders, repurchase its shares and pay corporate expenses. The Company can also provide financial support to its operating subsidiaries for acquisitions, investments and certain parts of their business that require liquidity, such as the capital markets business of Guy Carpenter. Other sources of liquidity include borrowing facilities discussed below in financing cash flows.

The Company derives a significant portion of its revenue and operating profit from operating subsidiaries located outside of the United States. Funds from those operating subsidiaries are regularly repatriated to the United States out of annual earnings. At December 31, 2018, the Company had approximately $917 million of cash and cash equivalents in its foreign operations, which includes $168 million of operating funds required to be maintained for regulatory requirements or as collateral under certain captive insurance arrangements. The Company expects to continue its practice of repatriating available funds from its non-U.S. operating subsidiaries out of current annual earnings. Where appropriate, a portion of the current year earnings will continue to be permanently reinvested. With respect to repatriating 2017 and prior earnings, the Company has evaluated such factors as its short- and long-term capital needs, acquisition and borrowing strategies, and the availability of cash for repatriation for each of its subsidiaries. The Company has determined that, in general, its permanent reinvestment assertions, in light of the enactment of the Tax Cuts and Jobs Act, should allow the Company to repatriate previously taxed earnings from the deemed repatriations as cash becomes available.

During 2018, the Company recorded foreign currency translation adjustments which decreased net equity by $529 million. Continued strengthening of the U.S. dollar against foreign currencies would further reduce the translated U.S. dollar value of the Company's net investments in its non-U.S. subsidiaries, as well as the translated U.S. dollar value of cash repatriations from those subsidiaries.

Cash on our consolidated balance sheets includes funds available for general corporate purposes. Funds held on behalf of clients in a fiduciary capacity are segregated and shown separately in the consolidated balance sheets as an offset to fiduciary liabilities. Fiduciary funds cannot be used for general corporate purposes, and should not be considered as a source of liquidity for the Company.

Operating Cash Flows

The Company generated $2.4 billion of cash from operations in 2018, compared with $1.9 billion in 2017. These amounts reflect the net income of the Company during those periods, excluding gains or losses from investments, adjusted for non-cash charges and changes in working capital which relate primarily to the timing of payments of accrued liabilities or receipts of assets and pension contributions.

Pension-Related Items

Contributions

During 2018, the Company contributed $30 million to its U.S. pension plans and $82 million to non-U.S. pension plans compared to contributions of $85 million to U.S. plans and $229 million to non-U.S. plans in 2017.

In the United States, contributions to the tax-qualified defined benefit plans are based on ERISA guidelines and the Company generally expects to maintain a funded status of 80% or more of the liability determined under the ERISA guidelines. In 2018 the Company made $30 million of contributions to its non-qualified plans. The Company expects to contribute approximately $28 million to its U.S. pension plans in 2019.

The Company contributed $21 million to the U.K. plans in 2018, including an expense allowance of approximately $9 million. Based on the funding test carried out at November 1, 2018, the Company contributions to the U.K. plans in 2019 are expected to be approximately $11 million, including the expense allowance.

Outside the United States, the Company has a large number of non-U.S. defined benefit pension plans, the largest of which are in the U.K., which comprise approximately 81% of non-U.S. plan assets at December 31, 2018. Contribution rates for non-U.S. plans are generally based on local funding practices and statutory requirements, which may differ significantly from measurements under U.S. GAAP. In the U.K., the assumptions used to determine pension contributions are the result of legally-prescribed negotiations between the Company and the plans' Trustee that typically occur every three years in conjunction with the actuarial valuation of the plans. Currently, this results in a lower funded status than under U.S. GAAP and may result in contributions irrespective of the U.S. GAAP funded status. In November 2016, the Company and the Trustee of the U.K. Defined Benefits Plans agreed to a funding deficit recovery plan for the U.K. defined benefit pension plans. The current agreement with the Trustee sets out the annual deficit contributions which would be due based on the deficit at December 31, 2015. The funding level is subject to re-assessment, in most cases on November 1 of each year. If the funding level on November 1 is sufficient, no deficit funding contributions will be required in the following year, and the contribution amount will be deferred. The funding level was re-assessed on November 1, 2018 and no deficit funding contributions are required in 2019. The funding level will be re-assessed on November 1, 2019. As part of a long-term strategy, which depends on having greater influence over asset allocation and overall investment decisions, in November 2016 the Company renewed its agreement to support annual deficit contributions by the U.K. operating companies under certain circumstances, up to GBP 450 million over a seven-year period.

In the aggregate, the Company expects to contribute approximately $65 million to its non-U.S. defined benefit plans in 2019, comprising approximately $54 million to plans outside of the U.K. and $11 million to the U.K. plans.

Changes to Pension Plans

In March 2017, the Company modified its defined benefit pension plans in Canada to discontinue further benefit accruals for participants after December 31, 2017 and replaced them with a defined contribution arrangement. The Company also amended its post-retirement benefits plan in Canada so that individuals who retire after April 1, 2019 will not be eligible to participate, except in certain situations. The Company re-measured the assets and liabilities of the plans, based on assumptions and market conditions on the amendment date.

In October 2016, the Company modified its U.S. defined benefit pension plans to discontinue further benefit accruals for participants after December 31, 2016. At the same time, the Company amended its U.S. defined contribution retirement plans for most of its U.S. employees to add an automatic Company contribution equal to 4% of eligible base pay beginning on January 1, 2017. This new Company contribution, together with the Company’s current matching contribution, provides eligible U.S. employees with the opportunity to receive a total contribution of up to 7% of eligible base pay. As required under GAAP, the defined benefit plans that were significantly impacted by the modification were re-measured in October 2016 using market data and assumptions as of the modification date. The net periodic pension expense recognized in 2016 reflects the weighted average costs of the December 31, 2015 measurement and the October 2016 re-measurement. In addition, the U.S. qualified plans were merged effective December 30, 2016, since no participants would be receiving benefit accruals after December 2016.

Changes in Funded Status and Expense

The year-over-year change in the funded status of the Company's pension plans is impacted by the difference between actual and assumed results, particularly with regard to return on assets, and changes in the discount rate, as well as the amount of Company contributions, if any. Unrecognized actuarial losses were approximately $1.9 billion and $2.6 billion at December 31, 2018 for the U.S. plans and non-U.S. plans, respectively, compared with $1.8 billion and $2.6 billion at December 31, 2017. The increase in the U.S. was primarily due to a decrease in asset values partly offset by the impact of an increase in the discount rate used to measure plan liabilities. The actuarial loss related to the non-U.S. plans was unchanged as a decrease in the value of the plans' assets was offset by the impact of increases in the discount rate used to measure the plans' liabilities, the impact of the U.K. settlement in the fourth quarter of 2018 discussed above and by the impact of foreign exchange translation. In the past several years, the amount of unamortized losses has been significantly impacted, both positively and negatively, by actual asset performance and changes in discount rates. The discount rate used to measure plan liabilities increased in both the U.S. and the U.K. (the Company's largest plans) in 2018. The discount rate used to measure plan liabilities decreased in 2017 and in 2016. The decreases in 2017 and 2016 followed an increase in 2015. An increase in the discount rate decreases the measured plan benefit obligation, resulting in actuarial gains, while a decrease in the discount rate increases the measured plan obligation, resulting in actuarial losses. During 2018, the Company's defined benefit pension plan assets had losses of 7.4% and 1.0% in the U.S. and U.K., respectively. During 2017, the Company's defined benefit pension plan assets had actual returns of 19.3% and 9.1% in the U.S. and U.K., respectively. During 2016, the Company's defined benefit pension plan assets had actual returns of 9.8% in the U.S. and 22.1% in the U.K.

Overall, based on the measurement at December 31, 2018, expenses related to the Company’s defined benefit plans are expected to decrease in 2019 by approximately $51 million compared to 2018, reflecting an increase in U.S. plans of $8 million and a decrease in non-U.S. plans of approximately $59 million, primarily in the U.K. The decrease in non-U.S. plans is primarily in the U.K., and reflects a lower charge for amortization of the net actuarial loss as well as the reduction in the 2018 net benefit credit by the $42 million settlement charge discussed previously. The recognition of a similar charge in 2019 and the amount of such a charge, if any, is dependent upon whether participant lump sum elections reach or exceed the settlement threshold.

Prior to 2016, service and interest costs were estimated using a single weighted average discount rate derived from the yield curves used to measure the benefit obligations at the beginning of the period. In 2016, the Company changed the approach used to estimate the service and interest cost components of net periodic benefit cost for its significant non-U.S. plans. This change in approach was made to improve the correlation between the projected benefit cash flows and the corresponding yield curve spot rates and to provide a more precise measurement of service and interest costs. The change did not impact the measurement of the plans’ total projected benefit obligation. The Company accounted for this change as a change in estimate, that was applied prospectively beginning in 2016 and resulted in pension expense being approximately $45 million lower in 2016 than if the prior approach had been used.

The Company’s accounting policies for its defined benefit pension plans, including the selection of and sensitivity to assumptions, are discussed below under Management’s Discussion of Critical Accounting Policies. For additional information regarding the Company’s retirement plans, see Note 8 to the consolidated financial statements.

Financing Cash Flows

Net cash used for financing activities was $1.3 billion in 2018 compared with $1.0 billion used in 2017.

Debt

The Company increased outstanding debt by approximately $340 million in 2018 and $680 million in 2017.

The Company has established a short-term debt financing program of up to $1.5 billion through the issuance of commercial paper. The proceeds from the issuance of commercial paper are used for general corporate purposes. The Company had no commercial paper outstanding at December 31, 2018.

In October 2018, the Company repaid $250 million of maturing senior notes.

In March 2018, the Company issued $600 million of 4.20% senior notes due 2048. The Company used the net proceeds for general corporate purposes.

In January 2017, the Company issued $500 million of 2.75% senior notes due in 2022 and $500 million of 4.35% senior notes due in 2047. The Company used the net proceeds for general corporate purposes, which included the repayment of a $250 million debt maturity in April 2017.

In March 2016, the Company issued $350 million of 3.30% seven-year senior notes. The Company used the net proceeds from this issuance for general corporate purposes.

Subsequent Event

As part of the Company’s planned financing for the proposed acquisition of JLT, the Company issued $5 billion aggregate amount of senior notes in January 2019. The various tranches consisted of $700 million of 3.50% senior notes due 2020, $1 billion of 3.875% senior notes due 2024, $1.25 billion of 4.375%

senior notes due 2029, $500 million of 4.75% senior notes due 2039, $1.25 billion of 4.90% senior notes due 2049 and $300 million floating rate senior notes due 2021. The Company intends to use the net proceeds to fund, in part, the pending acquisition of JLT, including the payment of related fees and expenses, and to repay certain JLT indebtedness.

Credit Facilities

On September 18, 2018, the Company entered into a bridge loan agreement to secure funding for the proposed JLT transaction. The Company paid approximately $35 million of customary upfront fees related to the bridge loan, which are being amortized as interest expense based on the period of time the facility is expected to be in effect (including any loans outstanding). The bridge loan agreement is discussed in more detail in Note 13 of the consolidated financial statements.

In October 2018, the Company and certain of its foreign subsidiaries increased its multi-currency five-year unsecured revolving credit facility from $1.5 billion to $1.8 billion. The interest rate on this facility is based on LIBOR plus a fixed margin which varies with the Company's credit ratings. This facility expires in October 2023 and requires the Company to maintain certain coverage and leverage ratios which are tested quarterly. There were no borrowings outstanding under this facility at December 31, 2018.

The Company also maintains other credit facilities, guarantees and letters of credit with various banks, aggregating $594 million at December 31, 2018 and $624 million at December 31, 2017. There were no outstanding borrowings under these facilities at December 31, 2018 or December 31, 2017.

The Company's senior debt is currently rated A- by Standard & Poor's and Baa1 by Moody's. The Company's short-term debt is currently rated A-2 by Standard & Poor's and P-2 by Moody's. The Company carries a negative outlook from both firms.

Share Repurchases

During 2018, the Company repurchased 8.2 million shares of its common stock for total consideration of $675 million at an average price per share of $82.61. In November 2016, the Board of Directors authorized an increase in the Company’s share repurchase program, which supersedes any prior authorization, allowing management to buy back up to $2.5 billion of the Company’s common stock. As of December 31, 2018, the Company remained authorized to purchase additional shares of its common stock up to a value of approximately $866 million. There is no time limit on this authorization.

During 2017, the Company repurchased 11.5 million shares of its common stock for total consideration of $900 million at an average price per share of $77.93.

Dividends

The Company paid total dividends of $807 million in 2018 ($1.58 per share), $740 million in 2017 ($1.43 per share) and $682 million in 2016 ($1.30 per share).

Contingent Payments Related To Acquisitions

During 2018, the Company paid $91 million of contingent payments related to acquisitions made in prior years. These payments are split between financing and operating cash flows in the consolidated statements of cash flows. Payments of $55 million related to the contingent consideration liability that was recorded on the date of acquisition are reflected as financing cash flows. Payments related to increases in the contingent consideration liability subsequent to the date of acquisition of $36 million are reflected as operating cash flows. Remaining estimated future contingent consideration payments of $183 million for acquisitions completed in 2018 and in prior years are included in accounts payable and accrued liabilities or other liabilities in the consolidated balance sheet at December 31, 2018. The Company paid deferred purchase consideration related to prior years' acquisitions of $62 million, $55 million and $54 million in the years ended December 31, 2018, 2017 and 2016, respectively. Remaining deferred cash payments of approximately $139 million are included in accounts payable and accrued liabilities or other liabilities in the consolidated balance sheet at December 31, 2018.

In 2017, the Company paid $108 million of contingent payments related to acquisitions made in prior periods, of which $81 million was reported as financing cash flows and $27 million as operating cash flows. In 2016, the Company made $86 million of contingent payments related to acquisitions made in prior periods, of which $44 million was reported as financing cash flows and $42 million as operating cash flows.

Derivatives

In connection with the JLT Transaction, to hedge the risk of appreciation of the GBP-denominated purchase price relative to the U.S. dollar, on September 20, 2018, the Company entered into the FX Contract to, solely upon consummation of the Transaction, purchase £5.2 billion and sell a corresponding amount of U.S dollars at a contracted exchange rate. The FX Contract is discussed in Note 11 to the consolidated financial statements. An unrealized loss of $325 million related to the change in fair value of this derivative has been recognized in the consolidated statement of income for year ended December 31, 2018, primarily related to the depreciation of the GBP. The FX Contract does not qualify for hedge accounting treatment under applicable accounting guidance. The Company expects to record fair value gains and losses, which may be significant, through its income statement until the completion of the Transaction.

In connection with the JLT Transaction, to hedge the risk of increases in future interest rates prior to its issuance of senior notes, in the fourth quarter of 2018, the Company entered into Treasury locks related to $2 billion of the expected debt. The fair value at December 31, 2018 is based on the published treasury rate plus forward premium as of December 31, 2018 compared to the all in rate at the inception of the contract. The contracts were not designated as an accounting hedge.The Company recorded an unrealized loss of $116 million related to the change in the fair value of these derivatives in the consolidated statement of income for the twelve months ended December 31, 2018. In January 2019, upon issuance of the $5 billion of senior notes, the Company settled the treasury lock derivatives and made a payment to its counter party for $122 million. An additional charge of $6 million will be recorded in the first quarter of 2019 related to the settlement of the Treasury lock derivatives.

Investing Cash Flows

Net cash used for investing activities amounted to $1.1 billion in 2018 compared with $956 million used for investing activities in 2017.

The Company paid $884 million and $655 million, net of cash acquired, for acquisitions it made during 2018 and 2017, respectively.

The Company's additions to fixed assets and capitalized software, which amounted to $314 million in 2018 and $302 million in 2017, primarily relate to computer equipment purchases, the refurbishing and modernizing of office facilities and software development costs.

The Company has commitments for potential future investments of approximately $43 million in four private equity funds that invest primarily in financial services companies.

Commitments and Obligations

The following sets forth the Company's future contractual obligations by the types identified in the table below as of December 31, 2018:

	Payment due by Period				
Contractual Obligations *(In millions of dollars)*	Total	Within 1 Year	1-3 Years	4-5 Years	After 5 Years
Current portion of long-term debt	$ 314	$ 314	$ —	$ —	$ —
Long-term debt	5,548	—	1,032	1,132	3,384
Interest on long-term debt	2,473	224	414	330	1,505
Net operating leases	2,071	329	574	447	721
Service agreements	259	189	51	15	4
Other long-term obligations	359	109	197	53	—
Total	$ 11,024	$ 1,165	$ 2,268	$ 1,977	$ 5,614

The chart does not include the senior notes issued in January 2019 discussed above. The above does not include the liability for unrecognized tax benefits of $78 million as the Company is unable to reasonably predict the timing of settlement of these liabilities, other than approximately $3 million that may become payable during 2019. The above does not include net pension liabilities of approximately $1.8 billion because the timing and amount of ultimate payment of such liability is dependent upon future events, including, but not limited to, future returns on plan assets and changes in the discount rate used to measure the liabilities. The above does not include the remaining transitional tax payments related to the TCJA of $171 million. The above does not include expected payments related to the pending acquisition of JLT. The amounts of estimated future benefits payments to be made from pension plan assets are disclosed in Note 8 to the consolidated financial statements. In 2019, the Company expects to contribute approximately $28 million and $65 million to its U.S. and non-U.S. defined benefit pension plans, respectively.

Management’s Discussion of Critical Accounting Policies

The preparation of financial statements in conformity with accounting principles generally accepted in the United States ("GAAP") requires management to make estimates and judgments that affect reported amounts of assets, liabilities, revenue and expenses, and disclosure of contingent assets and liabilities. Management considers the policies discussed below to be critical to understanding the Company’s financial statements because their application places the most significant demands on management’s judgment, and requires management to make estimates about the effect of matters that are inherently uncertain. Actual results may differ from those estimates.

Revenue Recognition

The adoption of the new revenue standard on January 1, 2018 has increased the significance of judgments and estimates management must make to apply the guidance. In particular, in the Risk and Insurance Services segment, judgments related to the amount of variable revenue consideration to ultimately be received on placement of quota share reinsurance treaties and contingent commission from insurers, which was previously recognized when the contingency was resolved, now requires significant judgments and estimates.

Under the new standard, certain costs to obtain or fulfill a contract that were previously expensed as incurred have been capitalized. The Company capitalizes the incremental costs to obtain contracts primarily related to commissions or sales bonus payments. These deferred costs are amortized over the expected life of the underlying customer relationships. The Company also capitalizes certain pre-placement costs that are considered fulfillment costs that are amortized at a point in time when the associated revenue is recognized.

Management also makes significant judgments and estimates to measure the progress toward completing performance obligations and realization rates for consideration related to contracts as well as potential performance-based fees in the Consulting segment.

See Note 2 to the consolidated financial statements for additional information.

Legal and Other Loss Contingencies

The Company and its subsidiaries are subject to numerous claims, lawsuits and proceedings including claims for errors and omissions ("E&O"). GAAP requires that a liability be recorded when a loss is both probable and reasonably estimable. Significant management judgment is required to apply this guidance. The Company utilizes case level reviews by inside and outside counsel, an internal actuarial analysis by Oliver Wyman Group, a subsidiary of the Company, and other methods to estimate potential losses. The liability is reviewed quarterly and adjusted as developments warrant. In many cases, the Company has not recorded a liability, other than for legal fees to defend the claim, because we are unable, at the present time, to make a determination that a loss is both probable and reasonably estimable. Given the unpredictability of E&O claims and of litigation that could flow from them, it is possible that an adverse outcome in a particular matter could have a material adverse effect on the Company’s businesses, results of operations, financial condition or cash flow in a given quarterly or annual period.

In addition, to the extent that insurance coverage is available, significant management judgment is required to determine the amount of recoveries that are probable of collection under the Company’s various insurance programs.

Retirement Benefits

The Company maintains qualified and non-qualified defined benefit pension and defined contribution plans for its eligible U.S. employees and a variety of defined benefit and defined contribution plans for its eligible non-U.S. employees. The Company’s policy for funding its tax-qualified defined benefit retirement plans is to contribute amounts at least sufficient to meet the funding requirements set forth in U.S. and applicable foreign laws.

The Company recognizes the funded status of its over-funded defined benefit pension and retiree medical plans as a net benefit plan asset and its unfunded and underfunded plans as a net benefit plan liability. The gains or losses and prior service costs or credits that have not been recognized as components of net periodic costs are recorded as a component of Accumulated Other Comprehensive Income ("AOCI"), net of tax, in the Company's consolidated balance sheets. The gains and losses that exceed specified corridors are amortized prospectively out of AOCI over a period that approximates the remaining life expectancy of participants in plans where substantially all participants are inactive or the average remaining service period of active participants for plans with active participants. The vast majority of unrecognized losses relate to inactive plans and are amortized over the remaining life expectancy of the participants.

The determination of net periodic pension cost is based on a number of assumptions, including an expected long-term rate of return on plan assets, the discount rate, mortality and assumed rate of salary increase. The assumptions used in the calculation of net periodic pension costs and pension liabilities are disclosed in Note 8 to the consolidated financial statements. The assumptions for expected rate of return on plan assets and the discount rate are discussed in more detail below.

The long-term rate of return on plan assets assumption is determined for each plan based on the facts and circumstances that exist as of the measurement date, and the specific portfolio mix of each plan's assets. The Company utilizes a model developed by Mercer, a subsidiary of the Company, to assist in the determination of this assumption. The model takes into account several factors, including: actual and target portfolio allocation; investment, administrative and trading expenses incurred directly by the plan trust; historical portfolio performance; relevant forward-looking economic analysis; and expected returns, variances and correlations for different asset classes. These measures are used to determine probabilities using standard statistical techniques to calculate a range of expected returns on the portfolio.

The target asset allocation for the U.S. Plans is 64% equities and equity alternatives and 36% fixed income. At December 31, 2018, the actual allocation for the U.S. Plans was 62% equities and equity alternatives and 38% fixed income. At the end of 2018, the target asset allocation for the U.K. Plans, which comprise approximately 81% of non-U.S. Plan assets, was 34% equities and equity alternatives and 66% fixed income. At December 31, 2018, the actual allocation for the U.K. Plans was 34% equities and equity alternatives and 66% fixed income.

The discount rate selected for each U.S. Plan is based on a model bond portfolio with coupons and redemptions that closely match the expected liability cash flows from the plan. Discount rates for non-U.S. plans are based on appropriate bond indices adjusted for duration; in the U.K., the plan duration is reflected using the Mercer yield curve.

The table below shows the weighted average assumed rate of return and the discount rate at the December 31, 2018 measurement date (for measuring pension expense in 2019) for the total Company, the U.S. and the Rest of World ("ROW").

	Total Company	U.S.	ROW
Assumed Rate of Return on Plan Assets	5.74%	7.95%	4.87%
Discount Rate	3.48%	4.45%	2.89%

Holding all other assumptions constant, a half-percentage point change in the rate of return on plan assets and discount rate assumptions would affect net periodic pension cost for the U.S. and U.K. plans, which together comprise approximately 84% of total pension plan liabilities, as follows:

	0.5 Percentage Point Increase		0.5 Percentage Point Decrease	
(In millions of dollars)	U.S.	U.K.	U.S.	U.K.
Assumed Rate of Return on Plan Assets	$ (22)	$ (40)	$ 22	$ 40
Discount Rate	$ (1)	$ (4)	$ —	$ 3

The impact of discount rate changes shown above relates to the increase or decrease in actuarial gains or losses being amortized through net periodic pension cost, as well as the increase or decrease in interest expense, with all other facts and assumptions held constant. It does not contemplate nor include potential future impacts a change in the interest rate environment and discount rates might cause, such as the impact on the market value of the plans' assets. Changing the discount rate and leaving the other assumptions constant also may not be representative of the impact on expense, because the long-term rates of inflation and salary increases are often correlated with the discount rate. Changes in these assumptions will not necessarily have a linear impact on the net periodic pension cost.

The Company contributes to certain health care and life insurance benefits provided to its retired employees. The cost of these post-retirement benefits for employees in the U.S. is accrued during the period up to the date employees are eligible to retire, but is funded by the Company as incurred. The key assumptions and sensitivity to changes in the assumed health care cost trend rate are discussed in Note 8 to the consolidated financial statements.

Income Taxes

The Company's tax rate reflects its income, statutory tax rates and tax planning in the various jurisdictions in which it operates. In 2017, the Company's tax expense was significantly impacted by the enactment of the TCJA, which is discussed in more detail in Note 7 to the consolidated financial statements included in this report. Significant judgment is required in determining the annual effective tax rate and in evaluating uncertain tax positions. The Company reports a liability for unrecognized tax benefits resulting from uncertain tax positions taken or expected to be taken in a tax return. The evaluation of a tax position is a two-step process. The first step involves recognition. The Company determines whether it is more likely than not that a tax position will be sustained upon tax examination, including resolution of any related appeals or litigation, based on only the technical merits of the position. The technical merits of a tax position derive from both statutory and judicial authority (legislation and statutes, legislative intent, regulations, rulings, and case law) and their applicability to the facts and circumstances of the tax position. If a tax position does not meet the more-likely-than-not recognition threshold, the benefit of that position is not recognized in the financial statements. The second step is measurement. A tax position that meets the more-likely-than-not recognition threshold is measured to determine the amount of benefit to recognize in the financial statements. The tax position is measured as the largest amount of benefit that is greater than 50 percent likely of being realized upon ultimate resolution with a taxing authority. Uncertain tax positions are evaluated based upon the facts and circumstances that exist at each reporting period and involve significant management judgment. Subsequent changes in judgment based upon new information may lead to changes in recognition, derecognition, and measurement. Adjustments may result, for example, upon resolution of an issue with the taxing authorities, or expiration of a statute of limitations barring an assessment for an issue.

Certain items are included in the Company's tax returns at different times than the items are reflected in the financial statements. As a result, the annual tax expense reflected in the consolidated statements of income is different than that reported in the tax returns. Some of these differences are permanent, such as expenses that are not deductible in the returns, and some differences are temporary and reverse over time, such as depreciation expense. Temporary differences create deferred tax assets and liabilities, which are measured at existing tax rates. Deferred tax liabilities generally represent tax expense recognized in the financial statements for which payment has been deferred, or expense for which a deduction has been taken already in the tax return but the expense has not yet been recognized in the financial statements. Deferred tax assets generally represent items that can be used as a tax deduction or credit in tax returns in future years for which a benefit has already been recorded in the financial statements. The Company evaluates all significant available positive and negative evidence, including the existence of losses in recent years and its forecast of future taxable income by jurisdiction, in assessing the need for a valuation allowance. The Company also considers tax planning strategies that would result in realization of deferred tax assets, and the presence of taxable income in prior period tax filings in jurisdictions that allow for the carryback of tax attributes pursuant to the applicable tax law. The underlying assumptions the Company uses in forecasting future taxable income require significant judgment and take into account the Company's recent performance. The ultimate realization of deferred tax assets is dependent on the generation of future taxable income during the periods in which temporary differences or carry-forwards are deductible or creditable. Valuation allowances are established for deferred tax assets when it is estimated that it is more likely than not that future taxable income will be insufficient to fully use a deduction or credit in that jurisdiction.

Fair Value Determinations

Goodwill Impairment Testing – The Company is required to assess goodwill and any indefinite-lived intangible assets for impairment annually, or more frequently if circumstances indicate impairment may have occurred. The Company performs the annual impairment test for each of its reporting units during the third quarter of each year. In accordance with applicable accounting guidance, the Company assesses qualitative factors to determine whether it is necessary to perform the two-step goodwill impairment test. The Company considered numerous factors, which included that the fair value of each reporting unit exceeded its carrying value by a substantial margin in its most recent estimate of reporting unit fair values, whether significant acquisitions or dispositions occurred which might alter the fair value of its reporting units, macroeconomic conditions and their potential impact on reporting unit fair values, actual performance compared with budget and prior projections used in its estimation of reporting unit fair values, industry and market conditions, and the year-over-year change in the Company's share price.

The Company completed its qualitative assessment in the third quarter of 2018 and concluded that a two-step goodwill impairment test was not required in 2018 and that goodwill was not impaired.

Share-Based Payment

The guidance for accounting for share-based payments requires, among other things, that the estimated fair value of stock options be charged to earnings. Significant management judgment is required to determine the appropriate assumptions for inputs such as volatility and expected term necessary to estimate option values. In addition, management judgment is required to analyze the terms of the plans and awards granted thereunder to determine if awards will be treated as equity awards or liability awards, as defined by the accounting guidance.

As of December 31, 2018, there was $17 million of unrecognized compensation cost related to stock option awards. The weighted-average period over which the costs are expected to be recognized is 1.24 years. Also as of December 31, 2018, there was $238.9 million of unrecognized compensation cost related to the Company's restricted stock, restricted stock unit and performance stock unit awards. The weighted-average period over which that cost is expected to be recognized is approximately 1.02 years.

See Note 9 to the consolidated financial statements for additional information regarding accounting for share-based payments.

Investments and Derivatives

Although not directly recorded in the Company's consolidated balance sheets, the Company's defined benefit pension plans hold investments of approximately $14.4 billion, which include private equity and other non-liquid investments. The fair value of the plan investments determines, in part, the over-or under-funded status of those plans, which is included in the Company's consolidated balance sheets. The Company also has minority positions in certain equity securities (primarily Alexander Forbes) as well as approximately $80 million of investments in private equity funds accounted for using the equity method of accounting.

The Company reviews the carrying value of its investments (both direct and held through its pension plans) to determine if any valuation adjustments are appropriate under the applicable accounting pronouncements. The Company bases its review on the facts and circumstances as they relate to each investment. In those instances where quoted market prices are not available, particularly for private equity funds, significant management judgment is required to determine the appropriate value of the Company's investments. Fair value of investments in private equity funds is determined by the funds' investment managers. Factors considered in determining the fair value of private equity investments include: implied valuation of recently completed financing rounds that included sophisticated outside investors; performance multiples of comparable public companies; restrictions on the sale or disposal of the investments; trading characteristics of the securities; and the relative size of the holdings in comparison to other private investors and the public market float.

In connection with the JLT Transaction, the Company entered into several derivative contracts, described in Note 11 to the consolidated financial statements. These derivative contracts are recorded at fair value at the end of each period, with the change in fair value recorded in the consolidated statements of income. Determining the fair value of these contracts, in particular the deal contingent foreign exchange contract, requires significant management judgments or estimates about the potential closing dates of the transaction and remaining value of the deal contingency feature.

New Accounting Pronouncements

Note 1 to the consolidated financial statements contains a summary of the Company’s significant accounting policies, including a discussion of recently issued accounting pronouncements and their impact or potential future impact on the Company’s financial results, if determinable, under the sub-heading "New Accounting Pronouncements".

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

Market Risk and Credit Risk

Certain of the Company's revenues, expenses, assets and liabilities are exposed to the impact of interest rate changes and fluctuations in foreign currency exchange rates and equity markets.

Interest Rate Risk and Credit Risk

Interest income generated from the Company's cash investments as well as invested fiduciary funds will vary with the general level of interest rates.

The Company had the following investments subject to variable interest rates:

(In millions of dollars)		December 31, 2018
Cash and cash equivalents invested in money market funds, certificates of deposit and time deposits	$	1,066
Fiduciary cash and investments	$	5,001

Based on the above balances, if short-term interest rates increased or decreased by 10%, or 15 basis points, over the full year, annual interest income, including interest earned on fiduciary funds, would increase or decrease by approximately $6 million.

In addition to interest rate risk, our cash investments and fiduciary fund investments are subject to potential loss of value due to counter-party credit risk. To minimize this risk, the Company and its subsidiaries invest pursuant to a Board approved investment policy. The policy mandates the preservation of principal and liquidity and requires broad diversification with counter-party limits assigned based primarily on credit rating and type of investment. The Company carefully monitors its cash and fiduciary fund investments and will further restrict the portfolio as appropriate to market conditions. The majority of cash and fiduciary fund investments are invested in short-term bank deposits and liquid money market funds.

Foreign Currency Risk

The translated values of revenue and expense from the Company's international operations are subject to fluctuations due to changes in currency exchange rates. The non-U.S. based revenue that is exposed to foreign exchange fluctuations is approximately 52% of total revenue. We periodically use forward contracts and options to limit foreign currency exchange rate exposure on net income and cash flows for specific, clearly defined transactions arising in the ordinary course of business. Although the Company has significant revenue generated in foreign locations which is subject to foreign exchange rate fluctuations, in most cases both the foreign currency revenue and expenses are in the functional currency of the foreign location. As such, under normal circumstances, the U.S. dollar translation of both the revenues and expenses, as well as the potentially offsetting movements of various currencies against the U.S. dollar, generally tends to mitigate the impact on net operating income of foreign currency risk. However, there have been periods where the impact was not mitigated due to external market factors, and external macroeconomic events, such as uncertainty regarding the impact of "Brexit" in the United Kingdom, may result in greater foreign exchange rate fluctuations in the future. If foreign exchange rates of major currencies (Euro, Sterling, Australian dollar and Canadian dollar) moved 10% in the same direction against the U.S. dollar compared with the foreign exchange rates in 2018, the Company estimates net operating income would increase or decrease by approximately $56 million. The Company has exposure to approximately 80 foreign currencies overall. In Continental Europe, the largest amount of revenue from renewals for the Risk & Insurance Services segment occurs in the first quarter.

JLT Transaction

The purchase price of the JLT Transaction is denominated in GBP. To hedge the risk of appreciation in GBP, the Company entered into an FX Contract in September 2018, which is discussed in Note 11 to the consolidated financial statements. For each 1% increase or decrease in the GBP/U.S. dollar exchange rate, the fair value of the FX Contract will increase (dollar weakens) or decrease (dollar strengthens) by approximately $70 million.

Equity Price Risk

As discussed in Note 18 to the consolidated financial statements, effective January 1, 2018, the Company adopted a new accounting standard that requires equity investments with readily determinable market values to be measured at fair value with changes in fair value recognized in net income.

The Company holds investments in both public and private companies as well as private equity funds, including investments of approximately $146 million that are valued using readily determinable fair values and approximately $75 million of investments without readily determinable fair values. The Company also has investments of approximately $287 million that are accounted for using the equity method, including the Company's investment in Alexander Forbes. The investments are subject to risk of decline in market value, which, if determined to be other than temporary for assets without readily determinable fair values, could result in realized impairment losses. The Company periodically reviews the carrying value of such investments to determine if any valuation adjustments are appropriate under the applicable accounting pronouncements.

The Company owns approximately 33% of the common stock of Alexander Forbes, a South African company listed on the Johannesburg Stock Exchange, which it purchased in 2014 for 7.50 South African Rand per share. The shares of AF have been trading below the Company's carrying value since November of 2017, but had traded within 10% of the Company's carrying value through much of the first quarter of 2018. In May 2018, the trading price declined to 30% to 35% below the Company's cost and remained at the discounted level through the third quarter of 2018. The Company considered several factors in assessing the carrying value of its investment in AF, including its financial position, the near- and long-term prospects of AF and the broader South African economy and capital markets, the length of time and extent to which the market value was below cost and the Company's intent and ability to retain the investment for a sufficient period of time to allow for anticipated recovery in market value. However, based on the duration of time and the extent to which the shares traded below their cost, the Company could not develop sufficient objective evidence to support a recovery of the price in the relatively near future. As such, the Company concluded the decline in value of the investment was other than temporary and recorded a charge of $83 million in 2018. As of December 31, 2018, the carrying value of the Company's investment in Alexander Forbes was approximately $144 million. As of December 31, 2018, the market value of the approximately 443 million shares of Alexander Forbes owned by the Company, based on the December 31, 2018 closing share price of 5.14 South African Rand per share, was approximately $159 million.

Other

A number of lawsuits and regulatory proceedings are pending. See Note 16 ("Claims, Lawsuits and Other Contingencies") to the consolidated financial statements included in this report.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

MARSH & McLENNAN COMPANIES, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF INCOME

For the Years Ended December 31, *(In millions, except per share figures)*	**2018**	2017	2016
Revenue	**$ 14,950**	$ 14,024	$ 13,211
Expense:			
Compensation and benefits	**8,605**	8,085	7,694
Other operating expenses	**3,584**	3,284	3,086
Operating expenses	**12,189**	11,369	10,780
Operating income	**2,761**	2,655	2,431
Other net benefits credits	**215**	201	233
Interest income	**11**	9	5
Interest expense	**(290)**	(237)	(189)
Investment (loss) income	**(12)**	15	—
Acquisition related derivative contracts	**(441)**	—	—
Income before income taxes	**2,244**	2,643	2,480
Income tax expense	**574**	1,133	685
Income from continuing operations	**1,670**	1,510	1,795
Discontinued operations, net of tax	**—**	2	—
Net income before non-controlling interests	**1,670**	1,512	1,795
Less: Net income attributable to non-controlling interests	**20**	20	27
Net income attributable to the Company	**$ 1,650**	$ 1,492	$ 1,768
Basic net income per share			
– Continuing operations	**$ 3.26**	$ 2.91	$ 3.41
– Net income attributable to the Company	**$ 3.26**	$ 2.91	$ 3.41
Diluted net income per share			
– Continuing operations	**$ 3.23**	$ 2.87	$ 3.38
– Net income attributable to the Company	**$ 3.23**	$ 2.87	$ 3.38
Average number of shares outstanding			
– Basic	**506**	513	519
– Diluted	**511**	519	524
Shares outstanding at December 31,	**504**	509	514

The accompanying notes are an integral part of these consolidated statements.

MARSH & McLENNAN COMPANIES, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

For the Years Ended December 31, *(In millions)*	**2018**	2017	2016
Net income before non-controlling interests	**$ 1,670**	$ 1,512	$ 1,795
Other comprehensive (loss) income, before tax:			
Foreign currency translation adjustments	**(529)**	717	(742)
Unrealized investment (loss) income	**—**	(7)	21
(Loss) gain related to pension/post-retirement plans	**(91)**	408	(119)
Other comprehensive (loss) income, before tax	**(620)**	1,118	(840)
Income tax (credit) expense on other comprehensive (loss) income	**(30)**	68	33
Other comprehensive (loss) income, net of tax	**(590)**	1,050	(873)
Comprehensive income	**1,080**	2,562	922
Less: Comprehensive income attributable to non-controlling interests	**20**	20	27
Comprehensive income attributable to the Company	**$ 1,060**	$ 2,542	$ 895

The accompanying notes are an integral part of these consolidated statements.

MARSH & McLENNAN COMPANIES, INC. AND SUBSIDIARIES

CONSOLIDATED BALANCE SHEETS

December 31, *(In millions, except share figures)*	2018	2017
ASSETS		
Current assets:		
Cash and cash equivalents	$ 1,066	$ 1,205
Receivables		
Commissions and fees	3,984	3,777
Advanced premiums and claims	79	65
Other	366	401
	4,429	4,243
Less-allowance for doubtful accounts and cancellations	(112)	(110)
Net receivables	4,317	4,133
Other current assets	551	224
Total current assets	5,934	5,562
Goodwill	9,599	9,089
Other intangible assets	1,437	1,274
Fixed assets, net	701	712
Pension related assets	1,688	1,693
Deferred tax assets	680	669
Other assets	1,539	1,430
	$ 21,578	$ 20,429
LIABILITIES AND EQUITY		
Current liabilities:		
Short-term debt	$ 314	$ 262
Accounts payable and accrued liabilities	2,234	2,083
Accrued compensation and employee benefits	1,778	1,718
Acquisition related derivatives	441	—
Accrued income taxes	157	199
Total current liabilities	4,924	4,262
Fiduciary liabilities	5,001	4,847
Less – cash and investments held in a fiduciary capacity	(5,001)	(4,847)
	—	—
Long-term debt	5,510	5,225
Pension, postretirement and postemployment benefits	1,911	1,888
Liability for errors and omissions	287	301
Other liabilities	1,362	1,311
Commitments and contingencies	—	—
Equity:		
Preferred stock, $1 par value, authorized 6,000,000 shares, none issued	—	—
Common stock, $1 par value, authorized 1,600,000,000 shares, issued 560,641,640 shares at December 31, 2018 and December 31, 2017	561	561
Additional paid-in capital	817	784
Retained earnings	14,347	13,140
Accumulated other comprehensive loss	(4,647)	(4,043)
Non-controlling interests	73	83
	11,151	10,525
Less – treasury shares, at cost, 56,804,468 shares at December 31, 2018 and 51,930,135 shares at December 31, 2017	(3,567)	(3,083)
Total equity	7,584	7,442
	$ 21,578	$ 20,429

The accompanying notes are an integral part of these consolidated statements.

MARSH & McLENNAN COMPANIES, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS

For the Years Ended December 31, *(In millions)*	**2018**	2017	2016
Operating cash flows:			
Net income before non-controlling interests	**$ 1,670**	$ 1,512	$ 1,795
Adjustments to reconcile net income to cash provided by operations:			
Depreciation and amortization of fixed assets and capitalized software	**311**	312	308
Amortization of intangible assets	**183**	169	130
Adjustments and payments related to contingent consideration liability	**(4)**	(24)	(33)
Loss (gain) on deconsolidation of entity	**11**	—	(11)
(Benefit) Provision for deferred income taxes	**(39)**	396	68
Loss (Gain) on investments	**12**	(15)	—
(Gain) Loss on disposition of assets	**(48)**	10	6
Share-based compensation expense	**193**	149	109
Change in fair value of acquisition-related derivative contracts	**441**	—	—
Changes in assets and liabilities:			
Net receivables	**(78)**	(454)	(154)
Other current assets	**26**	(3)	(9)
Other assets	**(37)**	(199)	34
Accounts payable and accrued liabilities	**23**	87	55
Accrued compensation and employee benefits	**68**	63	2
Accrued income taxes	**(40)**	37	(21)
Contributions to pension and other benefit plans in excess of current year expense/credit	**(291)**	(457)	(279)
Other liabilities	**9**	406	(97)
Effect of exchange rate changes	**18**	(96)	104
Net cash provided by operations	**2,428**	1,893	2,007
Financing cash flows:			
Purchase of treasury shares	**(675)**	(900)	(800)
Net increase in commercial paper	**—**	—	50
Proceeds from issuance of debt	**591**	987	347
Repayments of debt	**(263)**	(315)	(12)
Payment of bridge loan fees	**(35)**	—	—
Shares withheld for taxes on vested units – treasury shares	**(67)**	(49)	(39)
Issuance of common stock from treasury shares	**93**	166	188
Payments of deferred and contingent consideration for acquisitions	**(117)**	(136)	(98)
Distributions of non-controlling interests	**(30)**	(22)	(21)
Dividends paid	**(807)**	(740)	(682)
Net cash used for financing activities	**(1,310)**	(1,009)	(1,067)
Investing cash flows:			
Capital expenditures	**(314)**	(302)	(253)
Net sales (purchases) of long-term investments	**4**	(13)	2
Proceeds from sales of fixed assets	**3**	8	4
Dispositions	**110**	—	—
Acquisitions	**(884)**	(655)	(813)
Other, net	**(8)**	6	4
Net cash used for investing activities	**(1,089)**	(956)	(1,056)
Effect of exchange rate changes on cash and cash equivalents	**(168)**	251	(232)
(Decrease) Increase in cash and cash equivalents	**(139)**	179	(348)
Cash and cash equivalents at beginning of year	**1,205**	1,026	1,374
Cash and cash equivalents at end of year	**$ 1,066**	$ 1,205	$ 1,026

The accompanying notes are an integral part of these consolidated statements.

MARSH & McLENNAN COMPANIES, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF EQUITY

For the Years Ended December 31, *(In millions, except per share figures)*	**2018**	2017	2016
COMMON STOCK			
Balance, beginning and end of year	**$ 561**	$ 561	$ 561
ADDITIONAL PAID-IN CAPITAL			
Balance, beginning of year	**$ 784**	$ 842	$ 861
Change in accrued stock compensation costs	**66**	63	44
Issuance of shares under stock compensation plans and employee stock purchase plans and related tax impact	**(35)**	(120)	(63)
Other	**2**	(1)	—
Balance, end of year	**$ 817**	$ 784	$ 842
RETAINED EARNINGS			
Balance, beginning of year	**$ 13,140**	$ 12,388	$ 11,302
Net income attributable to the Company	**1,650**	1,492	1,768
Cumulative effect of adoption of the revenue recognition standard (See Note 1)	**364**	—	—
Cumulative effect of adoption of other accounting standards (See Note 1)	**—**	—	—
Dividend equivalents declared - (per share amounts: $1.58 in 2018, $1.43 in 2017, and $1.30 in 2016)	**(7)**	(6)	(7)
Dividends declared – (per share amounts: $1.58 in 2018, $1.43 in 2017, and $1.30 in 2016)	**(800)**	(734)	(675)
Balance, end of year	**$ 14,347**	$ 13,140	$ 12,388
ACCUMULATED OTHER COMPREHENSIVE LOSS			
Balance, beginning of year	**$ (4,043)**	$ (5,093)	$ (4,220)
Cumulative effect of adoption of the financial instruments standard (See Note 1)	**(14)**	—	—
Other comprehensive (loss) income, net of tax	**(590)**	1,050	(873)
Balance, end of year	**$ (4,647)**	$ (4,043)	$ (5,093)
TREASURY SHARES			
Balance, beginning of year	**$ (3,083)**	$ (2,506)	$ (1,991)
Issuance of shares under stock compensation plans and employee stock purchase plans	**191**	323	285
Purchase of treasury shares	**(675)**	(900)	(800)
Balance, end of year	**$ (3,567)**	$ (3,083)	$ (2,506)
NON-CONTROLLING INTERESTS			
Balance, beginning of year	**$ 83**	$ 80	$ 89
Net income attributable to non-controlling interests	**20**	20	27
Distributions and other changes	**(30)**	(17)	(22)
Deconsolidation of subsidiary	**—**	—	(14)
Balance, end of year	**$ 73**	$ 83	$ 80
TOTAL EQUITY	**$ 7,584**	$ 7,442	$ 6,272

The accompanying notes are an integral part of these consolidated statements.

1. Summary of Significant Accounting Policies

Nature of Operations: Marsh & McLennan Companies, Inc. (the "Company"), a global professional services firm, is organized based on the different services that it offers. Under this structure, the Company's two business segments are Risk and Insurance Services and Consulting.

The Risk and Insurance Services segment provides risk management solutions, services, advice and insurance broking, reinsurance broking and insurance program management services for businesses, public entities, insurance companies, associations, professional services organizations, and private clients. The Company conducts business in this segment through Marsh and Guy Carpenter.

The Company conducts business in its Consulting segment through Mercer and Oliver Wyman Group. Mercer provides consulting expertise, advice, services and solutions in the areas of health, wealth and career consulting services and products. Oliver Wyman Group provides specialized management and economic and brand consulting services.

Acquisitions impacting the Risk and Insurance Services and Consulting segments are discussed in Note 5 below.

Principles of Consolidation: The accompanying consolidated financial statements include all wholly-owned and majority-owned subsidiaries. All significant inter-company transactions and balances have been eliminated.

Fiduciary Assets and Liabilities: In its capacity as an insurance broker or agent, generally the Company collects premiums from insureds and after deducting its commissions, remits the premiums to the respective insurance underwriters. The Company also collects claims or refunds from underwriters on behalf of insureds. Unremitted insurance premiums and claims proceeds are held by the Company in a fiduciary capacity. Risk and Insurance Services revenue includes interest on fiduciary funds of $65 million, $39 million and $26 million in 2018, 2017 and 2016, respectively. The Consulting segment recorded fiduciary interest income of $3 million, $4 million and $3 million in 2018, 2017 and 2016, respectively. Since fiduciary assets are not available for corporate use, they are shown in the consolidated balance sheets as an offset to fiduciary liabilities.

Net uncollected premiums and claims and the related payables were $7.3 billion and $6.8 billion at December 31, 2018 and 2017, respectively. The Company is not a principal to the contracts under which the right to receive premiums or the right to receive reimbursement of insured losses arises. Accordingly, net uncollected premiums and claims and the related payables are not assets and liabilities of the Company and are not included in the accompanying consolidated balance sheets.

In certain instances, the Company advances premiums, refunds or claims to insurance underwriters or insureds prior to collection. These advances are made from corporate funds and are reflected in the accompanying consolidated balance sheets as receivables.

Mercer manages assets in trusts or funds for which Mercer's management or trustee fee is not considered a variable interest, since the fees are commensurate with the level of effort required to provide those services. Mercer is not the primary beneficiary of these trusts or funds. Mercer's maximum exposure to loss of its interests is, therefore, limited to collection of its fees.

Revenue: The Company provides detailed discussion regarding its revenue policies in Note 2 to the consolidated financial statements

Cash and Cash Equivalents: Cash and cash equivalents primarily consist of certificates of deposit and time deposits, with original maturities of three months or less, and money market funds. The estimated fair value of the Company's cash and cash equivalents approximates their carrying value. The Company is required to maintain operating funds primarily related to regulatory requirements outside the United States or as collateral under captive insurance arrangements. At December 31, 2018, the Company maintained $186 million related to these regulatory requirements.

Fixed Assets: Fixed assets are stated at cost less accumulated depreciation and amortization. Expenditures for improvements are capitalized. Upon sale or retirement of an asset, the cost and related accumulated depreciation and amortization are removed from the accounts and any gain or loss is reflected in income. Expenditures for maintenance and repairs are charged to operations as incurred.

Depreciation of buildings, building improvements, furniture, and equipment is provided on a straight-line basis over the estimated useful lives of these assets. Furniture and equipment is depreciated over periods ranging from three to ten years. Leasehold improvements are amortized on a straight-line basis over the periods covered by the applicable leases or the estimated useful life of the improvement, whichever is less. Buildings are depreciated over periods ranging from thirty to forty years. The Company periodically reviews long-lived assets for impairment whenever events or changes indicate that the carrying value of assets may not be recoverable.

The components of fixed assets are as follows:

December 31, *(In millions of dollars)*	**2018**	2017
Furniture and equipment	**$ 1,159**	$ 1,179
Land and buildings	**377**	385
Leasehold and building improvements	**1,007**	974
	2,543	2,538
Less-accumulated depreciation and amortization	**(1,842)**	(1,826)
	$ 701	$ 712

Investments: The caption "Investment (loss) income" in the consolidated statements of income comprises realized and unrealized gains and losses from investments recognized in earnings. It includes, when applicable, other than temporary declines in the value of securities, mark-to-market increases or decreases in equity investments with readily determinable fair values and equity method gains or losses on the Company's investments in private equity funds.

The Company holds certain equity investments, that under legacy GAAP, were previously classified as available for sale securities, whereby the mark-to-market change was recorded to accumulated other comprehensive income in its consolidated balance sheet. As discussed in Note 1, effective January 1, 2018, the Company adopted new accounting guidance that requires equity investments (except those accounted for under the equity method of accounting, or those that result in consolidation of the investee) to be measured at fair value with changes in fair value recognized in net income. The Company recorded a cumulative-effect adjustment that increased retained earnings as of the beginning of the period of adoption by $14 million, reflecting the reclassification of cumulative unrealized gains, net of tax as of December 31, 2017 from accumulated other comprehensive income to retained earnings. Prior periods have not been restated.

The Company holds investments in certain private equity funds. Investments in private equity funds are accounted for under the equity method of accounting using a consistently applied three-month lag period adjusted for any known significant changes from the lag period to the reporting date of the Company. The underlying private equity funds follow investment company accounting, where investments within the fund are carried at fair value. Investment gains or losses for its proportionate share of the change in fair value of the funds are recorded in earnings. Investments using the equity method of accounting are included in "other assets" in the consolidated balance sheets.

In 2018 the Company recorded an investment loss of $12 million compared to investment income of $15 million in 2017 and less than $1 million in 2016. The investment loss in 2018 includes an impairment charge of $83 million related to its investment in Alexander Forbes (see Note 10). The net investment loss in 2018 also includes gains of $54 million related to mark-to-market changes in equity securities and gains of $17 million related to investments in private equity funds and other investments.

Goodwill and Other Intangible Assets: Goodwill represents acquisition costs in excess of the fair value of net assets acquired. Goodwill is reviewed at least annually for impairment. The Company performs an annual impairment test for each of its reporting units during the third quarter of each year. When a step 1 test is performed, fair values of the reporting units are estimated using either a market approach or a discounted cash flow model. Carrying values for the reporting units are based on balances at the prior quarter end and include directly identified assets and liabilities as well as an allocation of those assets and liabilities not recorded at the reporting unit level. As discussed in Note 6, the Company may elect to assess qualitative factors to determine if a step 1 test is necessary. Other intangible assets, which primarily consist of acquired customer lists, that are not deemed to have an indefinite life, are amortized over their estimated lives, typically ranging from 10 to 15 years, and reviewed for impairment upon the occurrence of certain triggering events in accordance with applicable accounting literature. The Company had no indefinite lived identified intangible assets at December 31, 2018 and 2017.

Capitalized Software Costs: The Company capitalizes certain costs to develop, purchase or modify software for the internal use of the Company. These costs are amortized on a straight-line basis over periods ranging from 3 to 10 years. Costs incurred during the preliminary project stage and post implementation stage, are expensed as incurred. Costs incurred during the application development stage are capitalized. Costs related to updates and enhancements are only capitalized if they will result in additional functionality. Capitalized computer software costs of $435 million and $488 million, net of accumulated amortization of $1.3 billion for both December 31, 2018 and 2017, are included in other assets in the consolidated balance sheets.

Legal and Other Loss Contingencies: The Company and its subsidiaries are subject to a significant number of claims, lawsuits and proceedings including claims for errors and omissions ("E&O"). The preparation of financial statements in conformity with accounting principles generally accepted in the United States ("GAAP") requires that a liability be recorded when a loss is both probable and reasonably estimable. Significant management judgment is required to apply this guidance. The Company utilizes case level reviews by inside and outside counsel, an internal actuarial analysis by Oliver Wyman Group, a subsidiary of the Company, and other methods to estimate potential losses. The liability is reviewed quarterly and adjusted as developments warrant. In many cases, the Company has not recorded a liability, other than for legal fees to defend the claim, because we are unable, at the present time, to make a determination that a loss is both probable and reasonably estimable. Given the unpredictability of E&O claims and of litigation that could flow from them, it is possible that an adverse outcome in a particular matter could have a material adverse effect on the Company's businesses, results of operations, financial condition or cash flow in a given quarterly or annual period.

In addition, to the extent that insurance coverage is available, significant management judgment is required to determine the amount of recoveries that are probable of collection under the Company's various insurance programs.

The legal and other contingent liabilities described above are not discounted.

Income Taxes: The Company's effective tax rate reflects its income, statutory tax rates and tax planning in the various jurisdictions in which it operates. Significant judgment is required in determining the annual tax provision and in evaluating uncertain tax positions and the ability to realize deferred tax assets.

The Company reports a liability for unrecognized tax benefits resulting from uncertain tax positions taken or expected to be taken in a tax return. The evaluation of a tax position is a two-step process. The first step involves recognition. The Company determines whether it is more likely than not that a tax position will be sustained upon tax examination, including resolution of any related appeals or litigation, based on only the technical merits of the position. The technical merits of a tax position derive from both statutory and judicial authority (legislation and statutes, legislative intent, regulations, rulings, and case law) and their applicability to the facts and circumstances of the tax position. If a tax position does not meet the more-likely-than-not recognition threshold, the benefit of that position is not recognized in the financial statements. The second step is measurement. A tax position that meets the more-likely-than-not-recognition threshold is measured to determine the amount of benefit to recognize in the financial statements. The tax position is measured as the largest amount of benefit that is greater than 50 percent likely to be realized upon ultimate resolution with a taxing authority. Uncertain tax positions are evaluated based upon the facts and circumstances that exist at each reporting period. Subsequent changes in judgment based upon new information may lead to changes in recognition, de-recognition, and measurement. Adjustments may result, for example, upon resolution of an issue with the taxing authorities, or expiration of a statute of limitations barring an assessment for an issue. The Company recognizes interest and penalties, if any, related to unrecognized tax benefits in income tax expense.

Tax law may require items be included in the Company's tax returns at different times than the items are reflected in the financial statements. As a result, the annual tax expense reflected in the consolidated statements of income is different than that reported in the income tax returns. Some of these differences are permanent, such as expenses that are not deductible in the returns, and some differences are temporary and reverse over time, such as depreciation expense. Temporary differences create deferred tax assets and liabilities. Deferred tax assets generally represent items that can be used as a tax deduction or credit in tax returns in future years for which benefit has already been recorded in the financial statements. Valuation allowances are established for deferred tax assets when it is estimated that future taxable income will be insufficient to use a deduction or credit in that jurisdiction. Deferred tax liabilities generally represent tax expense recognized in the financial statements for which payment has been deferred, or expense for which a deduction has been taken already in the tax return but the expense has not yet been recognized in the financial statements.

Derivative Instruments: All derivatives, whether designated in hedging relationships or not, are recorded on the balance sheet at fair value. If the derivative is designated as a fair value hedge, the changes in the fair value of the derivative and of the hedged item attributable to the hedged risk are recognized in earnings. The fair value of the derivative is recorded in the consolidated balance sheet in other receivables or accounts payable and accrued liabilities. If the derivative is designated as a cash flow hedge, the effective portions of changes in the fair value of the derivative are recorded in other comprehensive income and are recognized in the income statement when the hedged item affects earnings. Changes in the fair value attributable to the ineffective portion of cash flow hedges are recognized in earnings. If a derivative is not designated as an accounting hedge, the change in fair value is recorded in earnings.

Concentrations of Credit Risk: Financial instruments which potentially subject the Company to concentrations of credit risk consist primarily of cash and cash equivalents, commissions and fees receivable and insurance recoverables. The Company maintains a policy providing for the diversification of cash and cash equivalent investments and places its investments in a large number of high quality financial institutions to limit the amount of credit risk exposure. Concentrations of credit risk with respect to receivables are generally limited due to the large number of clients and markets in which the Company does business, as well as the dispersion across many geographic areas.

Per Share Data: Basic net income per share attributable to the Company and income from continuing operations per share are calculated by dividing the respective after-tax income attributable to common shares by the weighted average number of outstanding shares of the Company's common stock.

Diluted net income per share attributable to the Company and income from continuing operations per share are calculated by dividing the respective after-tax income attributable to common shares by the weighted average number of outstanding shares of the Company's common stock, which have been adjusted for the dilutive effect of potentially issuable common shares. Reconciliations of the applicable components used to calculate basic and diluted EPS - Continuing Operations are presented below. The reconciling items related to the EPS calculation are the same for both basic and diluted EPS.

Basic and Diluted EPS Calculation - *Continuing Operations*			
(In millions, except per share figures)	**2018**	2017	2016
Net income from continuing operations	**$ 1,670**	$ 1,510	$ 1,795
Less: Net income attributable to non-controlling interests	**20**	20	27
	$ 1,650	$ 1,490	$ 1,768
Basic weighted average common shares outstanding	**506**	513	519
Dilutive effect of potentially issuable common shares	**5**	6	5
Diluted weighted average common shares outstanding	**511**	519	524
Average stock price used to calculate common stock equivalents	**$ 83.13**	$ 77.30	$ 63.51

Estimates: GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of assets and liabilities at the date of the financial statements, and the reported amounts of revenues and expenses during the reporting period. Actual results may vary from those estimates.

New Accounting Pronouncements Effective January 1, 2018:

The following new accounting standards were adopted using a modified retrospective approach through a cumulative-effect adjustment to retained earnings as of January 1, 2018:

New Revenue Recognition Standard

In May 2014, the FASB issued new accounting guidance related to revenue from contracts with customers. The core principle of the guidance is that an entity should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. The Company adopted the new guidance effective January 1, 2018, using the modified retrospective method, which applies the new guidance beginning with the year of adoption, with the cumulative effect of initially applying the guidance recognized as an adjustment to retained earnings at January 1, 2018. The Company elected to apply the modified retrospective method to all contracts.

The guidance includes requirements to estimate variable or contingent consideration to be received, which will result in revenue being recognized earlier than under legacy GAAP. In addition, the guidance requires the capitalization and amortization of certain costs which were expensed as incurred under legacy GAAP. The adoption of this new revenue recognition standard shifted revenue in the Risk and Insurance Services segment among quarters from historical patterns, but did not have a significant year-over-year impact on annual revenue in either segment.

Upon adoption of the new revenue standard, the Company recognized significant movement in the quarterly timing of revenue recognized in the Risk and Insurance Services segment. In particular, under the new standard the recognition of revenue for reinsurance broking was accelerated from historical patterns. Estimated revenue from these treaties is recognized largely at the policy effective date at which point control over the services provided by the Company transfers to the client and the client has accepted the services. This resulted in a significant increase in revenue in the first quarter of 2018 compared to the same period in 2017. Prior to the adoption of this standard, revenue related to most reinsurance placements was recognized on the later of billing or effective date as premiums are determined by the primary insurers and attached to the reinsurance treaties. Typically, this resulted in revenue being recognized over a 12 to 18 month period.

Under the new standard, certain costs to obtain or fulfill a contract that were previously expensed as incurred have been capitalized.

The Company capitalized the incremental costs to obtain contracts primarily related to commissions or sales bonus payments in both segments. These deferred costs are amortized over the expected life of the underlying customer relationships.

In the Risk and Insurance Services segment, certain pre-placement costs to fulfill are now deferred and amortized into earnings when revenue from the placement is recognized. These costs were previously expensed as incurred. As such, the recognition of costs shifted among quarters.

In Consulting, the Company incurs implementation costs necessary to facilitate the delivery of the contracted services. The Company has concluded that certain additional implementation costs previously expensed under legacy GAAP will be deferred under the new guidance. In addition, the amortization period for these implementation costs will include the initial contract term plus expected renewals.

The cumulative effect of adopting the standard, net of tax, on January 1, 2018 resulted in an increase to the opening balance of retained earnings of $364 million, with offsetting increases/decreases to other balance sheet accounts, e.g. accounts receivable, other assets and deferred income taxes. The comparative prior period information was not restated and will continue to be reported under the legacy accounting standards that were in effect for those periods.

The impact of adoption of the new revenue standard on the Company's consolidated income statement was as follows (in millions):

	For the Year Ended December 31, 2018		
	As Reported	Revenue Standard Impact	Legacy GAAP
Revenue	**$ 14,950**	**$ 2**	**$ 14,952**
Expense:			
Compensation and benefits	**8,605**	**17**	**8,622**
Other operating expenses	**3,584**	**—**	**3,584**
Operating expenses	**12,189**	**17**	**12,206**
Operating income	**2,761**	**(15)**	**2,746**
Other net benefit credits	**215**	**—**	**215**
Interest income	**11**	**—**	**11**
Interest expense	**(290)**	**—**	**(290)**
Investment (loss) income	**(12)**	**—**	**(12)**
Acquisition related derivative contracts	**(441)**	**—**	**(441)**
Income before income taxes	**2,244**	**(15)**	**2,229**
Income tax expense	**574**	**(4)**	**570**
Net income before non-controlling interests	**1,670**	**(11)**	**1,659**
Less: Net income attributable to non-controlling interests	**20**	**—**	**20**
Net income attributable to the Company	**$ 1,650**	**$ (11)**	**$ 1,639**

The impact of adoption of the new revenue standard on the Company's consolidated balance sheet was as follows (in millions):

	December 31, 2018		
	As Reported	Revenue Standard Impact	Legacy GAAP
ASSETS			
Current assets:			
Cash and cash equivalents	$ 1,066	$ —	$ 1,066
Net receivables	4,317	(68)	4,249
Other current assets	551	(326)	225
Total current assets	5,934	(394)	5,540
Goodwill and intangible assets	11,036	—	11,036
Fixed assets, net	701	—	701
Pension related assets	1,688	—	1,688
Deferred tax assets	680	107	787
Other assets	1,539	(242)	1,297
TOTAL ASSETS	$ 21,578	$ (529)	$ 21,049
LIABILITIES AND EQUITY			
Current liabilities:			
Short-term debt	$ 314	$ —	$ 314
Accounts payable and accrued liabilities	2,234	(129)	2,105
Accrued compensation and employee benefits	1,778	—	1,778
Acquisition related derivatives	441	—	441
Accrued income taxes	157	—	157
Total current liabilities	4,924	(129)	4,795
Fiduciary liabilities	5,001	—	5,001
Less - cash and investments held in a fiduciary capacity	(5,001)	—	(5,001)
	—	—	—
Long-term debt	5,510	—	5,510
Pension, post-retirement and post-employment benefits	1,911	—	1,911
Liabilities for errors and omissions	287	—	287
Other liabilities	1,362	(25)	1,337
Total equity	7,584	(375)	7,209
TOTAL LIABILITIES AND EQUITY	$ 21,578	$ (529)	$ 21,049

The impact of adoption of the new revenue standard on the Company's consolidated statement of cash flow was as follows (in millions):

	Twelve Months Ended December 31, 2018		
	As Reported	**Revenue Standard Impact**	**Legacy GAAP**
Operating cash flows:			
Net income before non-controlling interests	$ 1,670	$ (11)	$ 1,659
Adjustments to reconcile net income to cash provided by operations:			
Depreciation and amortization of fixed assets and capitalized software	311	—	311
Amortization of intangible assets	183	—	183
Adjustments and payments related to contingent consideration liability	(4)	—	(4)
Loss on deconsolidation of entity	11	—	11
Benefit for deferred income taxes	(39)	—	(39)
Loss on investments	12	—	12
Gain on disposition of assets	(48)	—	(48)
Change in fair value of acquisition related derivative contracts	441	—	441
Share-based compensation expense	193	—	193
Changes in assets and liabilities:			
Net receivables	(78)	—	(78)
Other current assets	26	8	34
Other assets	(37)	12	(25)
Accounts payable and accrued liabilities	23	(7)	16
Accrued compensation and employee benefits	68	—	68
Accrued income taxes	(40)	—	(40)
Contributions to pension and other benefit plans in excess of current year expense/credit	(291)	—	(291)
Other liabilities	9	(2)	7
Effect of exchange rate changes	18	—	18
Net cash provided by operations	$ 2,428	$ —	$ 2,428

The adoption of the revenue recognition standard did not have an impact on the Company's financing or investing cash flows.

Other Standards Adopted Effective January 1, 2018 using the modified retrospective approach

In January 2016, the FASB issued new guidance intended to improve the recognition and measurement of financial instruments. The new guidance requires investments in equity securities (except those accounted for under the equity method of accounting, or those that result in consolidation of the investee) to be measured at fair value with changes in fair value recognized in net income; requires public business entities to use the exit price notion when measuring the fair value of financial instruments for disclosure purposes; requires separate presentation of financial assets and financial liabilities by measurement category and form of financial asset (i.e., securities or loans and receivables) on the balance sheet or the accompanying notes to the financial statements; eliminates the requirement for public business entities to disclose the method(s) and significant assumptions used to estimate the fair value that is required to be disclosed for financial instruments measured at amortized cost on the balance sheet; and requires a reporting organization to present separately in other comprehensive income the portion of the total change in the fair value of a liability resulting from a change in the instrument-specific credit risk (also referred to as "own credit") when the organization has elected to measure the liability at fair value in accordance with the fair value option for financial instruments. The new guidance was effective for public companies for fiscal years beginning after December 15, 2017, including interim periods within those fiscal years. The Company holds certain equity investments that under legacy GAAP were previously treated as available for sale securities, whereby the mark-to-market change was recorded to accumulated other comprehensive income in its consolidated balance sheet. The Company adopted the new accounting guidance, effective January 1, 2018, recording a cumulative-effect adjustment increase to retained earnings as of the beginning of the period of adoption of $14 million, reflecting the reclassification of cumulative unrealized gains, net of tax as of December 31, 2017 from accumulated other comprehensive income to retained earnings. Therefore, prior periods have not been restated.

In October 2016, the FASB also issued new guidance which requires an entity to recognize the income tax consequences of an intra-entity transfer of an asset other than inventory when the transfer occurs. The new guidance eliminates the exception for an intra-entity transfer of an asset other than inventory. The new guidance is effective for public companies for fiscal years beginning after December 15, 2017, including interim periods within those fiscal years. The new guidance must be applied on a modified retrospective basis through a cumulative-effect adjustment to retained earnings as of the beginning of the period of adoption. The Company adopted the new guidance effective January 1, 2018, recording a cumulative-effect adjustment decrease to retained earnings of approximately $14 million as of the beginning of the period of adoption.

The impact on the Company's balance sheet as of January 1, 2018 related to the adoption of the accounting standards using the modified retrospective approach as discussed above is as follows:

		Adjustments			
	Balance at December 31, 2017	Revenue Recognition	Financial Instruments	Intra-Entity Transfer	Balance at January 1, 2018
Balance Sheet					
Assets					
Net Receivables	$ 4,133	$ 68	$ —	$ —	$ 4,201
Other Current Assets	224	318	—	—	542
Other Assets	1,430	226	—	—	1,656
Deferred Tax Assets	669	(103)	—	(14)	552
Liabilities					
Accounts Payable and Accrued Liabilities	2,083	122	—	—	2,205
Other Liabilities	1,311	23	—	—	1,334
Equity					
Other Accumulated Comprehensive Income	—	—	(14)	—	(14)
Retained Earnings	$ 13,140	$ 364	$ 14	$ (14)	$ 13,504

Cumulative effect adjustment related to the adoption of the revenue recognition standard

The cumulative effect adjustment recorded to net receivables and other current assets is primarily related to contingent brokerage revenue and quota share reinsurance brokerage. Under the new guidance, the Company is required to record an estimate of variable or contingent consideration earlier than under the previous rules. Also under the new guidance, revenue related to most reinsurance placements is accelerated versus previous patterns.

The cumulative effect adjustments also includes the capitalization of costs to fulfill and costs to obtain that are included in other current assets and other assets, respectively. These costs were previously expensed as incurred. The adjustment to accounts payable and accrued liabilities includes deferred revenue related to the timing of fee revenue recognition for fee based arrangements and certain post placement servicing costs, primarily related to reinsurance brokerage costs that were previously expensed as incurred.

Adoption of amended accounting standard using the retrospective application approach

Effective January 1, 2018, the Company adopted new guidance that changes the presentation of net periodic pension cost and net periodic postretirement cost ("net periodic benefit costs"). The new guidance requires employers to report the service cost component of net periodic benefit costs in the same line item as other compensation costs in the income statement. The other components of net periodic benefit costs are required to be presented in the income statement separately from the service cost component and outside a subtotal of income from operations. The new guidance requires retrospective application for the presentation of the service cost component and the other components of net periodic benefit costs. Accordingly, we have reclassified prior period information in the consolidated results of operations, segment data and related disclosures contained in our notes to the consolidated financial statements to reflect the retrospective adoption of this standard.

Other accounting standards adopted effective January 1, 2018

In November 2016, the FASB issued new guidance which requires that a statement of cash flows explain the change during the period in the total of cash, cash equivalents and amounts generally described as restricted cash or restricted cash equivalents. As a result, amounts generally described as restricted cash and restricted cash equivalents should be included with cash and cash equivalents when reconciling the beginning-of-period and end-of-period total amounts shown on the statement of cash flows. The Company adopted this guidance, which is required to be applied retrospectively to all periods presented, effective January 1, 2018. The adoption of this guidance did not impact the Company's consolidated balance sheets or consolidated statements of cash flows.

In August 2016, the FASB issued new guidance which adds or clarifies guidance on the classification of certain cash receipts and payments in the statement of cash flows, including cash payments for debt prepayments or debt extinguishment costs, contingent consideration payments made after a business combination and distributions received from equity method investees. The Company adopted this guidance effective January 1, 2018. The adoption of this guidance did not impact the Company's consolidated statements of cash flows.

In January 2017, the FASB issued guidance which clarifies the definition of a business in order to assist companies with evaluating whether transactions should be accounted for as acquisitions (or disposals) of assets or businesses. The Company adopted this guidance effective January 1, 2018. The adoption of this standard did not have an impact on the Company's financial position or results of operations.

Other accounting standards adopted in prior years

In April 2016, the FASB issued new guidance which simplifies several aspects of the accounting for employee share-based payment transactions, including the accounting for income taxes, forfeitures and statutory tax withholding requirements, as well as classification in the statement of cash flows. The new guidance requires that companies record all excess tax benefits and tax deficiencies as an income tax benefit or expense in the income statement and classify excess tax benefits as an operating activity in the statement of cash flows. The Company adopted this new guidance prospectively, effective January 1, 2017 and prior periods have not been adjusted. The adoption of this new standard reduced income tax expense in the consolidated statements of income by approximately $28 million and $79 million for the years ended December 31, 2018 and 2017, respectively. For the year ended December 31, 2016 the Company recorded an excess tax benefit of $44 million as an increase to equity in its consolidated balance sheets, which was reflected as cash provided by financing activities in the consolidated statements of cash flows.

New Accounting Pronouncements Not Yet Adopted

In August 2018, the FASB issued new guidance that amends required fair value measurement disclosures. The guidance adds new requirements, eliminates some current disclosures and modifies other required disclosures. The new disclosure requirements, along with modifications made to disclosures as a result of the change in requirements for narrative descriptions of measurement uncertainty, must be applied on a prospective basis. The effects of all other amendments included in the guidance must be applied retrospectively for all periods presented. The guidance is effective for fiscal years beginning after December 15, 2019, including interim periods therein. Early adoption is permitted. Adoption of this guidance will impact disclosures only and will not have an impact on the Company's financial position or results of operations.

In August 2018, the FASB issued new guidance that amends disclosures related to Defined Benefit Plans. The guidance removes disclosures that no longer are considered cost-beneficial, clarifies the specific requirements of certain disclosures, and adds disclosure requirements identified as relevant. The guidance must be applied on a retrospective basis. The guidance is effective for fiscal years ending after December 15, 2020. Early adoption is permitted. Adoption of this guidance will impact disclosures only and will not have an impact on the Company's financial position or results of operations.

In January 2017, the FASB issued new guidance to simplify the test for goodwill impairment. The new guidance eliminates the second step in the current two-step goodwill impairment process, under which a goodwill impairment loss is measured by comparing the implied fair value of a reporting unit's goodwill with the carrying amount of that goodwill for that reporting unit. The new guidance requires a one-step impairment test, in which the goodwill impairment charge is based on the amount by which the carrying amount exceeds the reporting unit’s fair value; however, the loss recognized should not exceed the total amount of goodwill allocated to that reporting unit. An entity still has the option to perform the qualitative assessment for a reporting unit to determine if the quantitative impairment test is necessary. The guidance should be applied on a prospective basis with the nature of and reason for the change in accounting principle disclosed upon transition. The guidance is effective for annual or any interim goodwill impairment tests in fiscal years beginning after December 15, 2019. Early adoption is permitted. The Company does not expect the adoption of this standard to have a material impact on its financial position or results of operations.

In February 2016, the FASB issued new guidance intended to improve financial reporting for leases. Under the new guidance, a lessee will be required to recognize assets and liabilities for leases with lease terms of more than 12 months. Consistent with current GAAP, the recognition, measurement, and presentation of expenses and cash flows arising from a lease by a lessee primarily will depend on its classification, which for lessees, will be defined as either financing or operating leases under the new guidance. However, unlike current GAAP, which only requires recognition of capital leases on the balance sheet, the new guidance requires that both types of leases be recognized on the balance sheet. The new guidance will require additional disclosures to help investors and other financial statement users better understand the amount, timing, and uncertainty of cash flows arising from leases. These disclosures include qualitative and quantitative requirements, and additional information about the amounts recorded in the financial statements.

The new guidance on leases became effective for public companies for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2018. The Company adopted this new standard effective January 1, 2019, using the modified retrospective method. Prior period information will not be restated. The cumulative effect of initially applying the guidance is recognized as an adjustment to retained earnings at January 1, 2019. The Company has elected to apply the set of practical expedients at transition, which among other things, allows the Company to carry forward historical lease classifications. As a practical expedient, the Company elected an accounting policy not to separate non-lease components from lease components and instead, account for these components as a single lease component. The Company has made an accounting policy election not to recognize right-of-use assets and lease liabilities for leases, that at the commencement date, are for 12 months or less. Substantially all of the Company’s leases are operating leases.

The Company expects to recognize a lease liability of approximately $1.8 billion and a corresponding right-of-use asset ("ROU asset") of approximately $1.6 billion, including the reclassification of approximately $200 million of unamortized lease incentives and restructuring liabilities, upon the adoption of this standard, with minimal impact on the consolidated statement of income.

2. Revenue

2018 - Under the New Revenue Recognition Standard

In May 2014, the Financial Accounting Standards Board ("FASB") issued new accounting guidance related to revenue from contracts with customers. The core principle of the guidance is that an entity should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. To achieve that principle, the entity applies the following steps: identify the contract(s) with the customer, identify the performance obligations in the contract(s), determine the transaction price, allocate the transaction price to the performance obligations in the contract and recognize revenue when (or as) the entity satisfies a performance obligation.

The Company adopted the new guidance effective January 1, 2018, using the modified retrospective method, which applies the new guidance beginning in the year of adoption, with the cumulative effect of initially applying the guidance recognized as an adjustment to retained earnings at January 1, 2018. The Company elected to apply the modified retrospective method to all contracts. The comparative financial information included herein has not been restated and continues to be reported under the legacy accounting standards that were in effect for those periods.

In the first quarter of 2018, the Company recorded an increase to the opening balance of retained earnings of $364 million to reflect the cumulative effect of adopting this revenue standard. Other revenue included in the consolidated statements of income that is not from contracts with customers is approximately 1% of total revenue, and therefore is not presented as a separate line item.

As discussed in more detail below, the adoption of this new revenue standard shifted income among quarters from historical patterns, but did not have a significant year-over-year impact on annual revenue.

<u>*Risk and Insurance Services*</u>

Risk and Insurance Services revenue reflects compensation for brokerage and consulting services through commissions and fees. Commission rates and fees vary in amount and can depend upon a number of factors, including the type of insurance or reinsurance coverage provided, the particular insurer or reinsurer selected, and the capacity in which the broker acts and negotiates with clients. For the majority of the insurance and reinsurance brokerage arrangements, advice and services provided which culminate in the placement of an effective policy are considered a single performance obligation. Arrangements with clients may include the placement of a single policy, multiple policies or a combination of policy placements and other services. Consideration related to such "bundled arrangements" is allocated to the individual performance obligations based on their relative fair value. Revenue for policy placement is generally recognized on the policy effective date, at which point control over the services provided by the Company has transferred to the client and the client has accepted the services. In many cases, fee compensation may be negotiated in advance, based on the type of risk, coverage required and service provided by the Company and ultimately, the extent of the risk placed into the insurance market or retained by the client. The trends and comparisons of revenue from one period to the next can be affected by changes in premium rate levels, fluctuations in client risk retention and increases or decreases in the value of risks that have been insured, as well as new and lost business, and the volume of business from new and existing clients. For such arrangements, revenue is recognized using output measures, which correspond to the progress toward completing the performance obligation. Fees for non-risk transfer services provided to clients are recognized over time in the period the services are provided, using a proportional performance model, primarily based on input measures. These measures of progress provide a faithful depiction of the progress towards completion of the performance obligation.

Revenue related to reinsurance brokerage for excess of loss ("XOL") treaties is estimated based on contractually specified minimum or deposit premiums, and adjusted as additional evidence of the ultimate amount of brokerage is received. Revenue for quota share treaties is estimated based on indications of estimated premium income provided by the ceding insurer. The estimated brokerage revenue recognized for quota share treaties is constrained to an amount that is probable to not have a significant negative adjustment. The estimated revenue and the constraint are evaluated as additional evidence of the ultimate amount of underlying risks to be covered is received over the 12 to 18 months following the effective date of the placement.

In addition to commissions and fees from its clients, the Company also receives other compensation from insurance companies. This other insurer compensation includes, among other things, payments for consulting and analytics services provided to insurers, fees for administrative and other services provided to or on behalf of insurers (including services relating to the administration and management of quota shares, panels and other facilities in which insurers participate). The Company is also eligible for certain contingent commissions from insurers based on the attainment of specified metrics (i.e., volume and loss ratio measures) relating to Marsh's placements, particularly in Marsh & McLennan Agency ("MMA") and in parts of Marsh's international operations. Revenue for contingent commissions from insurers is estimated based on historical evidence of the achievement of the respective contingent metrics and recorded as the underlying policies that contribute to the achievement of the metric are placed. Due to the uncertainty of the amount of contingent consideration that will be received, the estimated revenue is constrained to an amount that is probable to not have a significant negative adjustment. Contingent consideration is generally received in the first quarter of the subsequent year.

A significant majority of the Company's Risk and Insurance Services revenue is for performance obligations recognized at a point in time. Marsh and Guy Carpenter also receive interest income on certain funds (such as premiums and claims proceeds) held in a fiduciary capacity for others.

Insurance brokerage commissions are generally invoiced on the policy effective date. Fee based arrangements generally include a percentage of the total fee due upon signing the arrangement, with additional fixed installments payable over the remainder of the year. Payment terms range from receipt of invoice up to 30 days from invoice date.

Reinsurance brokerage revenue is recognized on the effective date of the treaty. Payment terms depend on the type of reinsurance. For XOL treaties, brokerage revenue is typically collected in four installments during an annual treaty period based on a contractually specified minimum or deposit premium. For proportional or quota share treaties, brokerage is billed as underlying insured risks attach to the reinsurance treaty, generally over 12 to 18 months.

Consulting

The major component of revenue in the Consulting business is fees paid by clients for advice and services. Mercer, principally through its health line of business, also receives revenue in the form of commissions received from insurance companies for the placement of group (and occasionally individual) insurance contracts, primarily health, life and accident coverages. Revenue for Mercer’s investment management business and certain of Mercer’s defined benefit administration services consists principally of fees based on assets under delegated management or administration.

Consulting projects in Mercer’s wealth and career businesses, as well as consulting projects in Oliver Wyman typically consist of a single performance obligation, which is recognized over time as control is transferred continuously to customers. Typically, revenue is recognized over time using an input measure of time expended to date relative to total estimated time to be incurred at project completion. Incurred hours represent services rendered and thereby faithfully depicts the transfer of control to the customer.

On a limited number of engagements, performance fees may also be earned for achieving certain prescribed performance criteria. Revenue for achievement is estimated and constrained to an amount that is probable to not have a significant negative adjustment.

A significant majority of fee revenues in the Consulting segment is recognized over time.

For consulting projects, Mercer generally invoices monthly in arrears with payment due within 30 days of the invoice date. Fees for delegated management services are either deducted from the net asset value of the fund or invoiced to the client on monthly or quarterly basis in arrears. Oliver Wyman typically bills its clients 30-60 days in arrears with payment expected within 30 days upon receipt of the invoice.

Health brokerage and consulting services are components of both Marsh, which includes MMA, and Mercer, with approximately 70% of such revenues reported in Mercer. Health contracts typically involve a series of distinct services that are treated as a single performance obligation. Revenue for these services is recognized over time based on the amount of remuneration the Company expects to be entitled in exchange for these services. Payments for health brokerage and consulting services are typically paid monthly in arrears from carriers based on insured lives under the contract.

The following schedule disaggregates various components of the Company's revenue:

	Twelve Months Ended December 31, 2018	2017
Marsh:		
EMEA	**$ 2,132**	$ 2,033
Asia Pacific	**683**	645
Latin America	**400**	404
Total International	**3,215**	3,082
U.S./Canada	**3,662**	3,322
Total Marsh	**6,877**	6,404
Guy Carpenter	**1,286**	1,187
Subtotal	**8,163**	7,591
Fiduciary interest income	**65**	39
Total Risk and Insurance Services	**$ 8,228**	$ 7,630
Mercer:		
Defined Benefit Consulting & Administration	**$ 1,279**	$ 1,381
Investment Management & Related Services	**906**	767
Total Wealth	**2,185**	2,148
Health	**1,735**	1,648
Career	**812**	732
Total Mercer	**4,732**	4,528
Oliver Wyman	**2,047**	1,916
Total Consulting	**$ 6,779**	$ 6,444

Note: The 2017 information is prior to the adoption of ASC 606.

The following schedule provides contract assets and contract liabilities information from contracts with customers.

(In millions)	**December 31, 2018**	January 1, 2018
Contract Assets	**$ 112**	$ 128
Contract Liabilities	**$ 545**	$ 583

The Company records accounts receivable when the right to consideration is unconditional, subject only to the passage of time. Contract assets primarily relate to quota share reinsurance brokerage and contingent insurer revenue. The Company does not have the right to bill and collect revenue for quota share brokerage until the underlying policies written by the ceding insurer attach to the treaty. Estimated contingent insurer revenue related to achievement of volume or loss ratio metrics cannot be billed or collected until all related policy placements are completed and the contingency is resolved. The change in contract assets from January 1, 2018 to December 31, 2018 is primarily due to $331 million of additions during the period offset by $347 million transferred to accounts receivables, as the rights to bill and collect became unconditional. Contract assets are included in other current assets in the Company's consolidated balance sheet. Contract liabilities primarily relate to the advance consideration received from customers. Contract liabilities are included in current liabilities in the Company's consolidated balance sheet. Revenue recognized in 2018 that was included in the contract liability balance at the beginning of the year was $582 million. The amount of revenue recognized in 2018 from performance obligations satisfied in previous periods, mainly due to variable consideration from contracts with insurers, quota share business and consulting contracts previously considered constrained was $51 million.

The Company applies the practical expedient and therefore does not disclose the value of unsatisfied performance obligations for (1) contracts with original contract terms of one year or less and (2) contracts where the Company has the right to invoice for services performed. The revenue expected to be recognized in future periods during the non-cancellable term of existing contracts greater than one year that is related to performance obligations that are unsatisfied or partially satisfied at the end of the reporting period is approximately $32 million for Marsh, $486 million for Mercer and $2 million for Oliver Wyman. The Company expects revenue in 2019, 2020, 2021, 2022 and 2023 and beyond of $221 million, $141 million, $86 million, $53 million and $19 million, respectively, related to these performance obligations.

Costs to Obtain and Fulfill a Contract

Under the new standard, certain costs to obtain or fulfill a contract that were previously expensed as incurred have been capitalized.

The Company capitalized the incremental costs to obtain contracts primarily related to commissions or sales bonus payments in both segments. These deferred costs are amortized over the expected life of the underlying customer relationships.

In Risk and Insurance Services, the Company capitalizes certain pre-placement costs that are considered fulfillment costs that meet the following criteria: these costs 1) relate directly to a contract, 2) enhance resources used to satisfy the Company's performance obligation and 3) are expected to be recovered through revenue generated by the contract. These costs are amortized at a point in time when the associated revenue is recognized.

In Consulting, the Company incurs implementation costs necessary to facilitate the delivery of the contracted services. These costs are capitalized and amortized over the initial contract term plus expected renewal periods.

At December 31, 2018, the Company's capitalized assets related to deferred implementation costs, costs to obtain and costs to fulfill were $41 million, $206 million and $227 million, respectively. Costs to obtain and deferred implementation costs are primarily included in other assets and costs to fulfill are primarily included in other current assets in the Company's consolidated balance sheet. The Company recorded amortization of compensation and benefits expense of $998 million in the year ended December 31, 2018 related to these capitalized costs.

A significant portion of deferred costs to fulfill in Risk and Insurance Services is amortized within three to six months. Therefore, the deferral of the cost and its amortization often occur in the same annual period.

The Company has elected to use the practical expedient and recognizes the incremental costs of obtaining contracts as an expense when incurred if the amortization period of the assets is one year or less.

2017 - Revenue Recognized Under Guidance in Effect Prior to 2018

Risk and Insurance Services revenue includes insurance commissions, fees for services rendered and interest income on certain fiduciary funds. Insurance commissions and fees for risk transfer services generally were recorded as of the effective date of the applicable policies or, in certain cases (primarily in the Company's reinsurance broking operations), as of the effective date or billing date, whichever is later. A reserve for policy cancellation was provided based on historic and current data on cancellations. Consideration for fee arrangements covering multiple insurance placements, the provision of risk management and/or other services was allocated to all deliverables on the basis of the relative selling prices. Fees for non-risk transfer services provided to clients are recognized over the period in which the services are provided, using a proportional performance model. Fees resulting from achievement of certain performance thresholds are recorded when such levels are attained and such fees are not subject to forfeiture.

In the Consulting segment, the adoption of the new revenue standard did not have a significant impact on the timing of revenue recognition in either the quarters or the year-over-year annual period.

See Note 1 for further discussion on the impact the new revenue recognition standard has on the Company's consolidated statements of income when comparing the 2018 financial information versus 2017.

3. Supplemental Disclosures

The following schedule provides additional information concerning acquisitions, interest and income taxes paid:

(In millions of dollars)	**2018**	2017	2016
Assets acquired, excluding cash	**$ 1,100**	$ 898	$ 960
Liabilities assumed	**(83)**	(134)	(111)
Contingent/deferred purchase consideration	**(133)**	(109)	(36)
Net cash outflow for acquisitions	**$ 884**	$ 655	$ 813

(In millions of dollars)	**2018**	2017	2016
Interest paid	**$ 264**	$ 199	$ 178
Income taxes paid, net of refunds	**$ 632**	$ 583	$ 642

The classification of contingent consideration payments in the consolidated statement of cash flows is dependent upon whether the payment was part of the initial liability established on the acquisition date (financing) or an adjustment to the acquisition date liability (operating). Deferred payments are classified as financing activities in the consolidated statements of cash flows.

The following amounts are included in the consolidated statements of cash flows as a financing activity. The Company paid deferred and contingent consideration of $117 million in the year ended December 31, 2018, consisting of deferred purchase consideration of $62 million and contingent purchase consideration of $55 million. In the year ended December 31, 2017 the Company paid deferred and contingent consideration of $136 million, consisting of deferred purchase consideration of $55 million and contingent consideration of $81 million, and in the year ended December 31, 2016 the Company paid deferred and contingent consideration of $98 million, consisting of deferred purchase consideration of $54 million and contingent consideration of $44 million.

The following amounts are included in the operating section of the consolidated statements of cash flows. For the year ended December 31, 2018, the Company recorded a net charge for adjustments to acquisition related accounts of $32 million and contingent consideration payments of $36 million. For the year ended December 31, 2017, the Company recorded a net charge for adjustments to acquisition related accounts of $3 million and contingent consideration payments of $27 million, and for the year ended December 31, 2016 the Company recorded a net charge for adjustments to acquisition related accounts of $9 million and contingent consideration payments of $42 million.

The Company had non-cash issuances of common stock under its share-based payment plan of $130 million, $88 million and $73 million for the years ended December 31, 2018, 2017 and 2016, respectively. The Company recorded stock-based compensation expense related to restricted stock units, performance stock units and stock options of $193 million, $149 million and $109 million for the years ended December 31, 2018, 2017 and 2016, respectively.

As discussed in Note 1, for the year ended December 31, 2016, the Company recorded an excess tax benefit of $44 million as an increase to equity in its consolidated balance sheets, which was reflected as cash provided by financing activities in the consolidated statements of cash flows.

An analysis of the allowance for doubtful accounts is as follows:

For the Years Ended December 31, *(In millions of dollars)*	**2018**	2017	2016
Balance at beginning of year	**$ 110**	$ 96	$ 87
Provision charged to operations	**34**	31	31
Accounts written-off, net of recoveries	**(24)**	(17)	(20)
Effect of exchange rate changes and other	**(8)**	—	(2)
Balance at end of year	**$ 112**	$ 110	$ 96

4. Other Comprehensive Income (Loss)

The changes in the balances of each component of Accumulated Other Comprehensive Income ("AOCI") for the years ended December 31, 2018 and 2017, including amounts reclassified out of AOCI, are as follows:

(In millions of dollars)	**Unrealized Investment Gains (Losses)**	**Pension/Post-Retirement Plans Gains (Losses)**	**Foreign Currency Translation Adjustments**	**Total**
Balance as of January 1, 2018	**$ 14**	**$ (2,892)**	**$ (1,165)**	**$ (4,043)**
Cumulative effect of amended accounting standard	**(14)**	**—**	**—**	**(14)**
Other comprehensive (loss) before reclassifications	**—**	**(205)**	**(529)**	**(734)**
Amounts reclassified from accumulated other comprehensive loss	**—**	**144**	**—**	**144**
Net current period other comprehensive (loss)	**—**	**(61)**	**(529)**	**(590)**
Balance as of December 31, 2018	**$ —**	**$ (2,953)**	**$ (1,694)**	**$ (4,647)**

(In millions of dollars)	Unrealized Investment Gains (Losses)	Pension/Post-Retirement Plans Gains (Losses)	Foreign Currency Translation Adjustments	Total
Balance as of January 1, 2017	$ 19	$ (3,232)	$ (1,880)	$ (5,093)
Other comprehensive (loss) income before reclassifications	(5)	160	715	870
Amounts reclassified from accumulated other comprehensive loss	—	180	—	180
Net current period other comprehensive (loss) income	(5)	340	715	1,050
Balance as of December 31, 2017	$ 14	$ (2,892)	$ (1,165)	$ (4,043)

The components of other comprehensive income (loss) are as follows:

For the Years Ended December 31,	2018		
(In millions of dollars)	**Pre-Tax**	**Tax (Credit)**	**Net of Tax**
Foreign currency translation adjustments	**$ (529)**	**$ —**	**$ (529)**
Pension/post-retirement plans:			
Amortization of (gains) losses included in net periodic pension cost:			
Prior service credits (a)	**(4)**	**(1)**	**(3)**
Net actuarial losses (a)	**145**	**32**	**113**
Effect of settlement (a)	**42**	**8**	**34**
Subtotal	**183**	**39**	**144**
Net losses arising during period	**(374)**	**(88)**	**(286)**
Foreign currency translation adjustments	**141**	**25**	**116**
Other adjustments	**(41)**	**(6)**	**(35)**
Pension/post-retirement plans losses	**(91)**	**(30)**	**(61)**
Other comprehensive loss	**$ (620)**	**$ (30)**	**$ (590)**

(a) These components of net periodic pension cost are included in other net benefits credits in the Consolidated Statements of Income. Tax on prior service gains and net actuarial losses is included in income tax expense.

For the Years Ended December 31,	2017		
(In millions of dollars)	Pre-Tax	Tax (Credit)	Net of Tax
Foreign currency translation adjustments	$ 717	$ 2	$ 715
Unrealized investment losses	(7)	(2)	(5)
Pension/post-retirement plans:			
Amortization of (gains) losses included in net periodic pension cost:			
Prior service credits (a)	(1)	—	(1)
Net actuarial losses (a)	167	30	137
Effect of curtailment (a)	(1)	—	(1)
Effect of settlement (a)	54	9	45
Subtotal	219	39	180
Net gains arising during period	374	62	312
Foreign currency translation adjustments	(201)	(36)	(165)
Other adjustments	16	3	13
Pension/post-retirement plans gains	408	68	340
Other comprehensive income	$ 1,118	$ 68	$ 1,050

(a) These components of net periodic pension cost are included in other net benefits credits in the Consolidated Statements of Income. Tax on prior service gains and net actuarial losses is included in income tax expense.

For the Years Ended December 31,	2016		
(In millions of dollars)	Pre-Tax	Tax (Credit)	Net of Tax
Foreign currency translation adjustments	$ (742)	$ 36	$ (778)
Unrealized investment gains	21	8	13
Pension/post-retirement plans:			
Amortization of losses included in net periodic pension cost:			
Prior service losses (a)	3	1	2
Net actuarial losses (a)	166	46	120
Subtotal	169	47	122
Effect of curtailment	102	38	64
Net losses arising during period	(855)	(175)	(680)
Foreign currency translation adjustments	416	70	346
Other	49	9	40
Pension/post-retirement plans losses	(119)	(11)	(108)
Other comprehensive (loss) income	$ (840)	$ 33	$ (873)

(a) These components of net periodic pension cost are included in other net benefits credits in the consolidated statements of income. Tax on prior service costs and net actuarial losses is included in income tax expense.

The components of accumulated other comprehensive income (loss) are as follows:

(In millions of dollars)	**December 31, 2018**	December 31, 2017
Foreign currency translation adjustments (net of deferred tax asset of $15 in 2018 and deferred tax liability of $11 in 2017)	**$ (1,694)**	$ (1,165)
Net unrealized investment gains (net of deferred tax liability of $7 in 2017)	**—**	14
Net charges related to pension/post-retirement plans (net of deferred tax asset of $1,493 and $1,462 in 2018 and 2017, respectively)	**(2,953)**	(2,892)
	$ (4,647)	$ (4,043)

5. Acquisitions/Dispositions

The Company's acquisitions have been accounted for as business combinations. Net assets and results of operations are included in the Company's consolidated financial statements commencing at the respective purchase closing dates. In connection with acquisitions, the Company records the estimated value of the net tangible assets purchased and the value of the identifiable intangible assets purchased, which typically consist of purchased customer lists, trademarks and non-compete agreements. The valuation of purchased intangible assets involves significant estimates and assumptions. Until final valuations are complete, any change in assumptions could affect the carrying value of tangible assets, goodwill and identifiable intangible assets.

The Risk and Insurance Services segment completed twelve acquisitions during 2018.

- February – MMA acquired Highsmith Insurance Agency, a North Carolina-based independent insurance brokerage firm.
- March – Marsh acquired Hoken Soken, Inc., a Japan-based insurance agency.
- May – Marsh acquired Mountlodge Limited, a Scotland-based independent insurance broker and Lorant Martínez Salas y Compañía Agente de Seguros y de Fianzas, S.A. de C.V., a Mexico-based multi-line insurance broker.
- June – MMA acquired Bleakley Insurance Services, a California-based provider of employee benefits solutions; Klein Agency, Inc., a Minnesota-based surety and property/casualty agency; and Insurance Associates, Inc., a Maryland-based independent insurance agency.
- August – Marsh acquired John L. Wortham & Son, L.P., a Houston-based independent insurance broker.
- October – MMA acquired Eustis Insurance, Inc., a Louisiana-based insurance agency.
- November – MMA acquired James P. Murphy & Associates, Inc., a Connecticut-based insurance agency.
- December – MMA acquired Otis-Magie Insurance Agency, Inc., a Minnesota-based insurance agency, and Marsh acquired Hector Insurance PCC Ltd, a U.K.-based captive management company.

The Consulting segment completed eight acquisitions during 2018.

- January – Oliver Wyman acquired Draw Ltd., a U.K.-based digital transformation agency.
- March – Oliver Wyman acquired 8Works Limited, a U.K.-based design thinking consultancy.
- May – Mercer acquired EverBe SAS, a France-based Workday implementer and advisory firm; and Evolve Intelligence Pty Ltd., an Australia-based talent strategy firm.
- June – Mercer acquired India Life Capital Private Ltd., an India-based investment advisor.
- November – Mercer acquired Induslynk Training Services Private Ltd., an India-based talent assessment company, Pavilion Financial Corp., a Canada-based investment services firm and Summit Strategies Inc., a Missouri-based investment consulting firm.

Total purchase consideration for acquisitions made during 2018 was approximately $1.04 billion, which consisted of cash paid of $910 million and deferred purchase and estimated contingent consideration of $133 million. Contingent consideration arrangements are based primarily on EBITDA and/or revenue targets over periods of two to four years. The fair value of the contingent consideration was based on projected revenue and earnings of the acquired entities. Estimated fair values of assets acquired and liabilities assumed are subject to adjustment when purchase accounting is finalized. During 2018, the Company also paid $62 million of deferred purchase consideration and $91 million of contingent consideration related to acquisitions made in prior years.

The following table presents the preliminary allocation of the acquisition cost to the assets acquired and liabilities assumed, based on their fair values:

(In millions)	2018
Cash	$ 910
Estimated fair value of deferred/contingent consideration	133
Total consideration	$ 1,043
Allocation of purchase price:	
Cash and cash equivalents	$ 26
Accounts receivable, net	49
Other current assets	4
Property, plant, and equipment	8
Other intangible assets	405
Goodwill	626
Other assets	8
Total assets acquired	1,126
Current liabilities	37
Other liabilities	46
Total liabilities assumed	83
Net assets acquired	$ 1,043

Other intangible assets acquired are based on initial estimates and subject to change based on final valuations during the measurement period post acquisition date. The following chart provides information of other intangible assets acquired during 2018:

	Amount	Weighted Average Amortization Period
Client relationships	$ 378	13 years
Other (a)	27	5 years
	$ 405	

(a) Primarily non-compete agreements, trade names and developed technology.

Prior Year Acquisitions

During 2017, the Risk and Insurance Services segment completed 7 acquisitions.

- January – Marsh & McLennan Agency ("MMA") acquired J. Smith Lanier & Co. ("JSL"), a privately held insurance brokerage firm providing insurance, risk management, and employee benefits solutions to businesses and individuals throughout the U.S.
- February – MMA acquired iaConsulting, a Texas-based employee benefits consulting firm.
- March – MMA acquired Blakestad, Inc., a Minnesota-based private client and commercial lines insurance agency, and RJF Financial Services, a Minnesota-based retirement advisory firm.
- May – MMA acquired Insurance Partners of Texas, a Texas-based employee benefits consulting firm.
- August – Marsh acquired International Catastrophe Insurance Managers, LLC, a Colorado-based managing general agent providing property catastrophe insurance to business and homeowners, and MMA acquired Hendrick & Hendrick, Inc., a Texas-based insurance agency.

The Consulting segment completed 3 acquisitions during 2017.

- August – Mercer acquired Jaeson Associates, a Portugal-based talent management consulting organization.

- December – Mercer acquired Promerit AG, a Germany-based consultancy specializing in HR digitalization and business and HR transformation and BFC Asset Management Co., Ltd., a Japan-based independently owned asset manager, focused on alternative investment strategies.

Total purchase consideration for acquisitions made during 2017 was approximately $777 million, which consisted of cash paid of $668 million and deferred purchase and estimated contingent consideration of $109 million. Contingent consideration arrangements are based primarily on EBITDA and/or revenue targets over periods of two to four years. The fair value of the contingent consideration was based on projected revenue and earnings of the acquired entities. Estimated fair values of assets acquired and liabilities assumed are subject to adjustment when purchase accounting is finalized. During 2017, the Company also paid $55 million of deferred purchase consideration and $108 million of contingent consideration related to acquisitions made in prior years.

Pro-Forma Information

The following unaudited pro-forma financial data gives effect to the acquisitions made by the Company during 2018, 2017 and 2016. In accordance with accounting guidance related to pro-forma disclosures, the information presented for current year acquisitions is as if they occurred on January 1, 2017 and reflects acquisitions made in 2017 as if they occurred on January 1, 2016. The 2016 information includes 2016 acquisitions as if they occurred on January 1, 2015. The pro-forma information includes the effects of amortization of acquired intangibles. The unaudited pro-forma financial data is presented for illustrative purposes only and is not necessarily indicative of the operating results that would have been achieved if such acquisitions had occurred on the dates indicated, nor is it necessarily indicative of future consolidated results.

	Years Ended December 31,		
(In millions, except per share data)	**2018**	2017	2016
Revenue	**$ 15,174**	$ 14,440	$ 13,724
Income from continuing operations	**$ 1,680**	$ 1,516	$ 1,787
Net income attributable to the Company	**$ 1,660**	$ 1,498	$ 1,759
Basic net income per share:			
– Continuing operations	**$ 3.28**	$ 2.92	$ 3.39
– Net income attributable to the Company	**$ 3.28**	$ 2.92	$ 3.39
Diluted net income per share:			
– Continuing operations	**$ 3.25**	$ 2.88	$ 3.36
– Net income attributable to the Company	**$ 3.25**	$ 2.89	$ 3.36

The consolidated statement of income for 2018 includes approximately $120 million of revenue and $2 million of operating income related to acquisitions made during 2018. The consolidated statement of income for 2017 includes approximately $156 million of revenue and $19 million of operating income related to acquisitions made during 2017, and the consolidated statement of income for 2016 includes approximately $25 million of revenue and $4 million of operating income related to acquisitions made during 2016.

Acquisition-related expenses incurred in 2018 and 2017 were $7 million and $3 million, respectively.

Pending Acquisition

On September 18, 2018, the Company announced that it had reached agreement on the terms of a recommended cash acquisition of Jardine Lloyd Thompson Group plc ("JLT"), a public company organized under the laws of England and Wales (the "Transaction"). JLT is a provider of insurance, reinsurance and employee benefits related advice, brokerage and associated services with annual revenue of approximately $2 billion and 10,000 colleagues. Under the terms of the Transaction, JLT shareholders will receive £19.15 in cash for each JLT share, which values JLT's existing issued and to be issued share capital at approximately £4.3 billion (or approximately $5.6 billion based on an exchange rate of U.S. $1.31:£1). The Company intends to implement the Transaction by way of a scheme of arrangement under Part 26 of the United Kingdom Companies Act 2006, as amended.

On November 7, 2018, the Transaction received the requisite approval of JLT shareholders. The Transaction remains subject to conditions and certain further terms, including, among others, (i) the sanction of the Transaction by the High Court of Justice in England and Wales, (ii) completion of the Transaction no later than December 31, 2019 and (iii) the receipt of certain antitrust, regulatory and other approvals. Subject to the satisfaction or waiver of all relevant conditions, the Transaction is expected to be completed in the spring of 2019.

Financing and hedging activities related to the Transaction are discussed in more detail in Notes 11 and 13 of the consolidated financial statements.

Dispositions

In September 2018, Marsh completed its sale of a risk management software and services business resulting in a pre-tax gain of $46 million, which is included in revenue in the consolidated statement of income.

In December 2015, Mercer sold its U.S. defined contribution recordkeeping business. The Company recognized a pre-tax gain of $6 million in 2016 from this transaction, which is included in revenue in the consolidated statements of income in that year.

6. Goodwill and Other Intangibles

The Company is required to assess goodwill and any indefinite-lived intangible assets for impairment annually, or more frequently if circumstances indicate impairment may have occurred. The Company performs the annual impairment assessment for each of its reporting units during the third quarter of each year. In accordance with applicable accounting guidance, the Company assesses qualitative factors to determine whether it is necessary to perform the two-step goodwill impairment test. As part of its assessment, the Company considers numerous factors, including that the fair value of each reporting unit exceeds its carrying value by a substantial margin based on its most recent estimates, whether significant acquisitions or dispositions occurred which might alter the fair value of its reporting units, macroeconomic conditions and their potential impact on reporting unit fair values, actual performance compared with budget and prior projections used in its estimation of reporting unit fair values, industry and market conditions, and the year-over-year change in the Company’s share price. The Company completed its qualitative assessment in the third quarter of 2018 and concluded that a two-step goodwill impairment test was not required in 2018 and that goodwill was not impaired.

Other intangible assets that are not deemed to have an indefinite life are amortized over their estimated lives and reviewed for impairment upon the occurrence of certain triggering events in accordance with applicable accounting literature. The Company concluded that these intangible assets are not impaired.

Changes in the carrying amount of goodwill are as follows:

(In millions of dollars)	**2018**	2017
Balance as of January 1, as reported	**$ 9,089**	$ 8,369
Goodwill acquired	**626**	551
Other adjustments[(a)]	**(116)**	169
Balance at December 31,	**$ 9,599**	$ 9,089

(a) Primarily due to the impact of foreign exchange in both years.

The goodwill acquired of $626 million in 2018 (approximately $359 million of which is deductible for tax purposes) is comprised of $402 million related to the Risk and Insurance Services segment and $224 million related to the Consulting segment.

Goodwill allocable to the Company’s reportable segments is as follows: Risk and Insurance Services, $6.8 billion and Consulting, $2.8 billion.

The gross cost and accumulated amortization at December 31, 2018 and 2017 are as follows:

(In millions of dollars)	**2018**			2017		
	Gross Cost	**Accumulated Amortization**	**Net Carrying Amount**	Gross Cost	Accumulated Amortization	Net Carrying Amount
Client relationships	**$ 1,970**	**$ 639**	**$ 1,331**	$ 1,672	$ 518	$ 1,154
Other (a)	**259**	**153**	**106**	234	114	120
Amortized intangibles	**$ 2,229**	**$ 792**	**$ 1,437**	$ 1,906	$ 632	$ 1,274

(a) Primarily non-compete agreements, trade names and developed technology.

Aggregate amortization expense was $183 million for the year ended December 31, 2018, $169 million for the year ended December 31, 2017 and $130 million for the year ended December 31, 2016. The estimated future aggregate amortization expense is as follows:

For the Years Ending December 31, *(In millions of dollars)*	
2019	$ 195
2020	176
2021	164
2022	149
2023	141
Subsequent years	612
	$ 1,437

7. Income Taxes

For financial reporting purposes, income before income taxes includes the following components:

For the Years Ended December 31, *(In millions of dollars)*	**2018**	2017	2016
Income before income taxes:			
U.S.	**$ 460**	$ 819	$ 725
Other	**1,784**	1,824	1,755
	$ 2,244	$ 2,643	$ 2,480

The expense for income taxes is comprised of:			
Current –			
U.S. Federal	**$ 82**	$ 313	$ 208
Other national governments	**449**	388	366
U.S. state and local	**82**	36	43
	613	737	617
Deferred –			
U.S. Federal	**(30)**	286	26
Other national governments	**(1)**	72	32
U.S. state and local	**(8)**	38	10
	(39)	396	68
Total income taxes	**$ 574**	$ 1,133	$ 685

The significant components of deferred income tax assets and liabilities and their balance sheet classifications are as follows:

December 31, *(In millions of dollars)*	**2018**	2017
Deferred tax assets:		
Accrued expenses not currently deductible	**$ 526**	$ 369
Differences related to non-U.S. operations [(a)]	**170**	139
Accrued U.S. retirement benefits	**406**	394
Net operating losses [(b)]	**48**	67
Income currently recognized for tax	**20**	49
Other	**16**	31
	$ 1,186	$ 1,049

Deferred tax liabilities:		
Differences related to non-U.S. operations	**$ 287**	$ 235
Depreciation and amortization	**342**	338
Accrued retirement & postretirement benefits - non-U.S. operations	**171**	172
Capitalized expenses currently recognized for tax	**78**	—
Other	**49**	16
	$ 927	$ 761

(a) Net of valuation allowances of $21 million in 2018 and $18 million in 2017.
(b) Net of valuation allowances of $45 million in 2018 and $11 million in 2017.

December 31, *(In millions of dollars)*	**2018**	2017
Balance sheet classifications:		
Deferred tax assets	**$ 680**	$ 669
Other liabilities	**$ 421**	$ 381

Taxes are not provided on the excess of the amount for financial reporting over the tax basis of investments in foreign subsidiaries that are essentially permanent in duration, which, at December 31, 2018, the Company estimates amounted to approximately $2.3 billion. The determination of the unrecognized deferred tax liability with respect to these investments is not practicable.

A reconciliation from the U.S. Federal statutory income tax rate to the Company's effective income tax rate is shown below:

For the Years Ended December 31,	**2018**	2017	2016
U.S. Federal statutory rate	**21.0%**	35.0%	35.0%
U.S. state and local income taxes—net of U.S. Federal income tax benefit	**2.3**	1.5	1.5
Differences related to non-U.S. operations	**3.3**	(8.6)	(9.2)
U.S. Tax Reform	**(0.3)**	17.4	—
Equity compensation	**(1.0)**	(2.6)	—
Other	**0.3**	0.2	0.3
Effective tax rate	**25.6%**	42.9%	27.6%

The Company's consolidated effective tax rate was 25.6%, 42.9% and 27.6% in 2018, 2017 and 2016, respectively. The tax rate in 2017 and 2016 reflects foreign operations, which were generally taxed at rates lower than the U.S. statutory tax rate. The effective tax rate in 2017 reflects a provisional estimate of the impact of the enactment of the TCJA, as well as the impact of the required change in accounting for equity awards.

The TCJA provided for a transition to a new method of taxing non-U.S. based operations via a transition tax on undistributed earnings of non-U.S. subsidiaries. The Company recorded a provisional charge of $240 million in the fourth quarter of 2017 as an estimate of U.S. transition taxes and ancillary effects, including state taxes and foreign withholding taxes related to the change in permanent reinvestment status with respect to our pre-2018 foreign earnings. This transition tax is payable over eight years. The reduction of the U.S. corporate tax rate from 35% to 21% reduced the value of the U.S. deferred tax assets and liabilities; accordingly, a charge of $220 million was recorded. Adjustments during 2018 to the provisional estimates of transition taxes and U.S. deferred tax assets and liabilities decreased income tax expense by $5 million. These amounts are now final.

Prior to 2017, the Company considered most unremitted earnings of its non-U.S. subsidiaries, except amounts repatriated in the year earned, to be permanently reinvested and, accordingly, recorded no deferred U.S. income taxes on such earnings. As a result of the transition tax, the Company has begun repatriating most of the accumulated pre-2018 earnings that were previously intended to be permanently re-invested. We continue to evaluate our global investment and repatriation strategy in light of U.S. tax reform under the new quasi-territorial tax regime for future foreign earnings.

Valuation allowances had net increases of $36 million and $9 million in 2018 and 2017, respectively and a net decrease of $8 million in 2016. Adjustments of the beginning of the year balances of valuation allowances increased income tax expense by $1 million and $11 million in 2018 and 2017, respectively, and decreased income tax expense by $7 million in 2016. Approximately 53% of the Company's net operating loss carryforwards expire from 2019 through 2037, and others are unlimited. The potential tax benefit from net operating loss carryforwards at the end of 2018 comprised federal, state and local, and non-U.S. tax benefits of $3 million, $42 million and $57 million, respectively, before reduction for valuation allowances.

The realization of deferred tax assets depends on generating future taxable income during the periods in which the tax benefits are deductible or creditable. Tax liabilities are determined and assessed jurisdictionally by legal entity or filing group. Certain taxing jurisdictions allow or require combined or consolidated tax filings. The Company assessed the realizability of its deferred tax assets. The Company considered all available evidence, including the existence of a recent history of losses, placing particular weight on evidence that could be objectively verified. A valuation allowance was recorded to reduce deferred tax assets to the amount that the Company believes is more likely than not to be realized.

Following is a reconciliation of the Company's total gross unrecognized tax benefits for the years ended December 31, 2018, 2017 and 2016:

(In millions of dollars)		**2018**		2017		2016
Balance at January 1,	**$**	**71**	$	65	$	74
Additions, based on tax positions related to current year		**6**		1		2
Additions for tax positions of prior years		**6**		14		6
Reductions for tax positions of prior years		**—**		(6)		(6)
Settlements		**(2)**		—		(7)
Lapses in statutes of limitation		**(3)**		(3)		(4)
Balance at December 31,	**$**	**78**	$	71	$	65

Of the total unrecognized tax benefits at December 31, 2018, 2017 and 2016, $64 million, $56 million and $53 million, respectively, represent the amount that, if recognized, would favorably affect the effective tax rate in any future periods. The total gross amount of accrued interest and penalties at December 31, 2018, 2017 and 2016, before any applicable federal benefit, was $15 million, $12 million and $11 million, respectively.

The Company is routinely examined by the jurisdictions in which it has significant operations. In the U.S. federal jurisdiction the Company participates in the Internal Revenue Service's (IRS) Compliance

Assurance Process (CAP), which is structured to conduct real-time compliance reviews. The IRS is currently examining the Company’s 2016 and 2017 tax returns and is performing a pre-filing review of 2018. In 2018, the Company settled its federal audit for the year 2015.

During 2018, New York State and New York City closed the examination of tax years 2007 through 2009. New York State and New York City have examinations underway for various entities covering the years 2009 through 2014. Outside the United States, there are ongoing examinations in Italy for the tax year 2015, Canada of tax years 2013 through 2016, and in Singapore for the tax years 2014 through 2016. During 2018, the United Kingdom concluded an examination of tax years 2014 and 2015, and an examination of year 2016 is ongoing. During 2018, examinations in Germany for the years 2009 through 2012, and in France for the years 2011 and 2012 were concluded. The Company regularly considers the likelihood of assessments in each of the taxing jurisdictions resulting from examinations. The Company has established liabilities for uncertain tax positions in relation to the potential assessments. The Company believes the resolution of tax matters will not have a material effect on the consolidated financial position of the Company, although a resolution of tax matters could have a material impact on the Company's net income or cash flows and on its effective tax rate in a particular future period. It is reasonably possible that the total amount of unrecognized tax benefits will decrease between zero and approximately $10 million within the next twelve months due to settlement of audits and expiration of statutes of limitation.

8. Retirement Benefits

The Company maintains qualified and non-qualified defined benefit pension plans for its U.S. and non-U.S. eligible employees. The Company’s policy for funding its tax qualified defined benefit retirement plans is to contribute amounts at least sufficient to meet the funding requirements set forth by U.S. law and the laws of the non-U.S. jurisdictions in which the Company offers defined benefit plans.

Combined U.S. and non-U.S. Plans

The weighted average actuarial assumptions utilized for the U.S. and significant non-U.S. defined benefit plans and postretirement benefit plans are as follows:

	Pension Benefits		Postretirement Benefits	
	2018	2017	**2018**	2017
Weighted average assumptions:				
Discount rate (for expense)	**3.07%**	3.40%	**3.21%**	3.64%
Expected return on plan assets	**5.83%**	6.64%	**—**	—
Rate of compensation increase (for expense)	**1.73%**	1.77%	**—**	—
Discount rate (for benefit obligation)	**3.48%**	3.07%	**3.65%**	3.21%
Rate of compensation increase (for benefit obligation)	**1.74%**	1.73%	**—**	—

The Company uses actuaries from Mercer, a subsidiary of the Company, to perform valuations of its pension plans. The long-term rate of return on plan assets assumption is determined for each plan based on the facts and circumstances that exist as of the measurement date, and the specific portfolio mix of each plan’s assets. The Company utilizes a model developed by the Mercer actuaries to assist in the determination of this assumption. The model takes into account several factors, including: actual and target portfolio allocation; investment, administrative and trading expenses incurred directly by the plan trust; historical portfolio performance; relevant forward-looking economic analysis; and expected returns, variances and correlations for different asset classes. These measures are used to determine probabilities using standard statistical techniques to calculate a range of expected returns on the portfolio. Generally, the Company does not adjust the rate of return assumption from year to year if, at the measurement date, it is within the range between the 25th and 75th percentile of the expected long-term annual returns. Historical long-term average asset returns of the most significant plans are also reviewed to determine whether they are consistent and reasonable compared with the rate selected. The expected return on plan assets is determined by applying the assumed long-term rate of return to the market-related value of plan assets. This market-related value recognizes investment gains or losses over a five-year period from the year in which they occur. Investment gains or losses for this purpose are the difference between the expected return calculated using the market-related value of assets and the actual return based on the market value of assets. Since the market-related value of assets recognizes gains or losses over a five-year period, the future market-related value of the assets will be impacted as previously deferred gains or losses are reflected.

The target asset allocation for the U.S. Plans is 64% equities and equity alternatives and 36% fixed income. At the end of 2018, the actual allocation for the U.S. Plans was 62% equities and equity alternatives and 38% fixed income. The target asset allocation for the U.K. Plans, which comprise approximately 81% of non-U.S. Plan assets, is 34% equities and equity alternatives and 66% fixed income. At the end of 2018, the actual allocation for the U.K. Plans was 34% equities and equity alternatives and 66% fixed income. The assets of the Company's defined benefit plans are diversified and are managed in accordance with applicable laws and with the goal of maximizing the plans' real return within acceptable risk parameters. The Company uses threshold-based portfolio re-balancing to ensure the actual portfolio remains consistent with target asset allocation ranges.

The discount rate selected for each U.S. plan is based on a model bond portfolio with coupons and redemptions that closely match the expected liability cash flows from the plan. Discount rates for non-U.S. plans are based on appropriate bond indices adjusted for duration; in the U.K., the plan duration is reflected using the Mercer yield curve.

The components of the net periodic benefit cost for defined benefit and other postretirement plans are as follows:

Combined U.S. and significant non-U.S. Plans	Pension			Postretirement		
For the Years Ended December 31,	Benefits			Benefits		
(In millions of dollars)	**2018**	2017	2016	**2018**	2017	2016
Service cost	**$ 34**	$ 76	$ 178	**$ 1**	$ 1	$ 2
Interest cost	**463**	497	537	**3**	4	5
Expected return on plan assets	**(864)**	(921)	(940)	**—**	—	—
Amortization of prior service (credit) cost	**(2)**	(2)	(1)	**(2)**	1	4
Recognized actuarial loss (gain)	**146**	167	168	**(1)**	—	(2)
Net periodic benefit (credit) cost	**$ (223)**	$ (183)	$ (58)	**$ 1**	$ 6	$ 9
Curtailment (loss) gain	**—**	(1)	(4)	**—**	—	—
Settlement loss	**42**	54	—	**—**	—	—
Total (credit) cost	**$ (181)**	$ (130)	$ (62)	**$ 1**	$ 6	$ 9

As discussed in Note 1, effective January 1, 2018, the Company adopted the new guidance that changes the presentation of net periodic pension cost and net periodic post-retirement cost ("net periodic benefit costs"). The new guidance requires employers to report the service cost component of net periodic benefit costs in the same line item as other compensation costs in the income statement. The other components of net periodic benefit costs are required to be presented in the income statement separately from the service cost component and outside a subtotal of income from operations. The new guidance requires retrospective application for the presentation of the service cost component and the other components of net periodic benefit costs. Accordingly, the Company has reclassified prior period information in the following chart to conform with the current year's presentation:

Amounts Recorded in the Consolidated Statement of Income						
Combined U.S. and significant non-U.S. plans For the Years Ended December 31,	Pension Benefits			Post-retirement Benefits		
(In millions)	**2018**	2017	2016	**2018**	2017	2016
Compensation and benefits expense (Operating income)	**$ 34**	$ 76	$ 178	**$ 1**	$ 1	$ 2
Other net benefit (credit) cost	**(215)**	(206)	(240)	**—**	5	7
Total (credit) cost	**$ (181)**	$ (130)	$ (62)	**$ 1**	$ 6	$ 9

Pension Settlement Charge

Defined Benefit Pension Plans in the U.K. allow participants an option for the payment of a lump sum distribution from plan assets before retirement in full satisfaction of the retirement benefits due to the participant as well as any survivor's benefit. The Company's policy under applicable U.S. GAAP is to treat these lump sum payments as a partial settlement of the plan liability if they exceed the total of interest plus service costs ("settlement thresholds"). Based on the amount of lump sum payments through December 31, 2018, the lump sum payments exceeded the settlement thresholds in two of the U.K. plans. The Company recorded non-cash settlement charges of $42 million and $54 million, recorded in the consolidated statements of income for the twelve month periods ended December 31, 2018 and 2017, respectively, primarily related to these plans.

Plan Assets

For the U.S. Plans, investment allocation decisions are made by a fiduciary committee composed of senior executives appointed by the Company's Chief Executive Officer. For the non-U.S. plans, investment allocation decisions are made by local fiduciaries, in consultation with the Company for the larger plans. Plan assets are invested in a manner consistent with the fiduciary standards set forth in all relevant laws relating to pensions and trusts in each country. Primary investment objectives are (1) to achieve an investment return that, in combination with current and future contributions, will provide sufficient funds to pay benefits as they become due, and (2) to minimize the risk of large losses. The investment allocations are designed to meet these objectives by broadly diversifying plan assets among numerous asset classes with differing expected returns, volatilities, and correlations.

The major categories of plan assets include equity securities, equity alternative investments, and fixed income securities. For the U.S. Plan, the category ranges are 59-69% for equities and equity alternatives, and 31-41% for fixed income. For the U.K. Plans, the category ranges are 31-37% for equities and equity alternatives, and 63-69% for fixed income. Asset allocation is monitored frequently and re-balancing actions are taken as appropriate.

Plan investments are exposed to stock market, interest rate, and credit risk. Concentrations of these risks are generally limited due to diversification by investment style within each asset class, diversification by investment manager, diversification by industry sectors and issuers, and the dispersion of investments across many geographic areas.

Unrecognized Actuarial Gains/Losses

In accordance with applicable accounting guidance, the funded status of the Company's pension plans is recorded in the consolidated balance sheets and provides for a delayed recognition of actuarial gains or losses arising from changes in the projected benefit obligation due to changes in the assumed discount rates, differences between the actual and expected value of plan assets and other assumption changes. The unrecognized pension plan actuarial gains or losses and prior service costs not yet recognized in net periodic pension cost are recognized in Accumulated Other Comprehensive Income ("AOCI"), net of tax. These gains and losses are amortized prospectively out of AOCI over a period that approximates the remaining life expectancy of participants in plans where substantially all participants are inactive, or the average remaining service period of active participants for plans with active participants.

U.S. Plans

The following schedules provide information concerning the Company's U.S. defined benefit pension plans and postretirement benefit plans:

	U.S. Pension Benefits		U.S. Postretirement Benefits	
(In millions of dollars)	**2018**	2017	**2018**	2017
Change in benefit obligation:				
Benefit obligation at beginning of year	**$ 6,221**	$ 5,894	**$ 36**	$ 37
Interest cost	**235**	264	**1**	2
Employee contributions	**—**	—	**4**	3
Actuarial (gain) loss	**(502)**	538	**(1)**	3
Benefits paid	**(425)**	(475)	**(8)**	(9)
Benefit obligation, December 31	**$ 5,529**	$ 6,221	**$ 32**	$ 36
Change in plan assets:				
Fair value of plan assets at beginning of year	**$ 4,787**	$ 4,365	**$ 2**	$ 2
Actual return on plan assets	**(330)**	812	**—**	—
Employer contributions	**30**	85	**3**	6
Employee contributions	**—**	—	**4**	3
Benefits paid	**(425)**	(475)	**(8)**	(9)
Fair value of plan assets, December 31	**$ 4,062**	$ 4,787	**$ 1**	$ 2
Net funded status, December 31	**$ (1,467)**	$ (1,434)	**$ (31)**	$ (34)
Amounts recognized in the consolidated balance sheets:				
Current liabilities	**$ (28)**	$ (27)	**$ (2)**	$ (2)
Non-current liabilities	**(1,439)**	(1,407)	**(29)**	(32)
Net liability recognized, December 31	**$ (1,467)**	$ (1,434)	**$ (31)**	$ (34)
Amounts recognized in other comprehensive income (loss):				
Net actuarial (loss) gain	**(1,896)**	(1,766)	**6**	6
Total recognized accumulated other comprehensive (loss) income, December 31	**$ (1,896)**	$ (1,766)	**$ 6**	$ 6
Cumulative employer contributions in excess of (less than) net periodic cost	**429**	332	**(37)**	(40)
Net amount recognized in consolidated balance sheet	**$ (1,467)**	$ (1,434)	**$ (31)**	$ (34)
Accumulated benefit obligation at December 31	**$ 5,529**	$ 6,221	**$ —**	$ —

	U.S. Pension Benefits		U.S. Postretirement Benefits	
(In millions of dollars)	**2018**	2017	**2018**	2017
Reconciliation of prior service credit (cost) recognized in accumulated other comprehensive income (loss):				
Beginning balance	**$ —**	$ —	**$ —**	$ (3)
Recognized as component of net periodic benefit cost	**—**	—	**—**	3
Prior service cost, December 31	**$ —**	$ —	**$ —**	$ —

	U.S. Pension Benefits		U.S. Postretirement Benefits	
(In millions of dollars)	**2018**	2017	**2018**	2017
Reconciliation of net actuarial (loss) gain recognized in accumulated other comprehensive income (loss):				
Beginning balance	**$ (1,766)**	$ (1,720)	**$ 6**	$ 11
Recognized as component of net periodic benefit cost (credit)	**55**	37	**(1)**	(1)
Changes in plan assets and benefit obligations recognized in other comprehensive income (loss):				
Other	**—**	—	**—**	(1)
Liability experience	**502**	(538)	**1**	(3)
Asset experience	**(687)**	455	**—**	—
Total (loss) gain recognized as change in plan assets and benefit obligations	**(185)**	(83)	**1**	(4)
Net actuarial (loss) gain, December 31	**$ (1,896)**	$ (1,766)	**$ 6**	$ 6

For the Years Ended December 31,	U.S. Pension Benefits			U.S. Postretirement Benefits		
(In millions of dollars)	**2018**	2017	2016	**2018**	2017	2016
Total recognized in net periodic benefit cost and other comprehensive loss (income)	**$ 63**	$ (10)	$ 31	**$ —**	$ 5	$ 2

Estimated amounts that will be amortized from accumulated other comprehensive loss to net periodic pension cost in the next fiscal year:

	U.S. Pension Benefits	U.S. Postretirement Benefits
(In millions of dollars)	2019	2019
Net actuarial loss	$ 44	$ 1

The weighted average actuarial assumptions utilized in determining the above amounts for the U.S. defined benefit and other U.S. postretirement plans as of the end of the year are as follows:

	U.S. Pension Benefits		U.S. Postretirement Benefits	
	2018	2017	**2018**	2017
Weighted average assumptions:				
Discount rate (for expense)	**3.86%**	4.58%	**3.67%**	4.12%
Expected return on plan assets	**7.95%**	7.95%	**—**	—
Discount rate (for benefit obligation)	**4.45%**	3.86%	**4.24%**	3.67%

The projected benefit obligation, accumulated benefit obligation and aggregate fair value of plan assets for U.S. pension plans with accumulated benefit obligations in excess of plan assets were $5.5 billion, $5.5 billion and $4.1 billion, respectively, as of December 31, 2018 and $6.2 billion, $6.2 billion and $4.8 billion, respectively, as of December 31, 2017.

The projected benefit obligation and fair value of plan assets for U.S. pension plans with projected benefit obligations in excess of plan assets was $5.5 billion and $4.1 billion, respectively, as of December 31, 2018 and $6.2 billion and $4.8 billion, respectively, as of December 31, 2017.

As of December 31, 2018, the U.S. qualified plan holds 4 million shares of the Company's common stock which were contributed to the qualified plan by the Company in 2005. This represented approximately 7.9% of that plan's assets as of December 31, 2018.

The components of the net periodic benefit cost (credit) for the U.S. defined benefit and other postretirement benefit plans are as follows:

U.S. Plans only For the Years Ended December 31,	Pension Benefits			Postretirement Benefits		
(In millions of dollars)	**2018**	2017	2016	**2018**	2017	2016
Service cost	**$ —**	$ —	$ 106	**$ —**	$ —	$ —
Interest cost	**235**	264	264	**1**	2	2
Expected return on plan assets	**(357)**	(357)	(379)	**—**	—	—
Amortization of prior service cost	**—**	—	—	**—**	3	4
Recognized actuarial loss (gain)	**55**	37	74	**(1)**	(1)	(2)
Net periodic benefit (credit) cost	**$ (67)**	$ (56)	$ 65	**$ —**	$ 4	$ 4

In October 2016, the Company modified its U.S. defined benefit pension plans to discontinue further benefit accruals for participants after December 31, 2016. At the same time, the Company amended its U.S. defined contribution retirement plans for most of its U.S. employees to add an automatic Company contribution equal to 4% of eligible base pay beginning on January 1, 2017. This new Company contribution, together with the Company's matching contribution, provides eligible U.S. employees with the opportunity to receive a total contribution of up to 7% of eligible base pay. As required under GAAP, the defined benefit plans that were significantly impacted by the modification were re-measured in October 2016 using market data and assumptions as of the modification date. The net periodic pension expense recognized in 2016 reflects the weighted average costs of the December 31, 2015 measurement and the October 2016 re-measurement. In addition, the Company's two U.S. qualified plans were merged effective December 30, 2016.

The assumed health care cost trend rate for Medicare eligibles and non-Medicare eligibles is approximately 6.19% in 2018, gradually declining to 4.5% in 2039. Assumed health care cost trend rates have a small effect on the amounts reported for the U.S. health care plans because the Company caps its share of health care trend at 5%. A one percentage point change in assumed health care cost trend rates would have no effect on the total service and interest cost components or the postretirement benefit obligation.

Estimated Future Contributions

The Company expects to contribute approximately $28 million to its U.S. plans in 2019. The Company's policy for funding its tax-qualified defined benefit retirement plans is to contribute amounts at least sufficient to meet the funding requirements set forth in the U.S. and applicable foreign law.

Non-U.S. Plans

The following schedules provide information concerning the Company's non-U.S. defined benefit pension plans and non-U.S. postretirement benefit plans:

	Non-U.S. Pension Benefits		Non-U.S. Postretirement Benefits	
(In millions of dollars)	**2018**	2017	**2018**	2017
Change in benefit obligation:				
Benefit obligation at beginning of year	**$ 10,053**	$ 9,670	**$ 68**	$ 81
Service cost	**34**	76	**1**	1
Interest cost	**228**	233	**2**	2
Employee contributions	**2**	7	**—**	—
Actuarial (gain) loss	**(450)**	(149)	**(8)**	—
Plan amendments	**44**	—	**—**	(17)
Effect of settlement	**(162)**	(211)	**—**	—
Effect of curtailment	**—**	(1)	**—**	—
Benefits paid	**(290)**	(291)	**(3)**	(3)
Foreign currency changes	**(491)**	703	**(3)**	4
Other	**1**	16	**—**	—
Benefit obligation, December 31	**$ 8,969**	$ 10,053	**$ 57**	$ 68
Change in plan assets:				
Fair value of plan assets at beginning of year	**$ 11,388**	$ 10,017	**$ —**	$ —
Actual return on plan assets	**(141)**	875	**—**	—
Effect of settlement	**(162)**	(211)	**—**	—
Company contributions	**82**	229	**3**	3
Employee contributions	**2**	7	**—**	—
Benefits paid	**(290)**	(291)	**(3)**	(3)
Foreign currency changes	**(573)**	749	**—**	—
Other	**—**	13	**—**	—
Fair value of plan assets, December 31	**$ 10,306**	$ 11,388	**$ —**	$ —
Net funded status, December 31	**$ 1,337**	$ 1,335	**$ (57)**	$ (68)
Amounts recognized in the consolidated balance sheets:				
Non-current assets	**$ 1,687**	$ 1,684	**$ —**	$ —
Current liabilities	**(5)**	(6)	**(3)**	(4)
Non-current liabilities	**(345)**	(343)	**(54)**	(64)
Net asset (liability) recognized, December 31	**$ 1,337**	$ 1,335	**$ (57)**	$ (68)
Amounts recognized in other comprehensive (loss) income:				
Prior service credit	**$ (2)**	$ 43	**$ 12**	$ 15
Net actuarial loss	**(2,568)**	(2,646)	**(1)**	(10)
Total recognized accumulated other comprehensive (loss) income, December 31	**$ (2,570)**	$ (2,603)	**$ 11**	$ 5
Cumulative employer contributions in excess of (less than) net periodic cost	**3,907**	3,938	**(68)**	(73)
Net asset (liability) recognized in consolidated balance sheets, December 31	**$ 1,337**	$ 1,335	**$ (57)**	$ (68)
Accumulated benefit obligation, December 31	**$ 8,752**	$ 9,783	**$ —**	$ —

	Non-U.S. Pension Benefits		Non-U.S. Postretirement Benefits	
(In millions of dollars)	**2018**	2017	**2018**	2017
Reconciliation of prior service credit (cost) recognized in accumulated other comprehensive income (loss):				
Beginning balance	**$ 43**	$ 43	**$ 15**	$ —
Recognized as component of net periodic benefit credit:				
Amortization of prior service credit	**(2)**	(2)	**(2)**	(2)
Effect of curtailment	**—**	(1)	**—**	—
Total recognized as component of net periodic benefit credit	**(2)**	(3)	**(2)**	(2)
Changes in plan assets and benefit obligations recognized in other comprehensive income:				
Plan amendments	**(44)**	—	**—**	17
Exchange rate adjustments	**1**	3	**(1)**	—
Prior service credit, December 31	**$ (2)**	$ 43	**$ 12**	$ 15

	Non-U.S. Pension Benefits		Non-U.S. Postretirement Benefits	
(In millions of dollars)	**2018**	2017	**2018**	2017
Reconciliation of net actuarial (loss) gain recognized in accumulated other comprehensive (loss) income:				
Beginning balance	**$ (2,646)**	$ (3,081)	**$ (10)**	$ (11)
Recognized as component of net periodic benefit cost:				
Amortization of net loss	**91**	130	**—**	1
Effect of settlement	**42**	54	**—**	—
Total recognized as component of net periodic benefit credit	**133**	184	**—**	1
Changes in plan assets and benefit obligations recognized in other comprehensive income (loss):				
Liability experience	**450**	149	**8**	—
Asset experience	**(648)**	311	**—**	—
Other	**3**	(5)	**—**	—
Effect of curtailment	**—**	1	**—**	—
Total amount recognized as change in plan assets and benefit obligations	**(195)**	456	**8**	—
Exchange rate adjustments	**140**	(205)	**1**	—
Net actuarial loss, December 31	**$ (2,568)**	$ (2,646)	**$ (1)**	$ (10)

For the Years Ended December 31,	Non-U.S. Pension Benefits			Non-U.S. Postretirement Benefits		
(In millions of dollars)	**2018**	2017	2016	**2018**	2017	2016
Total recognized in net periodic benefit cost and other comprehensive (income) loss	**$ (147)**	$ (513)	$ 21	**$ (5)**	$ (14)	$ 10

Estimated amounts that will be amortized from accumulated other comprehensive loss to net periodic pension cost in the next fiscal year:

	Non-U.S. Pension Benefits	Non-U.S. Postretirement Benefits
(In millions of dollars)	**2019**	**2019**
Prior service credit	**$ —**	**$ (2)**
Net actuarial loss	**59**	**—**
Projected cost	**$ 59**	**$ (2)**

The weighted average actuarial assumptions utilized for the non-U.S. defined and postretirement benefit plans as of the end of the year are as follows:

	Non-U.S. Pension Benefits		Non-U.S. Postretirement Benefits	
	2018	2017	**2018**	2017
Weighted average assumptions:				
Discount rate (for expense)	**2.58%**	2.69%	**2.97%**	3.42%
Expected return on plan assets	**4.94%**	6.07%	**—**	—
Rate of compensation increase (for expense)	**2.80%**	2.85%	**—**	—
Discount rate (for benefit obligation)	**2.89%**	2.58%	**3.32%**	2.97%
Rate of compensation increase (for benefit obligation)	**2.82%**	2.80%	**—**	—

The projected benefit obligation, accumulated benefit obligation and fair value of plan assets for the non-U.S. pension plans with accumulated benefit obligations in excess of plan assets were $1.7 billion, $1.6 billion and $1.3 billion, respectively, as of December 31, 2018 and $1.3 billion, $1.2 billion and $1.0 billion, respectively, as of December 31, 2017.

The projected benefit obligation and fair value of plan assets for non-U.S. pension plans with projected benefit obligations in excess of plan assets was $1.9 billion and $1.6 billion, respectively, as of December 31, 2018 and $2.2 billion and $1.9 billion, respectively, as of December 31, 2017.

Non-U.S. Plan Amendments

In March 2017, the Company modified its defined benefit pension plans in Canada to discontinue further benefit accruals for participants after December 31, 2017 and replaced them with a defined contribution arrangement. The Company also amended its post-retirement benefits plan in Canada so that individuals who retire after April 1, 2019 will not be eligible to participate, except in certain situations. The Company re-measured the assets and liabilities of the plans, based on assumptions and market conditions on the amendment date.

Components of Net Periodic Benefits Costs

The components of the net periodic benefit cost for the non-U.S. defined benefit and other postretirement benefit plans and the curtailment, settlement and termination expenses are as follows:

For the Years Ended December 31,	Non-U.S. Pension Benefits			Non-U.S. Postretirement Benefits		
(In millions of dollars)	**2018**	2017	2016	**2018**	2017	2016
Service cost	**$ 34**	$ 76	$ 72	**$ 1**	$ 1	$ 2
Interest cost	**228**	233	273	**2**	2	3
Expected return on plan assets	**(507)**	(564)	(561)	**—**	—	—
Amortization of prior service credit	**(2)**	(2)	(1)	**(2)**	(2)	—
Recognized actuarial loss	**91**	130	94	**—**	1	—
Net periodic benefit (credit) cost	**(156)**	(127)	(123)	**1**	2	5
Settlement loss	**42**	54	—	**—**	—	—
Curtailment (gain) loss	**—**	(1)	(4)	**—**	—	—
Total (credit) cost	**$ (114)**	$ (74)	$ (127)	**$ 1**	$ 2	$ 5

The non-U.S. pension credit in 2018 and 2017 includes the impact of the pension settlement charges in the U.K., as previously discussed.

The assumed health care cost trend rate was approximately 5.09% in 2018, gradually declining to 4.46% in 2026. Assumed health care cost trend rates can have a significant effect on the amounts reported for the non-U.S. health care plans. A one percentage point change in assumed health care cost trend rates would have the following effects:

(In millions of dollars)	1 Percentage Point Increase	1 Percentage Point Decrease
Effect on total of service and interest cost components	$ —	$ —
Effect on postretirement benefit obligation	$ 6	$ (5)

Estimated Future Contributions

The Company expects to contribute approximately $65 million to its non-U.S. pension plans in 2019. Funding requirements for non-U.S. plans vary by country. Contribution rates are generally based on local funding practices and requirements, which may differ significantly from measurements under U.S. GAAP. Funding amounts may be influenced by future asset performance, the level of discount rates and other variables impacting the assets and/or liabilities of the plan. Discretionary contributions may also be affected by alternative uses of the Company's cash flows, including dividends, investments and share repurchases.

In the U.K., the assumptions used to determine pension contributions are the result of legally-prescribed negotiations between the Company and the plans' trustee that typically occurs every three years in conjunction with the actuarial valuation of the plans. Currently, this results in a lower funded status than under U.S. GAAP and may result in contributions irrespective of the U.S. GAAP funded status. In November 2016, the Company and the Trustee of the U.K. Defined Benefits Plans agreed to a funding deficit recovery plan for the U.K. defined benefit pension plans. The current agreement with the Trustee sets out the annual deficit contributions which would be due based on the deficit at December 31, 2015. The funding level is subject to re-assessment, in most cases on November 1 of each year. If the funding level on November 1 is sufficient, no deficit funding contributions will be required in the following year, and the contribution amount will be deferred. The funding level was re-assessed on November 1, 2018 and no deficit funding contributions are required in 2019. The funding level will be re-assessed on November 1, 2019. As part of a long-term strategy, which depends on having greater influence over asset allocation and overall investment decisions, in November 2016 the Company renewed its agreement to support annual deficit contributions by the U.K. operating companies under certain circumstances, up to GBP 450 million over a seven-year period.

Estimated Future Benefit Payments

The estimated future benefit payments for the Company's pension and postretirement benefit plans are as follows:

For the Years Ended December 31,	Pension Benefits		Postretirement Benefits	
(In millions of dollars)	U.S.	Non-U.S.	U.S.	Non-U.S.
2019	$ 264	$ 272	$ 4	$ 3
2020	$ 277	$ 282	$ 4	$ 3
2021	$ 291	$ 291	$ 4	$ 3
2022	$ 299	$ 302	$ 3	$ 3
2023	$ 306	$ 320	$ 3	$ 3
2024-2028	$ 1,626	$ 1,768	$ 12	$ 15

Defined Benefit Plans Fair Value Disclosures

The U.S. and non-U.S. plan investments are classified into Level 1, which refers to investments valued using quoted prices from active markets for identical assets; Level 2, which refers to investments not traded on an active market but for which observable market inputs are readily available; Level 3, which refers to investments valued based on significant unobservable inputs; and NAV, which refers to investments valued using net asset value as a practical expedient. Assets and liabilities are classified in their entirety based on the lowest level of input that is significant to the fair value measurement.

The following table sets forth, by level within the fair value hierarchy, a summary of the U.S. and non-U.S. plans' investments measured at fair value on a recurring basis at December 31, 2018 and 2017:

	Fair Value Measurements at December 31, 2018				
Assets *(In millions of dollars)*	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	NAV	Total
Common/collective trusts	**$ 291**	**$ —**	**$ —**	**$ 5,329**	**$ 5,620**
Corporate obligations	**—**	**3,673**	**—**	**—**	**3,673**
Corporate stocks	**2,046**	**33**	**1**	**—**	**2,080**
Private equity/partnerships	**—**	**—**	**—**	**921**	**921**
Government securities	**15**	**535**	**—**	**—**	**550**
Real estate	**—**	**—**	**—**	**563**	**563**
Short-term investment funds	**286**	**—**	**—**	**—**	**286**
Company common stock	**319**	**—**	**—**	**—**	**319**
Other investments	**13**	**20**	**333**	**—**	**366**
Total investments	**$ 2,970**	**$ 4,261**	**$ 334**	**$ 6,813**	**$ 14,378**

	Fair Value Measurements at December 31, 2017				
Assets *(In millions of dollars)*	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	NAV	Total
Common/collective trusts	$ 375	$ —	$ —	$ 7,611	$ 7,986
Corporate obligations	—	3,620	20	—	3,640
Corporate stocks	1,467	34	2	—	1,503
Private equity/partnerships	—	—	—	803	803
Government securities	15	556	—	—	571
Real estate	—	—	—	566	566
Short-term investment funds	391	16	—	—	407
Company common stock	326	—	—	—	326
Other investments	12	12	350	—	374
Total investments	$ 2,586	$ 4,238	$ 372	$ 8,980	$ 16,176

The tables below set forth a summary of changes in the fair value of the plans' Level 3 assets for the years ended December 31, 2018 and December 31, 2017:

Assets *(In millions)*	Fair Value, January 1, 2018	Purchases	Sales	Unrealized Gain/ (Loss)	Realized Gain/ (Loss)	Exchange Rate Impact	Transfers in/(out) and Other	Fair Value, December 31, 2018
Other investments	**$ 350**	**$ 20**	**$ (19)**	**$ (5)**	**$ 1**	**$ (14)**	**$ —**	**$ 333**
Corporate stocks	**2**	**—**	**—**	**—**	**—**	**—**	**(1)**	**1**
Corporate obligations	**20**	**—**	**—**	**—**	**—**	**—**	**(20)**	**—**
Total assets	**$ 372**	**$ 20**	**$ (19)**	**$ (5)**	**$ 1**	**$ (14)**	**$ (21)**	**$ 334**

Assets *(In millions)*	Fair Value, January 1, 2017	Purchases	Sales	Unrealized Gain/ (Loss)	Realized Gain/ (Loss)	Exchange Rate Impact	Transfers in/(out) and Other	Fair Value, December 31, 2017
Other investments	$ 312	$ 20	$ (15)	$ (7)	$ —	$ 40	$ —	$ 350
Corporate stocks	2	—	—	—	—	—	—	2
Corporate obligations	9	9	(1)	9	—	1	(7)	20
Total assets	$ 323	$ 29	$ (16)	$ 2	$ —	$ 41	$ (7)	$ 372

The following is a description of the valuation methodologies used for assets measured at fair value:

Company common stock: Valued at the closing price reported on the New York Stock Exchange.

Common stocks, preferred stocks, convertible equity securities, rights/warrants and real estate investment trusts (included in Corporate stocks): Valued at the closing price reported on the primary exchange.

Corporate bonds (included in Corporate obligations): The fair value of corporate bonds is estimated using recently executed transactions, market price quotations (where observable) and bond spreads. The spread data used are for the same maturity as the bond. If the spread data does not reference the issuer, then data that references a comparable issuer are used. When observable price quotations are not available, fair value is determined based on cash flow models.

Commercial mortgage-backed and asset-backed securities (included in Corporate obligations): Fair value is determined using discounted cash flow models. Observable inputs are based on trade and quote activity of bonds with similar features including issuer vintage, purpose of underlying loan (first or second lien), prepayment speeds and credit ratings. The discount rate is the combination of the appropriate rate from the benchmark yield curve and the discount margin based on quoted prices.

Common/Collective trusts: Valued at the net asset value of units of a bank collective trust. The net asset value as provided by the trustee, is used as a practical expedient to estimate fair value. The net asset value is based on the fair value of the underlying investments held by the fund less its liabilities. This practical expedient is not used when it is determined to be probable that the fund will sell the investment for an amount different than the reported net asset value.

U.S. government bonds (included in Government securities): The fair value of U.S. government bonds is estimated by pricing models that utilize observable market data including quotes, spreads and data points for yield curves.

U.S. agency securities (included in Government securities): U.S. agency securities are comprised of two main categories consisting of agency issued debt and mortgage pass-throughs. Agency issued debt securities are valued by benchmarking market-derived prices to quoted market prices and trade data for identical or comparable securities. Mortgage pass-throughs include certain "To-be-announced" (TBA) securities and mortgage pass-through pools. TBA securities are generally valued using quoted market prices or are benchmarked thereto. Fair value of mortgage pass-through pools are model driven with respect to spreads of the comparable TBA security.

Private equity and real estate partnerships: Investments in private equity and real estate partnerships are valued based on the fair value reported by the manager of the corresponding partnership and reported on a one quarter lag. The managers provide unaudited quarterly financial statements and audited annual financial statements which set forth the value of the fund. The valuations obtained from the managers are based on various analyses on the underlying holdings in each partnership, including financial valuation models and projections, comparable valuations from the public markets, and precedent private market transactions. Investments are valued in the accompanying financial statements based on the Plan's beneficial interest in the underlying net assets of the partnership as determined by the partnership agreement.

Insurance group annuity contracts: The fair values for these investments are based on the current market value of the aggregate accumulated contributions plus interest earned.

Swap assets (included in Other investments): Fair values for interest rate swaps, equity index swaps and inflation swaps are estimated using a discounted cash flow pricing model. These models use observable market data such as contractual fixed rate, spot equity price or index value and dividend data. The fair values of credit default swaps are estimated using an income approach model which determines expected cash flows based on default probabilities from the issuer-specific credit spread curve and credit loss recovery rates, both of which are dependent on market quotes.

Short-term investment funds: Primarily high-grade money market instruments valued at net asset value at year-end.

Registered investment companies: Valued at the closing price reported on the primary exchange.

Defined Contribution Plans

The Company maintains certain defined contribution plans for its employees, including the Marsh & McLennan Companies 401(k) Savings & Investment Plan ("401(k) Plan"), that are qualified under U.S. tax laws. Under these plans, eligible employees may contribute a percentage of their base salary, subject to certain limitations. For the 401(k) Plan, the Company matches a fixed portion of the employees' contributions. In addition, as mentioned above, as part of the modification to its U.S. defined benefit pension plans, the Company also amended its U.S. defined contribution retirement plans for most of its U.S. employees to add an automatic Company contribution equal to 4% of eligible base pay beginning on January 1, 2017. The 401(k) Plan contains an Employee Stock Ownership Plan feature under U.S. tax law. Approximately $444 million of the 401(k) Plan's assets at December 31, 2018 and $499 million at December 31, 2017 were invested in the Company's common stock. If a participant does not choose an investment direction for his or her future contributions, they are automatically invested in a BlackRock LifePath Portfolio that most closely matches the participant's expected retirement year. The cost of these defined contribution plans was $133 million in 2018, $130 million in 2017 and $53 million in 2016. The increase in cost in 2018 and 2017 as compared to 2016 is primarily due to the additional automatic Company contribution mentioned above. In addition, the Company has a significant defined contribution plan in the U.K. As noted above, effective August 1, 2014, a newly formed defined contribution plan replaced the existing defined contribution and defined benefit plans with regard to future service. The cost of the U.K. defined contribution plan was $80 million, $75 million and $81 million in 2018, 2017 and 2016, respectively.

9. Stock Benefit Plans

The Company maintains multiple stock-based payment arrangements under which employees are awarded grants of restricted stock units, stock options and other forms of stock-based benefits.

Marsh & McLennan Companies, Inc. Incentive and Stock Award Plans

On May 19, 2011, the Marsh & McLennan Companies, Inc. 2011 Incentive and Stock Award Plan (the "2011 Plan") was approved by the Company's stockholders. The 2011 Plan replaced the Company's two previous equity incentive plans (the 2000 Senior Executive Incentive and Stock Award Plan and the 2000 Employee Incentive and Stock Award Plan).

The types of awards permitted under the 2011 Plan include stock options, restricted stock and restricted stock units payable in Company common stock or cash, and other stock-based and performance-based awards. The Compensation Committee of the Board of Directors (the "Compensation Committee") determines, at its discretion, which affiliates may participate in the 2011 Plan, which eligible employees will receive awards, the types of awards to be received, and the terms and conditions thereof. The right of an employee to receive an award may be subject to performance conditions as specified by the Compensation Committee. The 2011 Plan contains a provision which, in the event of a change in control of the Company, may accelerate the vesting of the awards. This provision requires both a change in control of the Company and a subsequent specified termination of employment for vesting to be accelerated.

The 2011 Plan retains the remaining share authority of the two previous plans as of the date the 2011 Plan was approved by stockholders. Thus, approximately 23.2 million shares of common stock, plus shares remaining unused under the previous plans, are available for awards over the life of the 2011 Plan.

The current practice is to grant non-qualified stock options, restricted stock units and/or performance stock units ("PSUs") on an annual basis to senior executives and a limited number of other employees as part of their total compensation. Restricted stock units are also granted to new hires or as retention awards for certain employees. Restricted stock has not been granted since 2005.

Stock Options: Options granted under the 2011 Plan may be designated as either incentive stock options or non-qualified stock options. The Compensation Committee determines the terms and conditions of the option, including the time or times at which an option may be exercised, the methods by which such exercise price may be paid, and the form of such payment. Options are generally granted with an exercise price equal to the market value of the Company's common stock on the date of grant. These option awards generally vest 25% per annum and have a contractual term of 10 years.

The estimated fair value of options granted is calculated using the Black-Scholes option pricing valuation model. This model takes into account several factors and assumptions. The risk-free interest rate is based on the yield on U.S. Treasury zero-coupon issues with a remaining term equal to the expected life assumption at the time of grant. The expected life (estimated period of time outstanding) is estimated using the contractual term of the option and the effects of employees' expected exercise and post-vesting employment termination behavior. The Company uses a blended volatility rate based on the following: (i) volatility derived from daily closing price observations for the 10-year period ended on the valuation date, (ii) implied volatility derived from traded options for the period one week before the valuation date and (iii) average volatility for the 10-year periods ended on 15 anniversaries prior to the valuation date, using daily closing price observations. The expected dividend yield is based on expected dividends for the expected term of the stock options.

The assumptions used in the Black-Scholes option pricing valuation model for options granted by the Company in 2018, 2017 and 2016 are as follows:

	2018	2017	2016
Risk-free interest rate	**2.73%**	2.09%	1.39%
Expected life (in years)	**6.0**	6.0	6.0
Expected volatility	**23.23%**	23.23%	25.55%
Expected dividend yield	**1.81%**	1.86%	2.15%

A summary of the status of the Company’s stock option awards as of December 31, 2018 and changes during the year then ended is presented below:

	Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term	Aggregate Intrinsic Value ($000)
Balance at January 1, 2018	**10,200,702**	**$ 47.39**		
Granted	**1,381,391**	**$ 83.05**		
Exercised	**(1,452,879)**	**$ 33.92**		
Forfeited	**(161,176)**	**$ 69.64**		
Balance at December 31, 2018	**9,968,038**	**$ 53.94**	**5.8 years**	**$ 258,062**
Options vested or expected to vest at December 31, 2018	**9,830,816**	**53.72**	**5.8 years**	**256,622**
Options exercisable at December 31, 2018	**6,321,055**	**$ 43.78**	**4.5 years**	**$ 224,687**

In the above table, forfeited options are unvested options whose requisite service period has not been met. Expired options are vested options that were not exercised. The weighted-average grant-date fair value of the Company's option awards granted during the years ended December 31, 2018, 2017 and 2016 was $18.29, $15.01 and $11.57, respectively. The total intrinsic value of options exercised during the same periods was $72.9 million, $195.3 million and $137.7 million, respectively.

As of December 31, 2018, there was $17 million of unrecognized compensation cost related to the Company's option awards. The weighted-average period over which that cost is expected to be recognized is approximately 1.24 years. Cash received from the exercise of stock options for the years ended December 31, 2018, 2017 and 2016 was $46.7 million, $126.7 million and $105.4 million, respectively.

The Company's policy is to issue treasury shares upon option exercises or share unit conversion. The Company intends to issue treasury shares as long as an adequate number of those shares is available.

Restricted Stock Units and Performance Stock Units: Restricted stock units may be awarded under the Company's 2011 Incentive and Stock Award Plan. The Compensation Committee determines the restrictions on such units, when the restrictions lapse, when the units vest and are paid, and under what terms the units are forfeited. The cost of these awards is amortized over the vesting period, which is generally three years. Awards to senior executives and other employees may include three-year performance-based restricted stock units and three-year service-based restricted stock units. The payout of performance stock units (payable in shares of the Company's common stock) ranges, generally, from 0-200% of the number of units granted, based on the achievement of objective, pre-determined Company performance measure(s), generally, over a three-year performance period. The Company accounts for these awards as performance condition restricted stock units. The performance condition is not considered in the determination of grant date fair value of such awards. Compensation cost is recognized over the performance period based on management's estimate of the number of units expected to vest and shares to be paid and is adjusted to reflect the actual number of shares paid out at the end of the three-year performance period. Dividend equivalents are not paid out unless and until such time that the award vests.

A summary of the status of the Company's restricted stock units and performance stock units as of December 31, 2018 and changes during the period then ended is presented below:

	Restricted Stock Units		Performance Stock Units	
	Shares	**Weighted Average Grant Date Fair Value**	**Shares**	**Weighted Average Grant Date Fair Value**
Non-vested balance at January 1, 2018	**4,052,747**	**$ 66.97**	**690,601**	**$ 62.82**
Granted	**2,390,859**	**$ 83.05**	**225,736**	**$ 83.05**
Vested	**(1,796,343)**	**$ 64.22**	**(173,978)**	**$ 57.33**
Forfeited	**(317,032)**	**$ 73.81**	**(43,561)**	**$ 69.20**
Non-vested balance at December 31, 2018	**4,330,231**	**$ 76.49**	**698,798**	**$ 70.33**

The weighted-average grant-date fair value of the Company's restricted stock units granted during the years ended December 31, 2017 and 2016 was $73.23 and $57.54, respectively. The weighted average grant date fair value of the Company's performance stock units granted during the years ended December 31, 2017 and 2016 was $73.20 and $57.47, respectively. The total fair value of the shares distributed during the years ended December 31, 2018, 2017 and 2016 in connection with the Company's non-option equity awards was $170.3 million, $117.1 million and $91.4 million, respectively.

The payout of shares in 2018 with respect to the PSUs awarded in 2015 was 117% of target based on performance for the three-year performance period. In aggregate, 203,590 shares became distributable in respect to PSUs vested in 2018.

As of December 31, 2018, there was $238.9 million of unrecognized compensation cost related to the Company's restricted stock units and performance stock unit awards. The weighted-average period over which that cost is expected to be recognized is approximately 1.02 years.

Marsh & McLennan Companies Stock Purchase Plans

In May 1999, the Company's stockholders approved an employee stock purchase plan (the "1999 Plan") to replace the 1994 Employee Stock Purchase Plan (the "1994 Plan"), which terminated on September 30, 1999 following its fifth annual offering. Under the current terms of the Plan, shares are purchased four times during the plan year at a price that is 95% of the average market price on each quarterly purchase date. Under the 1999 Plan, after including the available remaining unused shares in the 1994 Plan and reducing the shares available by 10,000,000 consistent with the Company's Board of Directors' action in March 2007 and the addition of 4,750,000 shares due to a shareholder action in May 2018, no more than 40,350,000 shares of the Company's common stock may be sold. Employees purchased 424,631 shares during the year ended December 31, 2018 and at December 31, 2018, 5,678,536 shares were available for issuance under the 1999 Plan. Under the 1995 Company Stock Purchase Plan for International Employees (the "International Plan"), after reflecting the additional 5,000,000 shares of common stock for issuance approved by the Company's Board of Directors in July 2002, the addition of 4,000,000 shares due to a shareholder action in May 2007 and reducing the shares available by 1,000,000 consistent with the Company's Board of Directors' action in March 2018, no more than 11,000,000 shares of the Company's common stock may be sold. Employees purchased 117,175 shares during the year ended December 31, 2018 and there were 1,374,735 shares available for issuance at December 31, 2018 under the International Plan. The plans are considered non-compensatory.

10. Fair Value Measurements

Fair Value Hierarchy

The Company has categorized its assets and liabilities that are valued at fair value on a recurring basis into a three-level fair value hierarchy as defined by the FASB. The fair value hierarchy gives the highest priority to quoted prices in active markets for identical assets and liabilities (Level 1) and lowest priority to unobservable inputs (Level 3). In some cases, the inputs used to measure fair value might fall into different levels of the fair value hierarchy. In such cases, the level in the fair value hierarchy, for disclosure purposes, is determined based on the lowest level input that is significant to the fair value measurement. Assets and liabilities recorded in the consolidated balance sheets at fair value are categorized based on the inputs in the valuation techniques as follows:

Level 1. Assets and liabilities whose values are based on unadjusted quoted prices for identical assets or liabilities in an active market (examples include active exchange-traded equity securities and exchange-traded money market mutual funds).

Assets and liabilities using Level 1 inputs include exchange-traded equity securities, exchange-traded mutual funds and money market funds.

Level 2. Assets and liabilities whose values are based on the following:

a) Quoted prices for similar assets or liabilities in active markets;

b) Quoted prices for identical or similar assets or liabilities in non-active markets (examples include corporate and municipal bonds, which trade infrequently);

c) Pricing models whose inputs are observable for substantially the full term of the asset or liability (examples include most over-the-counter derivatives, including interest rate and currency swaps); and

d) Pricing models whose inputs are derived principally from or corroborated by observable market data through correlation or other means for substantially the full asset or liability (for example, certain mortgage loans).

Assets and liabilities using Level 2 inputs include treasury locks and an equity security.

Level 3. Assets and liabilities whose values are based on prices, or valuation techniques that require inputs that are both unobservable and significant to the overall fair value measurement. These inputs reflect management’s own assumptions about the assumptions a market participant would use in pricing the asset or liability (certain commercial mortgage whole loans, and long-dated or complex derivatives including certain foreign exchange options and long-dated options on gas and power).

Liabilities using Level 3 inputs include liabilities for contingent purchase consideration and the deal contingent foreign exchange contract (the "FX Contract").

Valuation Techniques

Equity Securities, Money Market Funds and Mutual Funds - Level 1

Investments for which market quotations are readily available are valued at the sale price on their principal exchange or, for certain markets, official closing bid price. Money market funds are valued using a valuation technique that results in price per share at $1.00.

Treasury Locks - Level 2

In connection with the JLT Transaction, to hedge the risk of increases in future interest rates prior to its issuance of fixed rate debt in the fourth quarter of 2018, the Company entered into Treasury locks related to $2 billion of expected issuances of senior notes in January 2019. The fair value at December 31, 2018 is based on the published treasury rate plus forward premium as of December 31, 2018 compared to the all in rate at the inception of the contract.

Contingent Purchase Consideration Liability - Level 3

Purchase consideration for some acquisitions made by the Company includes contingent consideration arrangements. These arrangements typically provide for the payment of additional consideration if earnings and revenue targets are met over periods from two to four years. The fair value of contingent consideration is estimated as the present value of future cash flows resulting from the projected revenue and earnings of the acquired entities.

Foreign Exchange Forward Contract Liabilities - Level 3

In connection with the JLT Transaction, the Company entered into the FX Contract, to hedge the risk of appreciation of the GBP-denominated purchase price. The Company will purchase £5.2 billion at a contracted exchange rate, which is discussed in Note 11. The fair value was determined using the probability distribution approach, comparing the all in forward rate to the foreign exchange rate for possible dates the JLT Transaction is expected to close, discounted to the valuation date and adjusted for the fair value of the deal contingency feature. Determining the fair value of the FX Contract requires significant management judgments or estimates about the potential closing dates of the transaction and remaining value of the deal contingency feature.The fair value related to the deal contingency feature will decrease (and any unrealized loss increase or any unrealized gain decrease) as conditions to the closing are met.

The following fair value hierarchy table presents information about the Company's assets and liabilities measured at fair value on a recurring basis as of December 31, 2018 and 2017:

(In millions of dollars)	Identical Assets (Level 1)		Observable Inputs (Level 2)		Unobservable Inputs (Level 3)		Total	
	12/31/18	12/31/17	**12/31/18**	12/31/17	**12/31/18**	12/31/17	**12/31/18**	12/31/17
Assets:								
Financial instruments owned:								
Exchange traded equity securities [(a)]	**$ 133**	$ 81	**$ —**	$ —	**$ —**	$ —	**$ 133**	$ 81
Mutual funds[(a)]	**151**	158	**—**	—	**—**	—	**151**	158
Money market funds[(b)]	**118**	143	**—**	—	**—**	—	**118**	143
Other equity investment[(a)]	**—**	—	**8**	—	**—**	—	**8**	—
Total assets measured at fair value	**$ 402**	$ 382	**$ 8**	$ —	**$ —**	$ —	**$ 410**	$ 382
Fiduciary Assets:								
Money market funds	**$ 80**	$ 111	**$ —**	$ —	**$ —**	$ —	**$ 80**	$ 111
U.S. Treasury Bills	**20**	**—**	**—**	**—**	**—**	**—**	**20**	—
Total fiduciary assets measured at fair value	**$ 100**	$ 111	**$ —**	$ —	**$ —**	$ —	**$ 100**	$ 111
Liabilities:								
Contingent purchase consideration liability[(c)]	**$ —**	$ —	**$ —**	$ —	**$ 183**	$ 189	**$ 183**	$ 189
Acquisition related derivative contracts	**—**	—	**116**	—	**325**	—	**441**	—
Total liabilities measured at fair value	**$ —**	$ —	**$ 116**	$ —	**$ 508**	$ 189	**$ 624**	$ 189

(a) Included in other assets in the consolidated balance sheets.
(b) Included in cash and cash equivalents in the consolidated balance sheets.
(c) Included in accounts payable and accrued liabilities and other liabilities in the consolidated balance sheets.

During the year ended December 31, 2018, there were no assets or liabilities that were transferred between any of the levels.

The table below sets forth a summary of the changes in fair value of the Company's Level 3 liabilities for the years ended December 31, 2018 and December 31, 2017.

(In millions)		**2018**		2017
Balance at January 1,	**$**	**189**	$	241
Additions		**54**		51
Payments		**(91)**		(108)
Revaluation Impact		**32**		3
Change in fair value of acquisition related derivative contracts		**325**		—
Other [(a)]		**(1)**		2
Balance at December 31,	**$**	**508**	$	189

(a) Primarily reflects the impact of foreign exchange.

The fair value of the contingent purchase consideration liability is based on projections of revenue and earnings for the acquired entities that are reassessed on a quarterly basis. As set forth in the table above, based on the Company's ongoing assessment of the fair value of contingent consideration, the Company recorded a net increase in the estimated fair value of such liabilities for prior period acquisitions of $32 million for the year ended December 31, 2018. A 5% increase in the above mentioned projections would increase the liability by approximately $43 million. A 5% decrease in the above mentioned projections would decrease the liability by approximately $35 million.

Long-Term Investments

The Company holds investments in certain private equity investments, public companies and private companies that are accounted for using the equity method of accounting. The carrying value of these investments was $287 million and $405 million at December 31, 2018 and 2017, respectively.

Investments Accounted For Using the Equity Method of Accounting

Investments in Public and Private Companies

Alexander Forbes: The Company owns approximately 33% of the common stock of Alexander Forbes, a South African company listed on the Johannesburg Stock Exchange, which it purchased in 2014 for 7.50 South African Rand per share. The shares of AF had been trading below the Company's carrying value since November of 2017, but had traded within 10% of the Company's carrying value through much of the first quarter of 2018. In May 2018, the trading price declined to 30% to 35% below the Company's cost and remained at the discounted level through the third quarter of 2018. The Company considered several factors in assessing the carrying value of its investment in AF, including its financial position, the near- and long-term prospects of AF and the broader South African economy and capital markets, the length of time and extent to which the market value was below cost and the Company's intent and ability to retain the investment for a sufficient period of time to allow for anticipated recovery in market value. However, based on the duration of time and the extent to which the shares traded below their cost, the Company could not develop sufficient objective evidence to support a recovery of the price in the relatively near future. As such, the Company concluded the decline in value of the investment was other than temporary and recorded a charge of $83 million in 2018. As of December 31, 2018, the carrying value of the Company's investment in Alexander Forbes was approximately $144 million. As of December 31, 2018, the market value of the approximately 443 million shares of Alexander Forbes owned by the Company, based on the December 31, 2018 closing share price of 5.14 South African Rand per share, was approximately $159 million.

The Company has other investments in private insurance and consulting companies with a carrying value of $61 million and $63 million at December 31, 2018 and December 31, 2017, respectively.

The Company's investment in Alexander Forbes and its other equity investments in private insurance and consulting companies are accounted for using the equity method of accounting, the results of which are included in revenue in the consolidated income statements and the carrying value of which is included in other assets in the consolidated balance sheets. The Company records its share of income or loss on its equity method investments on a one quarter lag basis.

Private Equity Investments

The Company's investments in private equity funds were $82 million and $76 million at December 31, 2018 and December 31, 2017, respectively. The carrying values of these private equity investments approximates fair value. The underlying private equity funds follow investment company accounting, where investments within the fund are carried at fair value. The Company records in earnings, investment gains/losses for its proportionate share of the change in fair value of the funds. These investments are included in other assets in the consolidated balance sheets. The Company recorded net investment income of $16 million and $14 million for the years ended December 31, 2018 and 2017, respectively, related to these investments.

Other Investments

At December 31, 2018 and December 31, 2017 the Company held certain equity investments with readily determinable market values of $146 million and $100 million, respectively. During 2018, the Company recorded investment gains of $54 million, which reflects the increase in the market value of these investments as compared to December 31, 2017. The Company also held investments without readily determinable market values of $75 million and $56 million at December 31, 2018 and 2017, respectively. The Company recorded net gains of approximately $1 million in 2018 and 2017 on these investments.

The summarized financial information presented below reflects the aggregated financial information of all equity method investees as of and for the twelve months ended September 30 of each year (or portion of those twelve months the Company owned its investment), consistent with the Company’s recognition of the results of its equity method investments on a one quarter lag. The investment income information presented below reflects the net realized and unrealized gains/losses, net of expenses, related to the Company's investment in Alexander Forbes and several private equity funds. Certain of the Company’s equity method investments, including Alexander Forbes, have unclassified balance sheets. Therefore, the asset and liability information presented below are not split between current and non-current.

Below is a summary of the financial information for the Company's equity method investees:

For the Twelve Months Ended September 30,						
(In millions of dollars)		**2018**		2017		2016
Revenue	**$**	**733**	$	628	$	843
Net investment income (a)	**$**	**1,699**	$	1,834	$	1,824
Net income	**$**	**554**	$	476	$	91

As of September 30,				
(In millions of dollars)		**2018**		2017
Total assets	**$**	**24,644**	$	24,739
Total liabilities	**$**	**22,257**	$	22,817
Non-controlling interests	**$**	**22**	$	19

(a) Net investment income in 2018, 2017 and 2016 includes approximately $1.2 billion, $1.5 billion and $1.9 billion, respectively, related to Alexander Forbes, substantially all of which is credited to policy holders.

11. Derivatives

On September 20, 2018, the Company entered into the FX Contract for the JLT Transaction, to hedge the risk of appreciation of the GBP-denominated purchase price. The Company will purchase £5.2 billion at a contracted exchange rate. The settlement of the FX Contract is contingent upon the closing of the JLT Transaction. The all in contract exchange rate includes the cost of a liquidity premium (due to the size of the JLT Transaction) and a deal contingent feature, which together increased the exchange rate in the FX Contract to purchase the £5.2 billion by .0343. The all in contract exchange rate is fixed through March 29, 2019, increases by .00016 through June 28, 2019 and by 0.000145 each day thereafter until the JLT Transaction closes.

The FX Contract is measured at fair value and the resulting gain or loss is recorded in the consolidated statements of income. The fair value was determined using the probability distribution approach, comparing the all in forward rate to the foreign exchange rate for possible dates the JLT Transaction is expected to close, discounted to the valuation date and adjusted for the fair value of the deal contingency feature. The fair value will decrease as the GBP depreciates, or increase as the GBP appreciates, relative to the contracted exchange rate. The fair value related to the deal contingency feature will also decrease (and any unrealized loss increase or any unrealized gain decrease) as conditions to the closing are met. An unrealized loss of $325 million related to the change in fair value of the FX contract was recorded in the consolidated statement of income during 2018 primarily related to the depreciation of the GBP from September 2018. The FX Contract does not qualify for hedge accounting treatment under applicable accounting guidance. The Company expects to record fair value gains or losses, which may be significant, through the consolidated statement of income until the closing of the JLT Transaction.

In connection with the JLT Transaction, to hedge the economic risk of changes in future interest rates prior to its issuance of fixed rate debt, in the fourth quarter of 2018, the Company entered into Treasury locks related to $2 billion of expected issuances of senior notes in 2019. The fair value at December 31, 2018 is based on the published treasury rate plus forward premium as of December 31, 2018 compared to the all in rate at the inception of the contact. The contracts were not designated as an accounting hedge. The Company recorded an unrealized loss of $116 million related to the change in the fair value of this derivative in the consolidated statement of income for the twelve months ended December 31, 2018. In January 2019, upon issuance of the $5 billion of senior notes, the Company settled the treasury lock derivatives and made a payment to its counter party for $122 million. An additional charge of $6 million will be recorded in the first quarter of 2019 related to the settlement of the Treasury lock derivatives.

12. Long-term Commitments

The Company leases office facilities, equipment and automobiles under non-cancelable operating leases. These leases expire on varying dates, in some instances contain renewal and expansion options, do not restrict the payment of dividends or the incurrence of debt or additional lease obligations, and contain no significant purchase options. In addition to the base rental costs, occupancy lease agreements generally provide for rent escalations resulting from increased assessments for real estate taxes and other charges. Approximately 98% of the Company's lease obligations are for the use of office space.

The consolidated statements of income include net rental costs of $383 million, $354 million and $367 million for 2018, 2017 and 2016, respectively, after deducting rentals from subleases ($8 million in 2018, $8 million in 2017 and $9 million in 2016). These net rental costs exclude rental costs and sublease income for previously accrued restructuring charges related to vacated space.

At December 31, 2018, the aggregate future minimum rental commitments under all non-cancelable operating lease agreements are as follows:

For the Years Ended December 31, *(In millions of dollars)*	Gross Rental Commitments	Rentals from Subleases	Net Rental Commitments
2019	$ 361	$ 32	$ 329
2020	$ 340	$ 31	$ 309
2021	$ 277	$ 12	$ 265
2022	$ 252	$ 10	$ 242
2023	$ 214	$ 9	$ 205
Subsequent years	$ 753	$ 32	$ 721

The Company has entered into agreements, primarily with various service companies, to outsource certain information systems activities and responsibilities and processing activities. Under these agreements, the Company is required to pay minimum annual service charges. Additional fees may be payable depending upon the volume of transactions processed, with all future payments subject to increases for inflation. At December 31, 2018, the aggregate fixed future minimum commitments under these agreements are as follows:

For the Years Ended December 31, *(In millions of dollars)*	Future Minimum Commitments
2019	$ 189
2020	37
2021	14
Subsequent years	19
	$ 259

13. Debt

The Company's outstanding debt is as follows:

December 31, *(In millions)*	**2018**	2017
Short-term:		
Current portion of long-term debt	**314**	262
	314	262
Long-term:		
Senior notes – 2.55% due 2018	**—**	250
Senior notes – 2.35% due 2019	**300**	299
Senior notes – 2.35% due 2020	**499**	498
Senior notes – 4.80% due 2021	**499**	498
Senior notes – 2.75% due 2022	**497**	496
Senior notes – 3.30% due 2023	**348**	348
Senior notes – 4.05% due 2023	**249**	248
Senior notes – 3.50% due 2024	**597**	596
Senior notes – 3.50% due 2025	**496**	496
Senior notes – 3.75% due 2026	**596**	596
Senior notes – 5.875% due 2033	**297**	297
Senior notes – 4.35% due 2047	**492**	492
Senior notes – 4.20% due 2048	**592**	—
Mortgage – 5.70% due 2035	**358**	370
Other	**4**	3
	5,824	5,487
Less current portion	**314**	262
	$ 5,510	$ 5,225

The senior notes in the table above are registered by the Company with the Securities and Exchange Commission, and are not guaranteed.

The Company has established a short-term debt financing program of up to $1.5 billion through the issuance of commercial paper. The proceeds from the issuance of commercial paper are used for general corporate purposes. The Company had no commercial paper outstanding at December 31, 2018.

Bridge Loan Financing

On September 18, 2018, the Company entered into a bridge loan agreement to finance the pending JLT acquisition. The bridge loan agreement provides for commitments in the aggregate principal amount of £5.2 billion. Under the bridge loan agreement, any loans will mature 364 days from the date of the first borrowing, and the Company will be required to comply with certain covenants including maintaining an interest coverage ratio and leverage ratio within specified levels. The Company paid approximately $35 million of customary upfront fees related to the bridge loan at the inception of the loan commitment, of which $30 million was amortized as interest expense in 2018 based on the period of time the facility is expected to be in effect (including any loans outstanding). Any borrowings under the bridge loan agreement will accrue interest at an annual rate based on the London Interbank Offered Rate for British pounds sterling, plus an applicable margin based on the Company’s debt ratings and also increasing over time while loans are outstanding. The Company will also be required to pay a duration fee in an amount equal to 50, 75 and 100 basis points on the principal amount of loans, if any, outstanding on the 90th, 180th and 270th day, respectively, after the first borrowing under the facility, as well as an "unused fee" accruing on the available but unused commitments at a rate that varies with the Company’s debt ratings. Unused commitments will be reduced, and loans under the bridge loan agreement prepaid, with the proceeds of certain debt or equity issuances or asset sales. There were no borrowings under the bridge loan agreement at December 31, 2018. The commitments under the bridge loan agreement are expected to be reduced, and any loans thereunder refinanced, with long-term financing.

As discussed below, in January 2019, the Company issued $5 billion of senior notes which will be used to fund the acquisition of JLT. The commitments under the bridge loan have therefore been reduced by £3.79 billion, due to the issuance of these senior notes.

Senior Notes

In October 2018 the Company repaid $250 million of maturing senior notes.

In March 2018, the Company issued $600 million of 4.20% senior notes due 2048. The Company used the net proceeds for general corporate purposes.

In January 2017, the Company issued $500 million of 2.75% senior notes due 2022 and $500 million of 4.35% senior notes due 2047. The Company used the net proceeds for general corporate purposes, including the repayment of a $250 million debt maturity in April 2017.

Subsequent Event – In January 2019, the Company issued $700 million of 3.50% Senior Notes due 2020, $1.0 billion of 3.875% Senior Notes due 2024, $1.25 billion of 4.375% Senior Notes due 2029, $500 million of 4.75% Senior Notes due 2039, $1.25 billion of 4.90% Senior Notes due 2049 and $300 million of Floating Rate Senior Notes due 2021. The Company intends to use the net proceeds to fund, in part, the pending acquisition of JLT, including the payment of related fees and expenses, and to repay certain JLT indebtedness, as well as for general corporate purposes.

Other Credit Facilities

In October 2018, the Company and certain of its foreign subsidiaries increased its multi-currency five-year unsecured revolving credit facility from $1.5 billion to $1.8 billion. The interest rate on this facility is based on LIBOR plus a fixed margin which varies with the Company's credit ratings. This facility expires in October 2023 and requires the Company to maintain certain coverage and leverage ratios which are tested quarterly. There were no borrowings outstanding under this facility at December 31, 2018.

Additional credit facilities, guarantees and letters of credit are maintained with various banks, primarily related to operations located outside the United States, aggregating $594 million at December 31, 2018 and $624 million at December 31, 2017. There were no outstanding borrowings under these facilities at December 31, 2018 and December 31, 2017.

Scheduled repayments of long-term debt in 2019 and in the four succeeding years, excluding the debt issued in January, 2019, are $314 million, $517 million, $515 million, $516 million and $616 million, respectively.

Fair value of Short-term and Long-term Debt

The estimated fair value of the Company’s short-term and long-term debt is provided below. Certain estimates and judgments were required to develop the fair value amounts. The fair value amounts shown below are not necessarily indicative of the amounts that the Company would realize upon disposition, nor do they indicate the Company's intent or need to dispose of the financial instrument.

	December 31, 2018		December 31, 2017	
(In millions of dollars)	**Carrying Amount**	**Fair Value**	Carrying Amount	Fair Value
Short-term debt	**$ 314**	**$ 313**	$ 262	$ 264
Long-term debt	**$ 5,510**	**$ 5,437**	$ 5,225	$ 5,444

The fair value of the Company's short-term debt consists primarily of term debt maturing within the next year and its fair value approximates its carrying value. The estimated fair value of a primary portion of the Company's long-term debt is based on discounted future cash flows using current interest rates available for debt with similar terms and remaining maturities. Short- and long-term debt would be classified as Level 2 in the fair value hierarchy.

14. Integration and Restructuring Costs

During the second quarter of 2018, Marsh initiated a program to simplify the organization through reduced management layers and more common structures across regions and businesses to more closely align with its more formalized segmentation strategy across large risk management, middle market corporate, and small commercial & personal segments. These efforts are expected to create increased efficiencies and additional capacity for reinvestment in people and technology. As of December 31, 2018, the Company has incurred restructuring severance and consulting costs of $96 million related to this initiative.

During the fourth quarter of 2018, Mercer initiated a program to restructure its business to further optimize the way Mercer operates, setting up the Company for a more fluid and nimble structure and operating model for the future. As of December 31, 2018, the Company has incurred restructuring severance and consulting costs of $51 million related to this initiative.

In addition to the charges discussed above, the Company incurred $14 million of restructuring costs related to severance and future rent under non-cancelable leases. These costs were incurred in Risk and Insurance Services—$3 million; Consulting—$1 million; and Corporate—$10 million.

Details of the restructuring liability activity from January 1, 2017 through December 31, 2018, including actions taken prior to 2018, are as follows:

(In millions)	Balance at 1/1/17	Expense Incurred	Cash Paid	Other	Balance at 12/31/17	Expense Incurred	Cash Paid	Other	**Balance at 12/31/18**
Severance	$ 32	$ 31	$ (49)	$ 1	$ 15	$ 137	$ (77)	$ (2)	**$ 73**
Future rent under non-cancelable leases and other costs	61	9	(22)	2	50	24	(37)	2	**39**
Total	$ 93	$ 40	$ (71)	$ 3	$ 65	$ 161	$ (114)	$ —	**$ 112**

As of January 1, 2016, the liability balance related to restructuring activity was $93 million. In 2016, the Company accrued $44 million and had cash payments and other adjustments of $44 million related to restructuring activities that resulted in the liability balance at January 1, 2017 reported above.

The expenses associated with the above initiatives are included in compensation and benefits and other operating expenses in the consolidated statements of income. The liabilities associated with these initiatives are classified on the consolidated balance sheets as accounts payable and accrued liabilities, other liabilities, or accrued compensation and employee benefits, depending on the nature of the items.

15. Common Stock

During 2018, the Company repurchased 8.2 million shares of its common stock for total consideration of $675 million. In November 2016, the Board of Directors of the Company authorized the Company to repurchase up to $2.5 billion of the Company's common stock, which superseded any prior authorizations. The Company remains authorized to purchase additional shares of its common stock up to a value of approximately $866 million. There is no time limit on the authorization. During 2017, the Company purchased 11.5 million shares of its common stock for total consideration of $900 million.

The Company issued approximately 3.3 million and 5.8 million shares related to stock compensation and employee stock purchase plans during the years ended December 31, 2018 and 2017, respectively.

16. Claims, Lawsuits and Other Contingencies

Litigation Matters

The Company and its subsidiaries are subject to a significant number of claims, lawsuits and proceedings in the ordinary course of business. Such claims and lawsuits consist principally of alleged errors and omissions in connection with the performance of professional services, including the placement of insurance, the provision of actuarial services for corporate and public sector clients, the provision of investment advice and investment management services to pension plans, the provision of advice relating to pension buy-out transactions and the provision of consulting services relating to the drafting and interpretation of trust deeds and other documentation governing pension plans. These claims may seek damages, including punitive and treble damages, in amounts that could be significant. In establishing liabilities for errors and omissions claims in accordance with FASB guidance on Contingencies - Loss Contingencies, the Company uses case level reviews by inside and outside counsel, and internal actuarial analysis by Oliver Wyman Group, a subsidiary of the Company, and other methods to estimate potential losses. A liability is established when a loss is both probable and reasonably estimable. The liability is reviewed quarterly and adjusted as developments warrant. In many cases, the Company has not recorded a liability, other than for legal fees to defend the claim, because we are unable, at the present time, to make a determination that a loss is both probable and reasonably estimable. To the extent that expected losses exceed our deductible in any policy year, the Company also records an asset for the amount that we expect to recover under any available third-party insurance programs. The Company has varying levels of third-party insurance coverage, with policy limits and coverage terms varying significantly by policy year.

Governmental Inquiries and Enforcement Matters

Our activities are regulated under the laws of the United States and its various states, the European Union and its member states, and the other jurisdictions in which the Company operates.

Risk and Insurance Services Segment

In April 2017, the Financial Conduct Authority in the United Kingdom (the "FCA") commenced a civil competition investigation into the aviation insurance and reinsurance sector. In connection with that investigation, the FCA carried out an on-site inspection at the London office of Marsh Limited, our Marsh and Guy Carpenter operating subsidiary in the United Kingdom. The FCA indicated that it had reasonable grounds for suspecting that Marsh Limited and other participants in the market have been sharing competitively sensitive information within the aviation insurance and reinsurance broking sector.

In October 2017, the Company received a notice that the Directorate-General for Competition of the European Commission had commenced a civil investigation of a number of insurance brokers, including Marsh, regarding "the exchange of commercially sensitive information between competitors in relation to aviation and aerospace insurance and reinsurance broking products and services in the European Economic Area ("EEA"), as well as possible coordination between competitors." In light of the action taken by the European Commission, the FCA informed Marsh Limited at the same time that it has discontinued its investigation under U.K. competition law. In May 2018, the FCA advised that it would not be taking any further action with Marsh Limited in connection with this matter.

In July 2017, the Directorate-General for Competition of the European Commission together with the Irish Competition and Consumer Protection Commission conducted on-site inspections at the offices of Marsh and other industry participants in Dublin in connection with an investigation regarding the "possible participation in anticompetitive agreements and/or concerted practices contrary to [E.U. competition law] in the market for commercial motor insurance in the Republic of Ireland."

In January 2019, the Company received a notice that the Administrative Council for Economic Defense anti-trust agency in Brazil had commenced an administrative proceeding against a number of insurance brokers, including Marsh, and insurers “to investigate an alleged sharing of sensitive commercial and competitive confidential information” in the aviation insurance and reinsurance sector.

We are cooperating with these investigations and are conducting our own reviews. At this time, we are unable to predict their likely timing, outcome or ultimate impact. There can be no assurance that the ultimate resolution of these or any related matters will not have a material adverse effect on our consolidated results of operations, financial condition or cash flows.

In November 2017, the FCA announced the terms of reference for a market study concerning the wholesale insurance broker sector in the United Kingdom, which affects Marsh and Guy Carpenter. The FCA conducted the study to assess "how effectively competition is working in the wholesale insurance broker sector" and "how brokers influence competition in the underwriting sector." In February 2019, the FCA published its final report and closed the market study, concluding that it had "not found evidence of significant levels of harm that merit the introduction of regulatory intervention."

Other Contingencies-Guarantees

In connection with its acquisition of U.K.-based Sedgwick Group in 1998, the Company acquired several insurance underwriting businesses that were already in run-off, including River Thames Insurance Company Limited ("River Thames"), which the Company sold in 2001. Sedgwick guaranteed payment of claims on certain policies underwritten through the Institute of London Underwriters (the "ILU") by River Thames. The policies covered by this guarantee were reinsured up to £40 million by a related party of River Thames. Payment of claims under the reinsurance agreement is collateralized by segregated assets held in a trust. As of December 31, 2018, the reinsurance coverage exceeded the best estimate of the projected liability of the policies covered by the guarantee. To the extent River Thames or the reinsurer is unable to meet its obligations under those policies, a claimant may seek to recover from the Company under the guarantee.

From 1980 to 1983, the Company owned indirectly the English & American Insurance Company ("E&A"), which was a member of the ILU. The ILU required the Company to guarantee a portion of E&A's obligations. After E&A became insolvent in 1993, the ILU agreed to discharge the guarantee in exchange for the Company's agreement to post an evergreen letter of credit that is available to pay claims by policyholders on certain E&A policies issued through the ILU and incepting between July 3, 1980 and October 6, 1983. Certain claims have been paid under the letter of credit and the Company anticipates that additional claimants may seek to recover against the letter of credit.

* * * *

The pending proceedings described above and other matters not explicitly described in this Note 16 on Claims, Lawsuits and Other Contingencies may expose the Company or its subsidiaries to liability for significant monetary damages, fines, penalties or other forms of relief. Where a loss is both probable and reasonably estimable, the Company establishes liabilities in accordance with FASB guidance on Contingencies - Loss Contingencies. Except as described above, the Company is not able at this time to provide a reasonable estimate of the range of possible loss attributable to these matters or the impact they may have on the Company's consolidated results of operations, financial position or cash flows. This is primarily because these matters are still developing and involve complex issues subject to inherent uncertainty. Adverse determinations in one or more of these matters could have a material impact on the Company's consolidated results of operations, financial condition or cash flows in a future period.

17. Segment Information

The Company is organized based on the types of services provided. Under this structure, the Company's segments are:

- **Risk and Insurance Services**, comprising insurance services (Marsh) and reinsurance services (Guy Carpenter); and
- **Consulting**, comprising Mercer and Oliver Wyman Group

The accounting policies of the segments are the same as those used for the consolidated financial statements described in Note 1. Segment performance is evaluated based on segment operating income, which includes directly related expenses, and charges or credits related to integration and restructuring but not the Company's corporate-level expenses. Revenues are attributed to geographic areas on the basis of where the services are performed.

Selected information about the Company's segments and geographic areas of operation are as follows:

For the Year Ended December 31, *(In millions of dollars)*	Revenue		Operating Income (Loss)	Total Assets		Depreciation and Amortization	Capital Expenditures
2018 –							
Risk and Insurance Services	**$ 8,228**	**(a)**	**$ 1,864**	**$ 15,868**		**$ 290**	**$ 158**
Consulting	**6,779**	**(b)**	**1,099**	**8,003**		**130**	**97**
Total Segments	**15,007**		**2,963**	**23,871**		**420**	**255**
Corporate/Eliminations	**(57)**		**(202)**	**(2,293)**	**(c)**	**74**	**59**
Total Consolidated	**$ 14,950**		**$ 2,761**	**$ 21,578**		**$ 494**	**$ 314**
2017 –							
Risk and Insurance Services	$ 7,630	(a)	$ 1,731	$ 16,490		$ 282	$ 139
Consulting	6,444	(b)	1,110	8,200		129	88
Total Segments	14,074		2,841	24,690		411	227
Corporate/Eliminations	(50)		(186)	(4,261)	(c)	70	75
Total Consolidated	$ 14,024		$ 2,655	$ 20,429		$ 481	$ 302
2016 –							
Risk and Insurance Services	$ 7,143	(a)	$ 1,581	$ 14,728		$ 248	$ 128
Consulting	6,112	(b)	1,038	6,770		121	68
Total Segments	13,255		2,619	21,498		369	196
Corporate/Eliminations	(44)		(188)	(3,308)	(c)	69	57
Total Consolidated	$ 13,211		$ 2,431	$ 18,190		$ 438	$ 253

(a) Includes inter-segment revenue of $6 million, $5 million and $6 million in 2018, 2017 and 2016, respectively, interest income on fiduciary funds of $65 million, $39 million and $26 million in 2018, 2017 and 2016, respectively, and equity method income of $13 million, $14 million and $12 million in 2018, 2017 and 2016, respectively and $40 million related to the sale of business in 2018.

(b) Includes inter-segment revenue of $51 million, $45 million and $38 million in 2018, 2017 and 2016, respectively, interest income on fiduciary funds of $3 million, $4 million and $3 million in 2018, 2017 and 2016, respectively, and equity method income of $8 million, $17 million and $19 million in 2018, 2017 and 2016, respectively.

(c) Corporate assets primarily include insurance recoverables, pension related assets, the owned portion of the Company headquarters building and intercompany eliminations.

Details of operating segment revenue are as follows:

For the Years Ended December 31, *(In millions of dollars)*	**2018**	2017	2016
Risk and Insurance Services			
Marsh	**$ 6,923**	$ 6,433	$ 5,997
Guy Carpenter	**1,305**	1,197	1,146
Total Risk and Insurance Services	**8,228**	7,630	7,143
Consulting			
Mercer	**4,732**	4,528	4,323
Oliver Wyman Group	**2,047**	1,916	1,789
Total Consulting	**6,779**	6,444	6,112
Total Segments	**15,007**	14,074	13,255
Corporate/Eliminations	**(57)**	(50)	(44)
Total	**$ 14,950**	$ 14,024	$ 13,211

Information by geographic area is as follows:

For the Years Ended December 31, *(In millions of dollars)*	**2018**	2017	2016
Revenue			
United States	**$ 7,219**	$ 6,870	$ 6,573
United Kingdom	**2,243**	2,112	2,019
Continental Europe	**2,694**	2,197	2,022
Asia Pacific	**1,616**	1,517	1,363
Other	**1,235**	1,378	1,278
	15,007	14,074	13,255
Corporate/Eliminations	**(57)**	(50)	(44)
Total	**$ 14,950**	$ 14,024	$ 13,211

For the Years Ended December 31, *(In millions of dollars)*	**2018**	2017	2016
Fixed Assets, Net			
United States	**$ 403**	$ 399	$ 412
United Kingdom	**91**	91	94
Continental Europe	**59**	57	53
Asia Pacific	**74**	78	76
Other	**74**	87	90
Total	**$ 701**	$ 712	$ 725

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Shareholders and the Board of Directors of Marsh & McLennan Companies, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Marsh & McLennan Companies, Inc. and subsidiaries (the "Company") as of December 31, 2018 and 2017, the related consolidated statements of income, comprehensive income, cash flows, and equity for each of the three years in the period ended December 31, 2018, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and 2017, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2018, in conformity with accounting principles generally accepted in the United States of America.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2018, based on criteria established in *Internal Control - Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated February 21, 2019 expressed an unqualified opinion on the Company's internal control over financial reporting.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ Deloitte & Touche LLP

New York, New York
February 21, 2019

We have served as the Company's auditor since 1989.

Marsh & McLennan Companies, Inc. and Subsidiaries
SELECTED QUARTERLY FINANCIAL DATA AND SUPPLEMENTAL INFORMATION (UNAUDITED)

(In millions, except per share figures)	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
2018:				
Revenue	**$ 4,000**	**$ 3,734**	**$ 3,504**	**$ 3,712**
Operating income	**$ 908**	**$ 691**	**$ 541**	**$ 621**
Income from continuing operations	**$ 696**	**$ 536**	**$ 279**	**$ 159**
Net income attributable to the Company	**$ 690**	**$ 531**	**$ 276**	**$ 153**
Basic Per Share Data:				
Continuing operations	**$ 1.36**	**$ 1.05**	**$ 0.55**	**$ 0.30**
Discontinued operations, net of tax	**$ —**	**$ —**	**$ —**	**$ —**
Net income attributable to the Company	**$ 1.36**	**$ 1.05**	**$ 0.55**	**$ 0.30**
Diluted Per Share Data:				
Continuing operations	**$ 1.34**	**$ 1.04**	**$ 0.54**	**$ 0.30**
Discontinued operations, net of tax	**$ —**	**$ —**	**$ —**	**$ —**
Net income attributable to the Company	**$ 1.34**	**$ 1.04**	**$ 0.54**	**$ 0.30**
Dividends Paid Per Share	**$ 0.375**	**$ 0.375**	**$ 0.415**	**$ 0.415**
2017:				
Revenue	$ 3,503	$ 3,495	$ 3,341	$ 3,685
Operating income	$ 749	$ 701	$ 535	$ 670
Income from continuing operations	$ 578	$ 507	$ 397	$ 28
Discontinued operations, net of tax	$ —	$ —	$ —	$ 2
Net income attributable to the Company	$ 569	$ 501	$ 393	$ 29
Basic Per Share Data[(a)]:				
Continuing operations	$ 1.10	$ 0.98	$ 0.77	$ 0.05
Discontinued operations, net of tax	$ —	$ —	$ —	$ 0.01
Net income attributable to the Company	$ 1.10	$ 0.98	$ 0.77	$ 0.06
Diluted Per Share Data[(a)]:				
Continuing operations	$ 1.09	$ 0.96	$ 0.76	$ 0.05
Discontinued operations, net of tax	$ —	$ —	$ —	$ 0.01
Net income attributable to the Company	$ 1.09	$ 0.96	$ 0.76	$ 0.06
Dividends Paid Per Share	$ 0.34	$ 0.34	$ 0.375	$ 0.375

As of February 18th, 2019, there were 5,063 stockholders of record.

(a) Includes the impact of a $460 million provisional charge related to the enactment of U.S. tax reform.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure.

None.

Item 9A. Controls and Procedures.

Disclosure Controls and Procedures. Based on their evaluation, as of the end of the period covered by this annual report on Form 10-K, the Company's chief executive officer and chief financial officer have concluded that the Company's disclosure controls and procedures (as defined in Rules 13a-15(e) or 15d-15(e) under the Securities Exchange Act of 1934) are effective.

Internal Control over Financial Reporting.

(a) *Management's Annual Report on Internal Control Over Financial Reporting*

MANAGEMENT'S ANNUAL REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING

The management of Marsh & McLennan Companies, Inc. is responsible for establishing and maintaining adequate internal control over financial reporting for the Company. The Company's internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles.

The Company's internal control over financial reporting includes those policies and procedures relating to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the Company; the recording of all necessary transactions to permit the preparation of the Company's consolidated financial statements in accordance with generally accepted accounting principles; the proper authorization of receipts and expenditures in accordance with authorizations of the Company's management and directors; and the prevention or timely detection of the unauthorized acquisition, use or disposition of assets that could have a material effect on the Company's consolidated financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Management evaluated the effectiveness of the Company's internal control over financial reporting as of December 31, 2018 under the supervision and with the participation of the Company's principal executive and principal financial officers. In making this evaluation, management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in Internal Control—Integrated Framework issued in 2013. Based on its evaluation, management determined that the Company maintained effective internal control over financial reporting as of December 31, 2018.

Deloitte & Touche LLP, the Independent Registered Public Accounting Firm that audited and reported on the Company's consolidated financial statements included in this annual report on Form 10-K, also issued an audit report on the effectiveness of the Company's internal control over financial reporting as of December 31, 2018.

(b) *Audit Report of the Registered Public Accounting Firm.*

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Shareholders and the Board of Directors of Marsh & McLennan Companies, Inc.

Opinion on Internal Control over Financial Reporting

We have audited the internal control over financial reporting of Marsh & McLennan Companies, Inc. and subsidiaries (the "Company") as of December 31, 2018, based on criteria established in *Internal Control - Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2018, based on criteria established in *Internal Control - Integrated Framework (2013)* issued by COSO.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated financial statements as of and for the year ended December 31, 2018 of the Company and our report dated February 21, 2019, expressed an unqualified opinion on those financial statements.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Annual Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ Deloitte & Touche LLP

New York, New York
February 21, 2019

(c) *Changes in Internal Control Over Financial Reporting*

There were no changes in the Company's internal control over financial reporting identified in connection with the evaluation required by Rules 13a-15(d) or 15d-15(d) under the Securities Exchange Act of 1934 that occurred during the quarter ended December 31, 2018 that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

Item 9B. Other Information.

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance.

Information as to the directors and nominees for the board of directors of the Company is incorporated herein by reference to the material set forth under the heading "Item 1: Election of Directors" in the 2019 Proxy Statement.

The executive officers and executive officer appointees of the Company are Peter J. Beshar, John Q. Doyle, Martine Ferland, E. Scott Gilbert, Daniel S. Glaser, Peter Hearn, Laurie Ledford, Scott McDonald, Mark C. McGivney and Julio A. Portalatin. Information with respect to these individuals is provided in Part I, Item 1 above under the heading "Executive Officers of the Company".

The information set forth in the 2019 Proxy Statement in the sections "Corporate Governance—Codes of Conduct", "Board of Directors and Committees—Committees—Audit Committee", "Additional Information—Transactions with Management and Others" and "Additional Information—Section 16(a) Beneficial Ownership Reporting Compliance" is incorporated herein by reference.

Item 11. Executive Compensation.

The information set forth in the sections "Board of Directors and Committees—Director Compensation" and "Executive Compensation—Compensation of Executive Officers" in the 2019 Proxy Statement is incorporated herein by reference.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters.

The information set forth in the sections "Additional Information—Stock Ownership of Directors, Management and Certain Beneficial Owners" and "Additional Information—Equity Compensation Plan Information" in the 2019 Proxy Statement is incorporated herein by reference.

Item 13. Certain Relationships and Related Transactions, and Director Independence.

The information set forth in the sections "Corporate Governance—Director Independence", "Corporate Governance—Review of Related-Person Transactions" and "Additional Information—Transactions with Management and Others" in the 2019 Proxy Statement is incorporated herein by reference.

Item 14. Principal Accountant Fees and Services.

The information set forth under the heading "Item 3: Ratification of Selection of Independent Registered Public Accounting Firm—Fees of Independent Registered Public Accounting Firm" in the 2019 Proxy Statement is incorporated herein by reference.

PART IV

Item 15. Exhibits and Financial Statement Schedules. †

The following documents are filed as a part of this report:

(1) Consolidated Financial Statements:

Consolidated Statements of Income for each of the three years in the period ended December 31, 2018

Consolidated Statements of Comprehensive Income for each of the three years in the period ended December 31, 2018

Consolidated Balance Sheets as of December 31, 2018 and 2017

Consolidated Statements of Cash Flows for each of the three years in the period ended December 31, 2018

Consolidated Statements of Shareholders Equity for each of the three years in the period ended December 31, 2018

Notes to Consolidated Financial Statements

Report of Independent Registered Public Accounting Firm

Other:

Selected Quarterly Financial Data and Supplemental Information (Unaudited) for fiscal years 2018 and 2017

Five-Year Statistical Summary of Operations

(2) All required Financial Statement Schedules are included in the Consolidated Financial Statements or the Notes to Consolidated Financial Statements.

(3) The following exhibits are filed as a part of this report:

(2.1) Stock Purchase Agreement, dated as of June 6, 2010, by and between Marsh & McLennan Companies, Inc. and Altegrity, Inc. (incorporated by reference to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2010)

(2.2) Rule 2.7 Announcement, dated as of September 18, 2018 (incorporated by reference to the Company's Current Report on Form 8-K dated September 18, 2018)

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†As permitted by Item 601(b)(4)(iii)(A) of Regulation S-K, the Company has not filed with this Form 10-K certain instruments defining the rights of holders of long-term debt of the Company and its subsidiaries because the total amount of securities authorized under any of such instruments does not exceed 10% of the total assets of the Company and its subsidiaries on a consolidated basis. The Company agrees to furnish a copy of any such agreement to the Commission upon request.

(2.3) Co-operation Agreement, dated as of September 18, 2018, by and among Marsh & McLennan Companies, Inc., MMC Treasury Holdings (UK) Limited and Jardine Lloyd Thompson Group plc. (incorporated by reference to the Company's Current Report on Form 8-K dated September 18, 2018)

(3.1) Restated Certificate of Incorporation of Marsh & McLennan Companies, Inc. (incorporated by reference to the Company's Current Report on Form 8-K dated July 17, 2008)

(3.2) Amended and Restated By-Laws of Marsh & McLennan Companies, Inc. (incorporated by reference to the Company's Current Report on Form 8-K dated January 12, 2017)

(4.1) Indenture dated as of June 14, 1999 between Marsh & McLennan Companies, Inc. and State Street Bank and Trust Company, as trustee (incorporated by reference to the Company's Registration Statement on Form S-3, Registration No. 333-108566)

(4.2) Third Supplemental Indenture dated as of July 30, 2003 between Marsh & McLennan Companies, Inc. and U.S. Bank National Association (as successor to State Street Bank and Trust Company), as trustee (incorporated by reference to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2003)

(4.3) Indenture dated as of March 19, 2002 between Marsh & McLennan Companies, Inc. and State Street Bank and Trust Company, as trustee (incorporated by reference to the Company's Registration Statement on Form S-4, Registration No. 333-87510)

(4.4) Indenture, dated as of July 15, 2011, between Marsh & McLennan Companies, Inc. and The Bank of New York Mellon, as trustee (incorporated by reference to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2011)

(4.5) First Supplemental Indenture, dated as of July 15, 2011, between Marsh & McLennan Companies, Inc. and The Bank of New York Mellon, as trustee (incorporated by reference to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2011)

(4.6) Form of Third Supplemental Indenture between Marsh & McLennan Companies, Inc. and The Bank of New York Mellon, as trustee (incorporated by reference to the Company's Current Report on Form 8-K dated September 24, 2013)

(4.7) Form of Fourth Supplemental Indenture between Marsh & McLennan Companies, Inc. and The Bank of New York Mellon, as trustee (incorporated by reference to the Company's Current Report on Form 8-K dated May 27, 2014)

(4.8) Form of Fifth Supplemental Indenture between Marsh & McLennan Companies, Inc. and The Bank of New York Mellon, as trustee (incorporated by reference to the Company's Current Report on Form 8-K dated September 10, 2014)

(4.9) Sixth Supplemental Indenture, dated as of March 6, 2015, between Marsh & McLennan Companies, Inc. and The Bank of New York Mellon, as trustee (incorporated by reference to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2015)

(4.10) Seventh Supplemental Indenture, dated as of September 14, 2015, between Marsh & McLennan Companies, Inc. and The Bank of New York Mellon, as trustee (incorporated by reference to the Company's Current Report on Form 8-K filed on September 14, 2015)

(4.11) Eighth Supplemental Indenture, dated as of March 14, 2016, between Marsh & McLennan Companies, Inc. and The Bank of New York Mellon, as trustee (incorporated by reference to the Company's Quarterly Report on Form 10-Q filed on May 2, 2016)

(4.12) Ninth Supplemental Indenture, dated as of January 12, 2017, between Marsh & McLennan Companies, Inc. and The Bank of New York Mellon, as trustee (incorporated by reference to the Company's Annual Report on Form 10-K filed on February 24, 2017)

(4.13) Tenth Supplemental Indenture, dated as of March 1, 2018, between Marsh & McLennan Companies, Inc. and The Bank of New York Mellon, as trustee (incorporated by reference to the Company's Current Report on Form 8-K filed on March 1, 2018)

(4.14) Eleventh Supplemental Indenture, dated January 15, 2019, between Marsh & McLennan Companies, Inc. and The Bank of New York Mellon, as trustee (incorporated by reference to the Company's Current Report on Form 8-K filed on January 15, 2019)

(10.1) *Marsh & McLennan Companies, Inc. U.S. Employee 1996 Cash Bonus Award Voluntary Deferral Plan (incorporated by reference to the Company's Annual Report on Form 10-K for the year ended December 31, 1996)

(10.2) *Marsh & McLennan Companies, Inc. U.S. Employee 1997 Cash Bonus Award Voluntary Deferral Plan (incorporated by reference to the Company's Annual Report on Form 10-K for the year ended December 31, 1997)

(10.3) *Marsh & McLennan Companies, Inc. U.S. Employee 1998 Cash Bonus Award Voluntary Deferral Plan (incorporated by reference to the Company's Annual Report on Form 10-K for the year ended December 31, 1998)

(10.4) *Marsh & McLennan Companies, Inc. 2000 Senior Executive Incentive and Stock Award Plan (incorporated by reference to the Company's Annual Report on Form 10-K for the year ended December 31, 1999)

(10.5) *Amendments to Marsh & McLennan Companies, Inc. 2000 Senior Executive Incentive and Stock Award Plan and the Marsh & McLennan Companies, Inc. 2000 Employee Incentive and Stock Award Plan (incorporated by reference to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2005)

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*Management contract or compensatory plan or arrangement required to be filed as an exhibit pursuant to Item 15(b) of Form 10-K.

(10.6) *Form of Awards under the Marsh & McLennan Companies, Inc. 2000 Senior Executive Incentive and Stock Award Plan (incorporated by reference to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2004)

(10.7) *Additional Forms of Awards under the Marsh & McLennan Companies, Inc. 2000 Senior Executive Incentive and Stock Award Plan (incorporated by reference to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2005)

(10.8) *Marsh & McLennan Companies, Inc. 2000 Employee Incentive and Stock Award Plan (incorporated by reference to the Company's Annual Report on Form 10-K for the year ended December 31, 2001)

(10.9) *Form of Awards under the Marsh & McLennan Companies, Inc. 2000 Employee Incentive and Stock Award Plan (incorporated by reference to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2004)

(10.10) *Additional Forms of Awards under the Marsh & McLennan Companies, Inc. 2000 Employee Incentive and Stock Award Plan (incorporated by reference to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2005)

(10.11) *Form of Long-term Incentive Award under the Marsh & McLennan Companies, Inc. 2000 Senior Executive Incentive and Stock Award Plan and the Marsh & McLennan Companies, Inc. 2000 Employee Incentive and Stock Award Plan (incorporated by reference to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2006)

(10.12) *Form of 2007 Long-term Incentive Award under the Marsh & McLennan Companies, Inc. 2000 Senior Executive Incentive and Stock Award Plan and the Marsh & McLennan Companies, Inc. 2000 Employee Incentive and Stock Award Plan (incorporated by reference to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2007)

(10.13) *Form of 2008 Long-term Incentive Award under the Marsh & McLennan Companies, Inc. 2000 Senior Executive Incentive and Stock Award Plan and the Marsh & McLennan Companies, Inc. 2000 Employee Incentive and Stock Award Plan (incorporated by reference to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2008)

(10.14) *Form of 2009 Long-term Incentive Award under the Marsh & McLennan Companies, Inc. 2000 Senior Executive Incentive and Stock Award Plan and the Marsh & McLennan Companies, Inc. 2000 Employee Incentive and Stock Award Plan (incorporated by reference to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2009)

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*Management contract or compensatory plan or arrangement required to be filed as an exhibit pursuant to Item 15(b) of Form 10-K.

(10.15) *Form of 2010 Long-term Incentive Award under the Marsh & McLennan Companies, Inc. 2000 Senior Executive Incentive and Stock Award Plan and the Marsh & McLennan Companies, Inc. 2000 Employee Incentive and Stock Award Plan (incorporated by reference to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2010)

(10.16) *Form of 2011 Long-term Incentive Award under the Marsh & McLennan Companies, Inc. 2000 Senior Executive Incentive and Stock Award Plan and the Marsh & McLennan Companies, Inc. 2000 Employee Incentive and Stock Award Plan (incorporated by reference to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2011)

(10.17) *Form of 2011 Long-term Incentive Award dated as of June 1, 2011 under the Marsh & McLennan Companies, Inc. 2011 Incentive and Stock Award Plan (incorporated by reference to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2011)

(10.18) *Form of 2012 Long-term Incentive Award under the Marsh & McLennan Companies, Inc. 2011 Incentive and Stock Award Plan (incorporated by reference to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2012)

(10.19) *Form of 2013 Long-term Incentive Award under the Marsh & McLennan Companies, Inc. 2011 Incentive and Stock Award Plan (incorporated by reference to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2013)

(10.20) *Form of 2014 Long-term Incentive Award under the Marsh & McLennan Companies, Inc. 2011 Incentive and Stock Award Plan (incorporated by reference to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2014)

(10.21) *Form of 2015 Long-term Incentive Award under the Marsh & McLennan Companies, Inc. 2011 Incentive and Stock Award Plan (incorporated by reference to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2015)

(10.22) *Form of 2016 Long-term Incentive Award under the Marsh & McLennan Companies, Inc. 2011 Incentive and Stock Award Plan (incorporated by reference to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2016)

(10.23) *Form of Deferred Stock Unit Award, dated as of February 24, 2012, under the Marsh & McLennan Companies, Inc. 2011 Incentive and Stock Award Plan (incorporated by reference to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2012)

(10.24) *Form of Deferred Stock Unit Award, dated as of March 1, 2013, under the Marsh & McLennan Companies, Inc. 2011 Incentive and Stock Award Plan (incorporated by reference to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2013)

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*Management contract or compensatory plan or arrangement required to be filed as an exhibit pursuant to Item 15(b) of Form 10-K.

(10.25) *Form of Deferred Stock Unit Award, dated as of March 1, 2014, under the Marsh & McLennan Companies, Inc. 2011 Incentive and Stock Award Plan (incorporated by reference to the Company’s Quarterly Report on Form 10-Q for the quarter ended March 31, 2014)

(10.26) *Form of Deferred Stock Unit Award, dated as of March 1, 2015, under the Marsh & McLennan Companies, Inc. 2011 Incentive and Stock Award Plan (incorporated by reference to the Company’s Quarterly Report on Form 10-Q for the quarter ended March 31, 2015)

(10.27) *Form of Deferred Stock Unit Award, dated as of March 1, 2016 under the Marsh & McLennan Companies, Inc. 2011 Incentive and Stock Award Plan (incorporated by reference to the Company’s Quarterly Report on Form 10-Q for the quarter ended March 31, 2016)

(10.28) *Form of Deferred Stock Unit Award, with grant dates from March 1, 2017 through February 1, 2018, under the Marsh & McLennan Companies, Inc. 2011 Incentive and Stock Award Plan (incorporated by reference to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2017)

(10.29) *Form of Deferred Stock Unit Award, with grant dates from March 1, 2018 through February 1, 2019, under the Marsh & McLennan Companies, Inc. 2011 Incentive and Stock Award Plan (incorporated by reference to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2018)

(10.30) *Form of Restricted Stock Unit Award, dated as of April 1, 2016 under the Marsh & McLennan Companies, Inc. 2011 Incentive and Stock Award Plan (incorporated by reference to the Company’s Quarterly Report on Form 10-Q for the quarter ended June 30, 2016)

(10.31) *Form of Restricted Stock Unit Award, dated as of February 22, 2017 under the Marsh & McLennan Companies, Inc. 2011 Incentive and Stock Award Plan (incorporated by reference to the Company’s Quarterly Report on Form 10-Q for the quarter ended March 31, 2017)

(10.32) *Form of Restricted Stock Unit Award, dated as of February 21, 2018 under the Marsh & McLennan Companies, Inc. 2011 Incentive and Stock Award Plan (incorporated by reference to the Company’s Quarterly Report on Form 10-Q for the quarter ended March 31, 2018)

(10.33) *Form of Performance Stock Unit Award, dated as of February 22, 2017, under the Marsh & McLennan Companies, Inc. 2011 Incentive and Stock Award Plan (incorporated by reference to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2017)

(10.34) *Form of Performance Stock Unit Award, dated as of February 21, 2018, under the Marsh & McLennan Companies, Inc. 2011 Incentive and Stock Award Plan (incorporated by reference to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2018)

*Management contract or compensatory plan or arrangement required to be filed as an exhibit pursuant to Item 15(b) of Form 10-K.

(10.35) *Form of Stock Option Award, dated as of February 22, 2017, under the Marsh & McLennan Companies, Inc. 2011 Incentive and Stock Award Plan (incorporated by reference to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2017)

(10.36) *Form of Stock Option Award, dated as of February 21, 2018, under the Marsh & McLennan Companies, Inc. 2011 Incentive and Stock Award Plan (incorporated by reference to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2018)

(10.37) *Marsh & McLennan Companies, Inc. 2011 Incentive and Stock Award Plan (incorporated by reference to the Company's Registration Statement on Form S-8 dated August 5, 2011, Registration No. 333-176084)

(10.38) *Amendment to the Marsh & McLennan Companies, Inc. 2011 Incentive and Stock Award Plan

(10.39) *Amendments to Certain Marsh & McLennan Companies Equity-Based Awards Due to U.S. Tax Law Changes Affecting Equity-Based Awards granted under the Marsh & McLennan Companies, Inc. 2000 Senior Executive Incentive and Stock Award Plan and the Marsh & McLennan Companies, Inc. 2000 Employee Incentive and Stock Award Plan, effective January 1, 2009 (incorporated by reference to the Company's Annual Report on Form 10-K for the year ended December 31, 2008)

(10.40) *Section 409A Amendment Document, effective as of January 1, 2009 (incorporated by reference to the Company's Annual Report on Form 10-K for the year ended December 31, 2008)

(10.41) *Section 409A Amendment Regarding Payments Conditioned Upon Employment-Related Action to Any and All Plans or Arrangements Entered into by the Marsh & McLennan Companies, Inc., or any of its Direct or Indirect Subsidiaries, that Provide for the Payment of Section 409A Nonqualified Deferred Compensation, effective December 21, 2012 (incorporated by reference to the Company's Annual Report on Form 10-K for the year ended December 31, 2012)

(10.42) *Marsh & McLennan Companies Supplemental Savings & Investment Plan (formerly the Marsh & McLennan Companies Stock Investment Supplemental Plan) Restatement, effective January 1, 2012 (incorporated by reference to the Company's Annual Report on Form 10-K for the year ended December 31, 2012)

(10.43) *First Amendment to the Marsh & McLennan Companies Supplemental Savings & Investment Plan Restatement effective January 1, 2012 (incorporated by reference to the Company's Annual Report on Form 10-K for the year ended December 31, 2016)

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*Management contract or compensatory plan or arrangement required to be filed as an exhibit pursuant to Item 15(b) of Form 10-K.

(10.44) *Second Amendment to the Marsh & McLennan Companies Supplemental Savings & Investment Plan Restatement effective January 1, 2012 (incorporated by reference to the Company's Annual Report on Form 10-K for the year ended December 31, 2017)

(10.45) *Third Amendment to the Marsh & McLennan Companies Supplemental Savings & Investment Plan Restatement effective January 1, 2012

(10.46) *Marsh & McLennan Companies Benefit Equalization Plan and Marsh & McLennan Companies Supplemental Retirement Plan as Restated, effective January 1, 2012 (incorporated by reference to the Company's Annual Report on Form 10-K for the year ended December 31, 2012)

(10.47) *First Amendment to the Marsh & McLennan Companies Benefit Equalization Plan and Marsh & McLennan Companies Supplemental Retirement Plan as Restated effective January 1, 2012 (incorporated by reference to the Company's Annual Report on Form 10-K for the year ended December 31, 2016)

(10.48) *Second Amendment to the Marsh & McLennan Companies Benefit Equalization Plan and Marsh & McLennan Companies Supplemental Retirement Plan as Restated effective January 1, 2012 (incorporated by reference to the Company's Annual Report on Form 10-K for the year ended December 31, 2016)

(10.49) *Marsh & McLennan Companies, Inc. Senior Executive Severance Pay Plan (incorporated by reference to the Company's Quarterly Report on Form 10-Q for the Quarter ended March 31, 2008)

(10.50) *Amendment to the Marsh & McLennan Companies, Inc. Senior Executive Severance Pay Plan, effective December 31, 2009 (incorporated by reference to the Company's Annual Report on Form 10-K for the year ended December 31, 2009)

(10.51) *Marsh & McLennan Companies, Inc. Senior Management Incentive Compensation Plan (incorporated by reference to the Company's Annual Report on Form 10-K for the year ended December 31, 1994)

(10.52) *Marsh & McLennan Companies, Inc. Directors' Stock Compensation Plan - May 31, 2009 Restatement (incorporated by reference to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2009)

(10.53) *Marsh & McLennan Companies International Retirement Plan As Amended and Restated Effective January 1, 2009 (incorporated by reference to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2014)

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*Management contract or compensatory plan or arrangement required to be filed as an exhibit pursuant to Item 15(b) of Form 10-K.

(10.54) *Description of compensation arrangements for independent directors of Marsh & McLennan Companies, Inc. effective June 1, 2016 (incorporated by reference to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2016)

(10.55) *Letter Agreement, effective as of March 20, 2013, between Marsh & McLennan Companies, Inc. and Daniel S. Glaser (incorporated by reference to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2013)

(10.56) *Non-Competition and Non-Solicitation Agreement, effective as of September 18, 2013, between Marsh & McLennan Companies, Inc. and Daniel S. Glaser (incorporated by reference to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2013)

(10.57) *Letter Agreement, effective as of May 14, 2014, between Marsh & McLennan Companies, Inc. and Daniel S. Glaser (incorporated by reference to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2014)

(10.58) *Letter Agreement, effective as of February 22, 2016, between Marsh & McLennan Companies, Inc. and Daniel S. Glaser (incorporated by reference to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2016)

(10.59) *Letter Agreement, effective as of February 22, 2017, between Marsh & McLennan Companies, Inc. and Daniel S. Glaser (incorporated by reference to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2017)

(10.60) *Letter Agreement, effective as of January 1, 2016, between Marsh & McLennan Companies, Inc. and Mark C. McGivney (incorporated by reference to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2015)

(10.61) *Non-Competition and Non-Solicitation Agreement, effective as of January 1, 2016, between Marsh & McLennan Companies, Inc. and Mark C. McGivney (incorporated by reference to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2015)

(10.62) *Letter Agreement, effective as of January 17, 2018, between Marsh & McLennan Companies, Inc. and Mark C. McGivney (incorporated by reference to the Company's Annual Report on Form 10-K for the year ended December 31, 2017)

(10.63) Letter Agreement, effective as of January 16, 2019, between Marsh & McLennan, Inc. and Mark C. McGivney

(10.64) *Letter Agreement, effective as of March 20, 2013, between Marsh & McLennan Companies, Inc. and Julio A. Portalatin (incorporated by reference to the Company's Annual Report on Form 10-K for the year ended December 31 2013)

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*Management contract or compensatory plan or arrangement required to be filed as an exhibit pursuant to Item 15(b) of Form 10-K.

(10.65) *Non-Competition and Non-Solicitation Agreement, effective as of November 21, 2013, between Marsh & McLennan Companies, Inc. and Julio A. Portalatin (incorporated by reference to the Company’s Annual Report on Form 10-K for the year ended December 31, 2013)

(10.66) *Letter Agreement, effective as of May 14, 2014, between Marsh & McLennan Companies, Inc. and Julio A. Portalatin (incorporated by reference to the Company’s Quarterly Report on Form 10-Q for the quarter ended June 30, 2014)

(10.67) *Letter Agreement, effective as of May 18, 2016, between Marsh & McLennan Companies, Inc. and Julio A. Portalatin (incorporated by reference to the Company’s Quarterly Report on Form 10-Q for the quarter ended June 30, 2016)

(10.68) *Letter Agreement, effective as of July 12, 2017, between Marsh & McLennan Companies, Inc. and Julio A Portalatin (incorporated by reference to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2017)

(10.69) *Letter Agreement, effective as of March 1, 2019, between Marsh & McLennan Companies, Inc. and Julio A. Portalatin

(10.70) *Waiver and Release Agreement, dated as of February 14, 2019, between Marsh & McLennan Companies, Inc. and Julio A. Portalatin

(10.71) *Letter Agreement, effective as of July 5, 2017, between Marsh & McLennan Companies, Inc. and John Q. Doyle (incorporated by reference to the Company’s Quarterly Report on Form 10-Q for the quarter ended March 31, 2018)

(10.72) *Non-Competition and Non-Solicitation Agreement, dated as of February 25, 2016, between Marsh & McLennan Companies, Inc. and John Q. Doyle (incorporated by reference to the Company’s Quarterly Report on Form 10-Q for the quarter ended March 31, 2018)

(10.73) *Letter Agreement, effective as of March 20, 2013, between Marsh & McLennan Companies, Inc. and Peter J. Beshar (incorporated by reference to the Company’s Quarterly Report on Form 10-Q for the quarter ended March 31, 2015)

(10.74) *Non-Competition and Non-Solicitation Agreement, effective as of November 21, 2013, between Marsh & McLennan Companies, Inc. and Peter J. Beshar (incorporated by reference to the Company’s Quarterly Report on Form 10-Q for the quarter ended March 31, 2015)

(10.75) Shareholder Undertaking, dated as of September 18, 2018 (incorporated by reference to the Company’s Current Report on Form 8-K dated September 18, 2018)

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*Management contract or compensatory plan or arrangement required to be filed as an exhibit pursuant to Item 15(b) of Form 10-K.

(10.76)	Form of Director Undertaking, dated as of September 18, 2018 (incorporated by reference to the Company’s Current Report on Form 8-K dated September 18, 2018)
(10.77)	Bridge Loan Agreement, dated as of September 18, 2018 by and between Marsh & McLennan Companies, Inc., the lenders party thereto and Goldman Sachs Bank USA, as administrative agent (incorporated by reference to the Company’s Current Report on Form 8-K dated September 18, 2018)
(10.78)	Calculation Agency Agreement, dated as of January 15, 2019, between Marsh & McLennan Companies, Inc. and The Bank of New York Mellon, as calculation agent (incorporated by reference to the Company's Current Report on Form 8-K filed on January 15, 2019)
(14.1)	Code of Ethics for Chief Executive and Senior Financial Officers (incorporated by reference to the Company’s Annual Report on Form 10-K for the year ended December 31, 2002)
(21.1)	List of Subsidiaries of Marsh & McLennan Companies, Inc.
(23.1)	Consent of Independent Registered Public Accounting Firm
(24.1)	Power of Attorney (included on signature page)
(31.1)	Rule 13a-14(a)/15d-14(a) Certification of Chief Executive Officer
(31.2)	Rule 13a-14(a)/15d-14(a) Certification of Chief Financial Officer
(32.1)	Section 1350 Certifications
101.INS	XBRL Instance Document
101.SCH	XBRL Taxonomy Extension Schema
101.CAL	XBRL Taxonomy Extension Calculation Linkbase
101.DEF	XBRL Taxonomy Extension Definition Linkbase
101.LAB	XBRL Taxonomy Extension Label Linkbase
101.PRE	XBRL Taxonomy Extension Presentation Linkbase

*Management contract or compensatory plan or arrangement required to be filed as an exhibit pursuant to Item 15(b) of Form 10-K.

Item 16. Form 10-K Summary

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

MARSH & McLENNAN COMPANIES, INC.

Dated: February 21, 2019

By /S/ DANIEL S. GLASER
Daniel S. Glaser
President and Chief Executive Officer

Each person whose signature appears below hereby constitutes and appoints Katherine J. Brennan and Connor Kuratek, and each of them singly, such person's lawful attorneys-in-fact and agents, with full power to them and each of them to sign for such person, in the capacity indicated below, any and all amendments to this Annual Report on Form 10-K filed with the Securities and Exchange Commission.

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities indicated this 21st day of February, 2019.

Name	Title	Date
/S/ DANIEL S. GLASER Daniel S. Glaser	Director, President & Chief Executive Officer	February 21, 2019
/S/ MARK C. MCGIVNEY Mark C. McGivney	Chief Financial Officer	February 21, 2019
/S/ STACY M. MILLS Stacy M. Mills	Vice President & Controller (Chief Accounting Officer)	February 21, 2019
/S/ ANTHONY K. ANDERSON Anthony K. Anderson	Director	February 21, 2019
/S/ OSCAR FANJUL Oscar Fanjul	Director	February 21, 2019
/S/ H. EDWARD HANWAY H. Edward Hanway	Director	February 21, 2019
/S/ DEBORAH C. HOPKINS Deborah C. Hopkins	Director	February 21, 2019
/S/ ELAINE LA ROCHE Elaine La Roche	Director	February 21, 2019
/S/ STEVEN A. MILLS Steven A. Mills	Director	February 21, 2019
/S/ BRUCE P. NOLOP Bruce P. Nolop	Director	February 21, 2019
/S/ MARC D. OKEN Marc D. Oken	Director	February 21, 2019
/S/ MORTON O. SCHAPIRO Morton O. Schapiro	Director	February 21, 2019
/S/ LLOYD M. YATES Lloyd M. Yates	Director	February 21, 2019
/S/ R. DAVID YOST R. David Yost	Director	February 21, 2019

Exhibit 31.1

CERTIFICATIONS

I, Daniel S. Glaser, certify that:

1. I have reviewed this Annual Report on Form 10-K of Marsh & McLennan Companies, Inc. (the "registrant");

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 21, 2019

/s/ Daniel S. Glaser

Daniel S. Glaser
President and Chief Executive Officer

Exhibit 31.2

CERTIFICATIONS

I, Mark C. McGivney, certify that:

1. I have reviewed this Annual Report on Form 10-K of Marsh & McLennan Companies, Inc. (the "registrant");

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 21, 2019

/s/ Mark C. McGivney

Mark C. McGivney
Chief Financial Officer

Exhibit 32.1

Certification of Chief Executive Officer and Chief Financial Officer

The certification set forth below is being submitted in connection with the Annual Report on Form 10-K for the year ended December 31, 2018 of Marsh & McLennan Companies, Inc. (the "Report") for the purpose of complying with Rule 13a-14(b) or Rule 15d-14(b) under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and Section 1350 of Chapter 63 of Title 18 of the United States Code.

Daniel S. Glaser, the President and Chief Executive Officer, and Mark C. McGivney, the Chief Financial Officer, of Marsh & McLennan Companies, Inc. each certifies that, to the best of his knowledge:

1. the Report fully complies with the requirements of Section 13(a) or 15(d) of the Exchange Act; and
2. the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of Marsh & McLennan Companies, Inc.

Date: February 21, 2019

/s/ Daniel S. Glaser

Daniel S. Glaser
President and Chief Executive Officer

Date: February 21, 2019

/s/ Mark C. McGivney

Mark C. McGivney
Chief Financial Officer

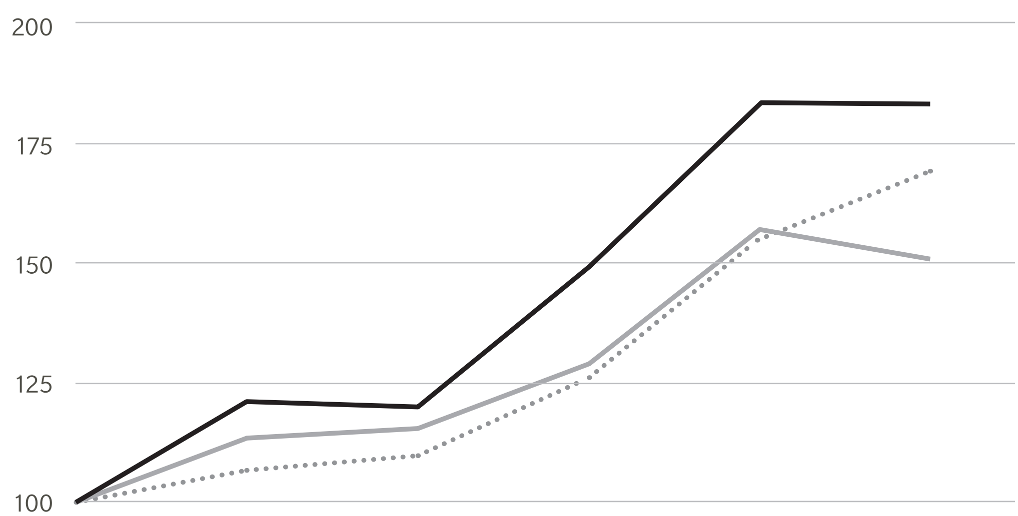
Stock performance graph

The following graph compares the annual cumulative stockholder return for the five-year period ended December 31, 2018 on: Marsh & McLennan Companies common stock; a management-constructed composite industry index; and the Standard & Poor's 500 Stock Index. The graph assumes an investment of $100 on December 31, 2013 in Marsh & McLennan Companies common stock and each of the two indices, with dividends reinvested.

Returns on the composite industry index reflect allocation of the total amount invested among the constituent stocks on a pro rata basis according to each issuer's start-of-the-year market capitalization. The composite industry index consists of Aon plc, Willis Towers Watson Public Limited Company and Arthur J. Gallagher & Co.

Comparison of Cumulative Total Stockholder Return

($100 INVESTED 12/31/13 WITH DIVIDENDS REINVESTED)



	2013	2014	2015	2016	2017	2018
Marsh & McLennan Companies	100	121	120	149	183	183
Composite Industry Index	100	106	110	126	155	169
S&P 500	100	114	115	129	157	150

Stockholder information

ANNUAL MEETING
The 2019 Annual Meeting of Stockholders will be held at 10:00 a.m., Thursday, May 16, 2019, at the principal executive offices of Marsh & McLennan Companies, Inc. at the following location:

1166 Avenue of the Americas
New York, NY 10036

INVESTOR INFORMATION
Stockholders of record inquiring about reinvestment and payment of dividends, consolidation of accounts, stock certificate holdings, stock certificate transfers and address changes should contact:

EQ Shareowner Services
P.O. Box 64854
St. Paul, MN 55164-0854
Telephone: 800 457 8968 or
651 450 4064 (Outside US/Canada)

Mailing Address:
1110 Centre Pointe Curve, Suite 101
Mendota Heights, MN 55120-4100
EQ's website:
shareowneronline.com

Stockholders who hold shares of Marsh & McLennan Companies beneficially through a broker, bank or other intermediary organization should contact that organization for these services.

DIRECT PURCHASE PLAN
Stockholders of record and other interested investors can purchase Marsh & McLennan Companies common stock directly through the Company's transfer agent and the Administrator for the Plan, EQ Shareowner Services. A brochure on the Plan is available on the EQ Shareowner Services website or by contacting EQ Shareowner Services directly:

EQ Shareowner Services
P.O. Box 64854
St. Paul, MN 55164-0854
Telephone: 800 457 8968 or
651 450 4064 (Outside US/Canada)
EQ's website:
shareowneronline.com

FINANCIAL INFORMATION
Copies of Marsh & McLennan Companies annual reports and Forms 10-K and 10-Q are available on the Company's website. These documents also may be requested by contacting:

Marsh & McLennan Companies, Inc.
Investor Relations
1166 Avenue of the Americas
New York, NY 10036
Telephone: 212 345 0072
Website: mmc.com

STOCK LISTINGS
Marsh & McLennan Companies common stock (NYSE ticker symbol: MMC) is listed on the New York, Chicago and London Stock Exchanges.

PROCEDURES FOR RAISING COMPLAINTS AND CONCERNS REGARDING ACCOUNTING MATTERS
Marsh & McLennan Companies is committed to complying with all applicable accounting standards, internal accounting controls, audit practices and securities laws and regulations (collectively, "Accounting Matters"). To raise a complaint or concern regarding Accounting Matters, you may contact the Company by mail, telephone or online. You may review the Company's procedures for handling complaints and concerns regarding Accounting Matters at mmc.com.

By mail:
Marsh & McLennan Companies, Inc.
Audit Committee
c/o Katherine J. Brennan,
Corporate Secretary
1166 Avenue of the Americas
New York, NY 10036

By telephone or online:
Visit ethicscomplianceline.com for dialing instructions or to raise a concern online.

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FSC® C132107

MARSH GUY CARPENTER MERCER OLIVER WYMAN

Marsh & McLennan Companies, Inc.
1166 Avenue of the Americas
New York, NY 10036
mmc.com

Purchasing Department
4400 University Drive, Mailstop 3C5
Fairfax, VA 22030
Voice: 703.993.2580 | Fax: 703.993.2589
http://fiscal.gmu.edu/purchasing/

VIRGINIA ASSOCIATION OF STATE COLLEGE & UNIVERSITY PURCHASING PROFESSIONALS

VASCUPP

REQUEST FOR PROPOSALS
GMU-1603-20

ISSUE DATE:	January 6, 2020
TITLE:	Insurance Broker/Risk Management Consulting Services
PRIMARY PROCUREMENT OFFICER:	Erin Rauch, Assistant Director, erauch@gmu.edu
SECONDARY PROCUREMENT OFFICER:	James F. Russell, Director, jrussell@gmu.edu

QUESTIONS/INQUIRIES: E-mail all inquiries to both Procurement Officers listed above, no later than 4:00 PM EST on January 16, 2020. **All questions must be submitted in writing.** Responses to questions will be posted on the Mason Purchasing Website by 5:00 PM EST on January 21, 2020. Note: Questions must be submitted in WORD format. Also see section III. COMMUNICATION, herein.

PROPOSAL DUE DATE AND TIME: February 5, 2020 @ 2:00 PM EST. Hand deliver or mail proposals directly to the address above. Electronic submissions will not be accepted. A public opening will not be held. Late proposals will not be accepted.

Note: A return envelope is not being provided. It is the responsibility of the Offeror to ensure the proposal is submitted in a sealed envelope, box, container, etc. that clearly identifies the contents as a proposal submission in response to this Request for Proposal. See Section XIII Paragraph C herein. If delivering proposals by hand, deliver to the Purchasing Department located in Suite 4200 of Alan and Sally Merten Hall (Merten Hall), Fairfax Campus. Campus Map. Office hours are 8:30AM to 5:00PM.

In Compliance With This Request For Proposal And To All The Conditions Imposed Therein And Hereby Incorporated By Reference, The Undersigned Offers And Agrees To Furnish The Goods/Services In Accordance With The Attached Signed Proposal Or As Mutually Agreed Upon By Subsequent Negotiations.

Name and Address of Firm:

Legal Name: MARSH, INC.	Date: FEBRUARY 5, 2020
DBA:	
Address: 1051 EAST CARY ST, STE 900 RICHMOND, VA	By: Eric D Harley Signature
FEI/FIN No. 36-1436000	Name: ERIC D. HARLEY
Fax No. (804) 344-8620	Title: SR. VICE PRESIDENT
Email: eric.d.harley@marsh.com	Telephone No. (804) 317-3163

SWaM Certified: Yes: ________ No: X (See Section VII. SWaM CERTIFICATION for complete details).

SWaM Certification Number: ______________________

This public body does not discriminate against faith-based organizations in accordance with the *Governing Rules, § 36* or against a Bidder/Offeror because of race, religion, color, sex, national origin, age, disability, or any other prohibited by state law relating to discrimination in employment.

ATTACHMENT A
VENDOR DATA SHEET
TO BE COMPLETED BY OFFEROR

1. QUALIFICATION OF OFFEROR: The Offeror certifies that they have the capability and capacity in all respects to fully satisfy all of the contractual requirements.

2. YEARS IN BUSINESS: Indicate the length of time in business providing this type of service:

Type of Business: RISK AND INSURANCE CONSULTING . 130 Years Ø Months

3. BUSINESS STATUS:

A. Type of organization (circle one):

Individual	Partnership	Corporation
Sole Proprietor	Government	Other (explain)

B. Category (circle one):

Manufacturer/Producer	Mfg.'s Agent	Retailer
Service Establishment	Distributor	Wholesaler
Other (explain) INSURANCE BROKING + RISK MGMT SVCS		

C. Status: If your classification is certified by the Virginia Department of Small Business and Supplier Diversity (DSBSD), provide your certification number ______________. For certification assistance, please visit http://www.sbsd.virginia.gov/. (Please check all applicable classifications. Must be certified with **VIRGINIA DSBSD** to qualify)

_____ (MB) MINORITY OWNED. "Minority-owned business" means a business that is at least 51% owned by one or more minority individuals who are U.S. citizens or legal resident aliens, or in the case of a corporation, partnership, or limited liability company or other entity, at least 51% of the equity ownership interest in the corporation, partnership, or limited liability company or other entity is owned by one or more minority individuals who are U.S. citizens or legal resident aliens, and both the management and daily business operations are controlled by one or more minority individuals.

_____ (WB) WOMAN OWNED. "Women-owned business" means a business that is at least 51% owned by one or more women who are U.S. citizens or legal resident aliens, or in the case of a corporation, partnership, or limited liability company or other entity, at least 51% of the equity ownership interest is owned by one or more women who are citizens of the United States or legal resident aliens, and both the management and daily business operations are controlled by one or more women.

_____ (SB) SMALL BUSINESS: "Small business" means a business that is at least 51% independently owned and controlled by one or more individuals who are U.S. citizens or legal resident aliens, and together with affiliates, has 250 or fewer employees, or average annual gross receipts of $10 million or less averaged over the previous three years. One or more of these individual owners shall control both the management and daily business operations of the small business.

__X__ LARGE BUSINESS

I certify the accuracy of this information.

Signed: Eric D Harley Title: Sr. VICE PRESIDENT

Printed Name: ERIC D. HARLEY Date: FEBRUARY 5, 2020

GEORGE MASON UNIVERSITY

GMU-1165-14
STANDARD CONTRACT

This Contract entered on this ____ day of August, 2014 by Marsh USA Inc., located at1255 23rd Street NW, Suite 400, Washington, DC 20037 (hereinafter called "Marsh or "Contractor"), and George Mason University, located at 4400 University Drive, Fairfax, Virginia 22030 (hereinafter called "Mason" or "Client").

I. **WITNESSETH** that the Contractor and Mason, in consideration of the mutual covenants, promises and agreement herein contained, agree as follows:

II. **SCOPE OF CONTRACT:** The Contractor shall provide Insurance Brokerage and Risk Management Consulting Services for Mason's Office of Risk Management as set forth in the Contract Documents.

III. **PERIOD OF CONTRACT:** One (1) year from effective date of contract with five (5) one-year optional renewal periods.

IV. **PRICE SCHEDULE:**

A. Insurance Brokerage Commission Range 5 -15% depending on the coverage,line and industry standards – the commission rate percentage does not include the eVA transaction fee. This commission rate percentage includes all the services listed in the Marsh cores services – see Exhibit C.

B. Risk Management Consulting Services – these rates include overhead, travel, expenses and eVA transaction fees.
  1. Associate Consultant/Insurance Specialist $175.00/hour
  2. Consultant/Client Manager $250.00/hour
  3. Senior Consultant/Senior Client Manager $295.00/hour

C. All Other Services: Price to be negotiated on a per project basis.

V. **CONTRACT ADMINISTRATION:** Ms. Joyce French, Director, Office of Risk Management shall serve as Contract Administrator for this Contract and shall use all powers under the Contract to enforce its faithful performance. The Contract Administrator shall determine the amount, quality and acceptability of work and shall decide all other questions in connection with the work. All direction and order from Mason shall be transmitted through the Contract Administrator, however, the Contract Administrator shall have no authority to approve changes which shall alter the concept or scope or change the basis for compensation.

VI. **METHOD OF PAYMENT:** Paymode X, payable Net 30.

VII. **THE CONTRACT DOCUMENTS SHALL CONSIST OF (In order of precedence):**

A. This signed contract form;
B. Services and Compensation as set forth on Exhibit A and Exhibit C.
C. Additional Terms and Conditions as set forth on Exhibit B.

VIII. **GOVERNING RULES/PURCHASING MANUAL:** This Contract is governed by the provisions of the Restructured Higher Education Financial and Administrative Operations Act, Chapter 4.10 (§ 23-38.88 et seq.) of Title 23 of the Code of Virginia, and in particular § 23-38.90 of the Restructuring Act, referred to as the *"Governing Rules"* and the

Purchasing Manual for Institutions of Higher Education and their Vendors. Documents may be viewed at: https://vascupp.org

IX. **CONTRACT PARTICIPATION:** It is the intent of this Contract to allow for cooperative procurement. Accordingly, any public body, public or private health or educational institutions, or Mason's affiliated corporations may access this Contract if authorized by the Contractor.

Participation in this cooperative procurement is strictly voluntary. If authorized by the Contractor, this Contract may be extended to the entities indicated above to purchase at Contract prices in accordance with Contract terms. The Contractor shall notify Mason in writing of any such entities accessing the Contract.

No modification of this Contract or execution of a separate contract is required to participate. The Contractor will provide semi-annual usage reports for all entities accessing the Contract. Participating entities shall place their own orders directly with the Contractor and shall fully and independently administer their use of the Contract to include contractual disputes, invoicing and payments without direct administration from Mason. Mason shall not be held liable for any costs or damages incurred by any other participating entity as a result of any authorization by the Contractor to extend the Contract. It is understood and agreed that Mason is not responsible for the acts or omissions of any entity, and will not be considered in default of the Contract no matter the circumstances.

Use of this Contract does not preclude any participating entity from using other contracts or competitive processes as the need may be.

X. **STANDARD TERMS AND CONDITIONS:**

A. APPLICABLE LAW AND CHOICE OF FORUM: This Contract shall be construed, governed, and interpreted pursuant to the laws of the Commonwealth of Virginia. All disputes arising under this Contract shall be brought before an appropriate court in the Commonwealth of Virginia.

B. ANTI-DISCRIMINATION: By entering into this contract contractor certifies to the Commonwealth that they will conform to the provisions of the Federal Civil Rights Act of 1964, as amended, as well as the Virginia Fair Employment Contracting Act of 1975, as amended, where applicable, the Virginians With Disabilities Act, the Americans With Disabilities Act and §§ 9&10 of the *Governing Rules.* If the award is made to a faith-based organization, the organization shall not discriminate against any recipient of goods, services, or disbursements made pursuant to the contract on the basis of the recipient's religion, religious belief, refusal to participate in a religious practice, or on the basis of race, age, color, gender or national origin and shall be subject to the same rules as other organizations that contract with public bodies to account for the use of the funds provided; however, if the faith-based organization segregates public funds into separate accounts, only the accounts and programs funded with public funds shall be subject to audit by the public body. (*Governing Rules*, § 35).

In every contract over $10,000 the provisions in 1. and 2. below apply:

1. During the performance of this contract, the contractor agrees as follows:

    a. The contractor will not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin, age, disability, or any other basis prohibited by state law relating to discrimination in employment, except where there is a bona fide occupational qualification reasonably necessary to the normal operation of the contractor. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.

    b. The contractor, in all solicitations or advertisements for employees placed by or on behalf of the contractor, will state that such contractor is an equal opportunity employer.

    c. Notices, advertisements and solicitations placed in accordance with federal law, rule or regulation shall be deemed sufficient for the purpose of meeting these requirements.

2. The contractor will include the provisions of 1. above in every subcontract or purchase order over $10,000, so that the provisions will be binding upon each subcontractor or vendor.

C. (Intentionally left blank.)

D. ASSIGNMENT: Neither party will assign or otherwise transfer its rights or obligations under this Contract without both parties' prior written consent. Any attempted assignment, transfer, or delegation without such consent is void.

E. AUDIT: The contractor shall retain all books, records, and other documents relative to this contract for five (5) years after final payment, or until audited by the Commonwealth of Virginia, whichever is sooner. The agency, its authorized agents, and/or state auditors shall have full access to and the right to examine any of said materials during said period. Any audit shall be upon reasonable advance notice, during ordinary business hours and subject to, and limited by, reasonable and appropriate confidentiality obligations and reasonable scope limitations which may be required to protect the confidential and proprietary nature Contractor's operations and the shared nature of systems which may be used to provide the Services.

F. AVAILABILITY OF FUNDS: It is understood and agreed between the parties herein that the agency shall be bound hereunder only to the extent of the funds available or which may hereafter become available for the purpose of this agreement.

G. AUTHORIZED SIGNATURES: The signatory for each Party certifies that he or she is an authorized agent to sign on behalf such Party.

H. CANCELLATION OF CONTRACT: Either party reserves the right to cancel and terminate this Contract, in part or in whole, without penalty, upon 60 days written notice to the other party. In the event the initial Contract period is for more than 12 months, the resulting Contract may be terminated by either party, without penalty, after the initial 12 months of the Contract period upon 60 days written notice to the other party. If Contractor or Mason terminates this Agreement, Contractor's compensation will be adjusted pro-rata to reflect the duration of the Agreement.

The obligation of Contractor and its affiliates (including its UK affiliates) to provide Services to you will cease upon the effective date of termination, unless otherwise agreed in writing. Contractor will assist you in arranging a smooth transition process, subject to receipt by Contractor of all amounts due to Contractor from you.

I. CLAIMS: Contractual claims, whether for money or other relief, shall be submitted in writing no later than 60 days after final payment. However, written notice of the contractor's intention to file a claim shall be given at the time of the occurrence or beginning of the work upon which the claim is based. Nothing herein shall preclude a contract from requiring submission of an invoice for final payment within a certain time after completion and acceptance of the work or acceptance of the goods. Pendency of claims shall not delay payment of amounts agreed due in the final payment.

1. The firm must submit written claim to:
   Director of Purchasing and Accounts Payable
   George Mason University
   4400 University Drive, MSN 3C5
   Fairfax, VA 22030

2. The firm must submit any unresolved claim in writing no later than 60 days after final payment to the Director of Purchasing and Accounts Payable.

3. Upon receiving the written claim, the Director of Purchasing and Accounts Payable will review the written materials relating to the claim and will mail his or her decision to the firm within 60 days after receipt of the claim.

4. The firm may appeal the Director of Purchasing and Accounts Payable's decision in accordance with § 55 of the *Governing Rules*.

J. COLLECTION AND ATTORNEY'S FEES: The Contractor shall pay to Mason any reasonable attorney's fees or collection fees, at the maximum allowable rate permitted under Virginia law, incurred in enforcing this Contract or pursuing and collecting past-due amounts under this Contract.

K. COMPLIANCE WITH LAW: All goods and services provided to Mason shall be done so in accordance with any and all local, state and federal laws, regulations and/or requirements. This includes any applicable provisions of FERPA or the "Government Data Collection and Dissemination Practices Act" of the Commonwealth of Virginia.

L. CONFIDENTIALITY OF PERSONAL IDENTIFIABLE INFORMATION: The Contractor agrees that information and data obtained as to personal facts and circumstances related to patients or clients will be collected and held confidential, during and following the term of this contract, and will not be divulged without the individual's and Mason's written consent and only in accordance with federal law or the Code of Virginia. The Contractor shall utilize, access, or store personal identifiable information as part of the performance of this contract in a secure environment and immediately notify Mason of any breach or suspected breach in the security of such information. Contractor shall allow Mason to participate in the investigation of incidents. Contractor may disclose Confidential Information in furtherance of services rendered by Contractor to Mason, which may include the release to insurers and other financial institutions of Confidential Information relevant to the underwriting and/or evaluation of Mason's risks and processing of its claims. Contractor's obligations of confidentiality will not apply to information that is available or becomes available in the public domain, already known to Contractor, developed independently by Contractor or received by Contractor from a third party or disclosed by law.

M. CONFLICT OF INTEREST: Contractor represents to Mason that its entering into this Contract with Mason and its performance through its agents, officers and employees does not and will not involve, contribute to nor create a conflict of interest prohibited by Virginia State and Local Government Conflict of Interests Act (Va. Code 2.2-3100 *et seq*), the Virginia Ethics in Public Contracting Act (§57 of the *Governing Rules)*, the Virginia Governmental Frauds Act (Va. Code 18.2 – 498.1 *et seq*) or any other applicable law or regulation. From time to time, Contractor (and/or its affiliates) may be engaged by one or more interested parties other than the Client in connection with a project. Those at Contractor or its affiliates performing services for such other parties will act solely for such other parties and will have no duties or obligations to the Client with respect to such project. Contractor shall not be restricted from providing services to any other client, including parties which may have interests adverse to the Client.

N. DEBARMENT STATUS: As of the effective date, the Contractor certifies that it is not currently debarred by the Commonwealth of Virginia from submitting bids or proposals on contracts for the type of services covered by this Contract, nor is the Contractor an agent of any person or entity that is currently so debarred.

O. ENTIRE CONTRACT: This Contract constitutes the entire understanding of the Parties with respect to the subject matter herein and supersedes all prior oral or written contracts with respect to the subject matter herein. This Contract can be modified or amended only by a writing signed by all of the Parties.

P. FORCE MAJEURE: Mason will not be responsible for any losses resulting from delay or failure in performance resulting from any cause beyond Mason's control, including without limitation: war, strikes or labor disputes, civil disturbances, fires, natural disasters, and acts of God.

Q. IMMIGRATION REFORM AND CONTROL ACT OF 1986: By entering into this contract Contractor certifies that they do not and will not during the performance of this contract employ illegal alien workers or otherwise violate the provisions of the federal Immigration Reform and Control Act of 1986.

R. INDEMNIFICATION: Contractor agrees to indemnify, defend and hold harmless George Mason University the Commonwealth of Virginia, its officers, agents, and employees from any third party claims, damages and actions of any kind or nature, whether at law or in equity, arising from or caused by any services of any kind or nature furnished by the contractor, provided that such liability is not attributable to the sole negligence of Mason. Marsh will indemnify Mason against third party liabilities and only to the extent they arise out of Contractor's negligent acts or omissions or wilful misconduct in connection with Contractor's services for Mason or Contractor's breach of its agreement with Mason.

S. INDEPENDENT CONTRACTOR: The Contractor is not an employee of Mason, but is engaged as an independent contractor. The Contractor shall indemnify and hold harmless the Commonwealth of Virginia, Mason, and its employees and agents, with respect to all withholding, Social Security, unemployment compensation and all other taxes or amounts of any kind relating to the Contractor's performance of this contract. Nothing in this contract shall be construed as authority for the Contractor to make commitments which will bind Mason or to otherwise act on behalf of Mason, except as Mason may expressly authorize in writing.

T. INFORMATION TECHNOLOGY ACCESS ACT: The Contractor certifies that it is in complete compliance with §2.2-3500 - §2.2-3504 of the Code of Virginia. More information can be viewed at: http://leg1.state.va.us/cgi-bin/legp504.exe?000+cod+TOC02020000035000000000000

Compliance with the foregoing non-visual access standards will not be required if Mason's Director of Purchasing, or designee, determines that 1) the Technology is not available with non-visual access because the essential elements of the Technology are visual and 2) non-visual equivalence is not available. Installation of hardware, software, or peripheral devices used for non-visual access is not required when the Technology is being used exclusively by individuals who are not blind or visually impaired, but applications programs and underlying operating systems (including the format of the data) used for the manipulation and presentation of information will permit the installation and effective use of non-visual access software and peripheral devices.

U. INTELLECTUAL PROPERTY: Contractor warrants and represents that it will not violate or infringe any intellectual property right or any other personal or proprietary right and shall indemnify and hold harmless Mason against any claim of infringement of intellectual property rights which may arise under this contract.

V. PUBLICITY: The Contractor shall not use, in its external advertising, marketing programs or promotional efforts, any data, pictures, trademarks or other representation of Mason except on the specific written authorization in advance by Mason's designated representative.

W. ORDERING OPTION: Mason, or any other public entity so identified, may during a twelve (12) month period at the conclusion of the original Contract and with concurrence of the Contractor place additional orders under the Contract at the original hourly rate(s) through the issuance of separate purchase orders from Mason or any other public entity.

X. REMEDIES: If the Contractor breaches this Contract, in addition to any other rights or remedies, Mason may terminate this Contract without prior notice.

Y. RENEWAL OF CONTRACT: This contract may be renewed by George Mason University upon written agreement of both parties for five (5) one-year optional periods, under the terms of the current contract, and at a reasonable time (approximately 90 days) prior to the expiration.

Z. SEVERABILITY: It is the intent of the parties that the provisions of this Agreement shall be enforced to the fullest extent permitted by applicable law. To the extent that the terms set forth in this Agreement or any word, phrase, clause or sentence is found to be illegal or unenforceable for any reason, such word, phrase, clause or sentence shall be modified or deleted in such manner so as to afford the party for whose benefit it was intended the fullest benefit commensurate with making this Agreement, as modified, enforceable, and the balance of this Agreement shall not be affected thereby, the balance being construed as severable and independent.

AA. SOVEREIGN IMMUNITY: Northing in this Contract shall be deemed a waiver of the sovereign immunity of the Commonwealth of Virginia and of Mason.

BB. UNIVERSITY REVIEW/APPROVAL: All goods, services, products, design, etc. produced by the Contractor for or on behalf of Mason are subject to Mason's review and approval.

CC. WAIVER: The failure of a party to enforce any provision in this Contract shall not be deemed to be a waiver of such right.

DD. NON-DISCRIMINATION: All parties to this Contract agree to not discriminate on the basis of race, color, religion, national origin, sex, pregnancy, childbirth or related medical conditions, age (except where sex or age is a bona fide occupational qualification), marital status or disability.

EE. ADDITIONAL TERMS:

Responsibilities of the Client. The Client shall be solely responsible for the accuracy and completeness of information and other documents furnished to Contractor and/or insurers by the Client and the Client shall sign any required application for insurance. The Client recognizes and agrees that all insurance coverages placed in connection with this Contract and all services, evaluations, reports and recommendations provided by Contractor are based on data and information furnished by the Client. Contractor will be under no obligation to investigate or verify the completeness or accuracy of any such data or information, nor will Contractor have any liability for any errors, deficiencies or omissions in any services, evaluations, reports or recommendations provided to, or any insurance coverages placed on behalf of, the Client that are based on such inaccurate or incomplete data or information. The Client understands that the failure to provide all necessary information to an insurer, whether intentional or by error, could result in the impairment or voiding of coverage."

Intermediaries. When in Contractor's professional judgment it is necessary or appropriate and subject to the Client's prior approval, Contractor may utilize the services of other intermediaries, including wholesale brokers, to assist in the marketing of the Client's insurance. Such intermediaries may be affiliates of Contractor. "

Disclaimers. (a) Contractor does not speak for any insurer, is not bound to utilize any particular insurer and does not have the authority to make binding commitments on behalf of any insurer, except under special circumstance which Contractor shall always make known to the Client. Contractor shall not be responsible for the solvency of any insurer or its ability or willingness to pay claims, return premiums or other financial obligations. Contractor does not guarantee or make any representation or warranty that insurance can be placed on terms acceptable to the Client. The Client acknowledges that, in performing Services, Contractor and its affiliates are not acting as a fiduciary for the Client, except to the extent required by applicable law. Any reports or advice provided by Contractor should not be relied upon as accounting, legal, regulatory or tax advice. In all instances, Contractor recommends that the Client seek your own advice on such matters from professional accounting, legal, regulatory and tax advisors."

(b) If Contractor has taken over any existing program or policies implemented by another broker, Contractor will not assume any responsibility for the adequacy or effectiveness of those programs or policies or any acts or omissions occurring prior to Contractor's engagement. Within a reasonable time, Contractor will have completed a review of such programs and policies and will make recommendations it believes are necessary."

(c) Any loss control services and/or surveys performed by Contractor under this Contract are advisory in nature. Such services are limited in scope and do not constitute a safety inspection as provided by a safety engineering service. Contractor does not claim to find or include every loss potential, hazard, statutory or code violation or violation of good practice. All surveys and reports are based upon conditions observed and information supplied by the Client. Contractor does not expressly or impliedly guarantee or warrant in any way the safety of any site or operation or that the Client or any of its sites or operations is in compliance with federal, state or local laws, codes, statutes, ordinances or recommendations.

(d) Contractor is not authorized to practice law and none of Contractor's advice or services shall be construed as, or a substitute for, legal advice. Contractor's services may include advice and recommendations; however all decisions in connection with the implementation of such advice and recommendations shall be the sole responsibility of, and made by, Client.

(e) Contractor may provide to the Client information and services related to insurance regulatory and insurance tax issues relating to the Client's insurance program. Any reports or advice provided by Contractor will be based on publicly available information and Contractor's experience as an insurance broker and risk consultant in dealing with such matters for other clients and should not be relied upon as accounting, regulatory or tax advice. In all instances, Contractor recommends that the Client seek its own advice on accounting, regulatory and tax matters from professional legal and tax advisers.

(f) Contractor may provide the Client with modeling and/or business analytics services, including hazard loss and catastrophe modeling, loss forecasting and triangles, adverse event simulation, scenario and portfolio risk analysis, decision mapping, risk bearing and risk retention tolerance analysis and insurance program evaluation analysis ("Modeling and Analytics"). Modeling and Analytics services will be based upon a number of assumptions, conditions and factors. If any of them or any information provided to Contractor are inaccurate or incomplete or should change, the Modeling and Analytics provided by Contractor could be materially affected. These services are subject to inherent uncertainty, and actual results may differ materially from that projected by Contractor. They are provided solely for the Client's benefit, and do not constitute, and are not intended to be a substitute for, actuarial, accounting or legal advice. Contractor shall have no liability to any third party in connection with these services or to the Client with regard to any services performed or provided by a third party. Except to the Client's insurers in connection with the placement of coverage by Contractor, the Client shall not share any of Contractor's Modeling and Analytics work product with a third party without Contractor's prior written consent.

Limitation of Liability. The aggregate liability of Contractor, its affiliates and its and their employees to the Client arising out of or relating to the provision of services by Contractor or its affiliates shall not exceed $10 million. This provision applies to the fullest extent permitted by applicable law and to all causes of action, including, without limitation, breach of contract, breach of warranty, negligence, strict liability, misrepresentation and other torts.

XI. **RISK MANAGEMENT CONSULTING SERVICES.** The following provisions shall apply only with respect to Risk Management Consulting Services provided by Consultant, and shall not apply to any other service provided by Consultant:

(a) CONSULTANT WORK PRODUCT. All works of authorship, including but not limited to, designs, plans, specifications, programs, computer output, valuations, estimates, report, data, memoranda, findings, recommendations of every description and every innovation, conception, improvement, discovery or invention and any intellectual property rights associated therewith which are created, utilized or developed by Marsh or its representatives in conjunction with this Agreement ("Work Product") is and remains the property of Marsh; provided, however, that you shall have and are hereby granted the non-transferable right to use Work Product delivered to you by Marsh solely for your internal risk management purposes (the "Intended Purpose"). Notwithstanding the foregoing, Marsh shall acquire no rights of ownership in intellectual property rights subsisting in any material provided by you to Marsh in connection with this Agreement.

You shall not use the Work Product provided by Marsh to you for any purpose other than the Intended Purpose. Notwithstanding anything herein to the contrary, Mason may use and rely on Work Product for its internal operations, and Work Product may be shared and republished within the University or other agencies of the Commonwealth of Virginia. Marsh acknowledges that Mason, as an agency of the Commonwealth of Virginia, is subject to the Virginia Freedom of Information Act (the "Act"), and that Work Product may be subject to disclosure under such Act. Work Product and Marsh's analysis, advice, findings, opinions and recommendations are solely for your information and may not be quoted in whole or in part or otherwise referred to, disclosed or delivered by you to any other person or entity without the prior written consent of Marsh. Where you make any alteration or modification to any of the Work Product, all references to Marsh shall be removed therefrom.

(b) ENTRY AND COOPERATION. You shall arrange for access to and make all provisions for Marsh to enter your property as required by Marsh to perform the Services. You shall arrange for and make provisions for entry to work space for Marsh in order for Marsh to perform such Services in a timely manner. You shall make available in a timely manner, the documents and information deemed necessary by Marsh to complete such Services. You shall inform Marsh promptly upon your discovering that any such information or document is, or becomes, untrue, incomplete or inaccurate. In performing the Services, Marsh shall, and shall be entitled to, rely upon all information and documents provided to it by you or on your behalf. Marsh shall not be responsible for the accuracy or verification of any such information or document.

(c) LIMIT OF LIABILITY. In no event shall either party to this agreement be liable for any indirect, special, incidental, consequential or punitive damages or for any lost profits arising out of or relating to any services provided by Marsh or its affiliates. The aggregate liability of Marsh, its affiliates and its and their employees to you or your affiliates arising out of or relating to the provision of services by Marsh or its affiliates shall not exceed the total compensation paid to Marsh for the Services hereunder. This provision applies to the fullest extent permitted by applicable law.

(d) NO THIRD PARTY BENEFITS. The Parties hereto mutually agree that this Agreement is intended by them to be solely for the benefit of the Parties hereto and that no third parties may rely on any reports, analysis or other material provided by Marsh or shall obtain any direct or indirect benefits from the Agreement, have any claim or be entitled to any remedy under this Agreement or otherwise in any way be regarded as third party beneficiaries under this Agreement.

(e) LIMITATION ON WARRANTIES THIS IS A SERVICES ENGAGEMENT. MARSH WARRANTS THAT IT WILL PERFORM SERVICES HEREUNDER IN GOOD FAITH CONSISTENT WITH THE STANDARD OF CARE OF SIMILAR CONSULTANTS PERFORMING SIMILAR SERVICES. MARSH DISCLAIMS ALL OTHER WARRANTIES, EITHER EXPRESS OR IMPLIED. ALL CONSULTING ACTIVITIES PERFORMED BY MARSH ARE ADVISORY IN NATURE. ALL REPORTS WILL BE BASED UPON CONDITIONS OBSERVED AND INFORMATION SUPPLIED BY YOU. MARSH DOES NOT GUARANTEE OR WARRANT THE SAFETY OF ANY YOU'S PROPERTIES OR OPERATIONS OR THAT YOU OR ANY SUCH PROPERTIES OR OPERATIONS ARE IN COMPLIANCE WITH FEDERAL, STATE OR LOCAL LAWS, CODES, STATUTES, ORDINANCES, STANDARDS OR RECOMMENDATIONS.

Marsh USA, Inc.
By:

Dana Gannon ______________________ Date 8/11/2014
Signature

Name: DANA GANNON

Title: SR. VICE PRESIDENT

George Mason University
By:

James F Russell ______________________ 8/8/14
Signature Date

Name: JAMES F RUSSELL

Title: ASSOC. DIRECTOR

Exhibit A

A. GENERAL REQUIREMENTS: Contractor shall act as insurance broker and risk management consultant with respect to various lines of insurance, and loss control, as described in the Marsh proposal dated April 9, 2014, on an "as needed" basis, including the following services:

1. Placement Services:

   a. Determine Mason's particular needs by scheduling fact-finding meetings; determining extent of current coverage and ascertaining long-term goals.
   b. Solicit quotes from insurers and assist in evaluating the options received from insurers.
   c. Make a diligent effort to place insurance at the lowest possible price consistent with adequate limits, breath of coverage and stability of insurers.

2. General Services:

   a. Deliver confirmation of coverage once it is placed.
   b. Follow up with insurance carriers to obtain policies and/or endorsements.
   c. Review policies and endorsements for conformity with agreed terms and coverage's.
   d. Provide answers to Mason and obtain clarification from insurers, underwriters or adjusters regarding coverage.
   e. Administer insurance policies, including a formal review and analysis of the policy terms, conditions and coverage.
   f. Issue certificates or memoranda of insurance.
   g. Review premium and exposure audits, rating adjustments, dividend calculations and loss data.
   h. Provide invoices, except in the case of direct billing by insurers. Remit premiums to insurers and, where applicable, remit taxes and fees to the relevant authorities.
   i. Monitor published financial information of Mason's current insurers and alert Mason when one of those insurers falls below Contractor's minimum financial guidelines.
   j. Develop a strategy for any upcoming renewal to be presented in writing to Mason at a minimum of 90 days before expiration. Include and identify any intent intermediaries used in the quote process.
   k. Provide annual renewal quotes on all annual policies, and at expiration of any multiyear policies.
   l. Disclose coverage additional and coverage restrictions on all renewal quotes in a chart format as compared to the expiring coverage. Seek newly available enhancements to any policy and change, augment or amend any policy, if possible, after it is bound or before it is renewed in the best interest of Mason.
   m. Provide or arrange for training in a variety of exposure areas, as requested.

3. Claims-Related Services: Contractor shall provide the following claims related services:

   a. Evaluate coverage applicability on all placed business.
   b. Assist in the development of settlement strategies.
   c. Assist Mason with insurer negotiations.
   d. Assist with the litigation management issues that impact claim settlements.
   e. Prepare loss notices to insurer and notify insurers of claims.
   f. Provide answers to Mason and obtain clarification from insurers, underwriters or adjusters regarding claims questions.
   g. Excluding Workers Compensation, Primary Auto Liability I Physical Damage and non-complex Primary General Liability claims, prepare loss notices to insurers and notify insurers of claims; provided that your Contractor claims advocate is informed in writing by Mason of the claim, with details of the claim, and Contractor has placed the applicable policies or the Contractor claims advocate has been provided written notice by Mason of the applicable carrier and policies.
   h. The total number of hours of property and casualty claims services described in this paragraph provided by Contractor to Mason in a calendar year shall not exceed 25. In the event such claims services exceed such hourly allotment, Contractor reserves the right to seek additional compensation.

4. Risk Consulting / Loss Control Services:

   a. Provide risk management, and other services directly or indirectly; and other recommendations as requested by Mason, including, but not limited to, minimization of loss potential, property or liability inspection, and transfer of risk techniques, as mutually agreed upon by the parties.
   b. Provide Mason with advice and solutions across a comprehensive range of insurable and non-insurable risk issues.

5. Support: Provide worldwide services and on-call support 24/7.

B. REPORTING AND DELIVERY REQUIREMENTS:

1. Coverage Recommendations: No less than sixty (60) days prior to the expiration or anniversary of any existing coverage, Contractor shall present recommendations concerning the renewal or anniversary.

2. Binders and Policies: Contractor shall provide binder or other evidence of insurance within ten (10) working days of the effective date of any insurance policies, if promptly received by the insurer. These should outline the coverage's, including limits and deductibles. Endorsements to any policy should be delivered within thirty (30) days of the agreement on the endorsement.

3. Review Requirements: Contractor shall meet with Mason when each policy is delivered and no less than 90 days prior to the renewal/anniversary of any policy. These meetings are to review exposures, coverage, premiums, losses and other items to verify the adequacy of insurance in anticipation of policy renewal or anniversary.

4. Loss Run Reports: Contactor shall submit reports to Mason within thirty (30) days of the completion of any survey unless otherwise agreed upon.

C. COMPENSATION:

Contractor shall be compensated for its Services through commissions from insurers. Prior to each placement by Contractor, Contractor shall disclose to Mason any commissions to be collected by Contractor or its affiliates.

In the case of local placements made by Contractor's non-U.S. affiliates on behalf of Mason or its non-U.S. subsidiaries, Contractor's non-U.S. affiliates may make disclosures to Mason's local operating management.

Any commissions collected by Contractor or its affiliates shall be considered fully earned at the time of placement. If Mason terminates a policy before it expires, Contractor will retain the commission it has collected except that, if Contractor places the replacement policy, Contractor will return any unearned commission.

If Mason asks Contractor to access non-U.S. markets not anticipated at the Effective Date, Mason agrees to negotiate in good faith the additional costs of Services relating to those placements.

If there is a significant change in Mason's operations or risks that affects the nature and scope of Mason's insurance program and/or service needs, both parties agree to renegotiate Contractor's compensation in good faith.

Exhibit B

Additional Terms and Conditions

A. CHANGES TO THE CONTRACT: Changes can be made to the contract in any of the following ways:

1. The parties may agree in writing to modify the scope of the contract. An increase or decrease in the price of the contract resulting from such modification shall be agreed to by the parties as a part of their written agreement to modify the scope of the contract.

2. George Mason University may order changes within the general scope of the contract at any time by written notice to the contractor. Changes within the scope of the contract include, but are not limited to, things such as services to be performed, the method of packing or shipment, and the place of delivery or installation. The contractor shall comply with the notice upon receipt. The contractor shall be compensated for any additional costs incurred as the result of such order and shall give George Mason University a credit for any savings. Said compensation shall be determined by one of the following methods:

   a. By mutual agreement between the parties in writing; or

   b. By agreeing upon a unit price or using a unit price set forth in the contract, if the work to be done can be expressed in units, and the contractor accounts for the number of units of work performed, subject to the George Mason University's right to audit the contractor's records and/or to determine the correct number of units independently; or

   c. By ordering the contractor to proceed with the work and keep a record of all costs incurred and savings realized. A markup for overhead and profit may be allowed if provided by the contract. The same markup shall be used for determining a decrease in price as the result of savings realized. The contractor shall present George Mason University with all vouchers and records of expenses incurred and savings realized. George Masson University shall have the right to audit the records of the contractor as it deems necessary to determine costs or savings. Any claim for an adjustment in price under this provision must be asserted by written notice to George Mason University within thirty (30) days from the date of receipt of the written order from George Mason University. If the parties fail to agree on an amount of adjustment, the question of an increase or decrease in the contract price or time for performance shall be resolved in accordance with the procedures for resolving disputes provided by the Disputes Clause of this contract or, if there is none, in accordance with the disputes provisions of the Commonwealth of Virginia Purchasing Manual for Institutions of Higher Education and Their Vendors. Neither the existence of a claim nor a dispute resolution process, litigation or any other provision of this contract shall excuse the contractor from promptly complying with the changes ordered by George Mason University or with the performance of the contract generally.

B. DEBARMENT STATUS: Contractor certifies that they are not currently debarred by the Commonwealth of Virginia from submitting bids or proposals on contracts for the type of goods and/or services covered by this solicitation, nor are they an agent of any person or entity that is currently so debarred.

C. DEFAULT: In case of failure to deliver goods or services in accordance with the contract terms and conditions, George Mason University, after due oral or written notice, may procure them from other sources and hold the contractor responsible for any resulting additional purchase and administrative costs. This remedy shall be in addition to any other remedies which George Mason University may have.

D. DRUG-FREE WORKPLACE: During the performance of this contract, the contractor agrees to (i) provide a drug-free workplace for the contractor's employees; (ii) post in conspicuous places, available to employees and applicants for employment, a statement notifying employees that the unlawful manufacture, sale, distribution, dispensation, possession, or use of a controlled substance or marijuana is prohibited in the contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition; (iii) state in all solicitations or advertisements for employees placed by or on behalf of the contractor that the contractor maintains a drug-free workplace; and (iv) include the provisions of the foregoing clauses in every subcontract or purchase order of over $10,000, so that the provisions will be binding upon each subcontractor or vendor. For the purposes of this section, "drug-free workplace" means a site for the performance of work done in connection with a specific contract awarded to a contractor, the employees of whom are prohibited from engaging in the unlawful manufacture, sale, distribution, dispensation, possession or use of any controlled substance or marijuana during the performance of the contract.

E. ETHICS IN PUBLIC CONTRACTING: By submitting their (bids/proposals), (bidders/offerors) certify that their (bids/proposals) are made without collusion or fraud and that they have not offered or received any kickbacks or inducements from any other (bidder/offeror), supplier, manufacturer or subcontractor in connection with their (bid/proposal), and that they have not conferred on any public employee having official responsibility for this procurement transaction any payment, loan, subscription, advance, deposit of money, services or anything of more than nominal value, present or promised, unless consideration of substantially equal or greater value was exchanged.

F. eVA BUSINESS-TO-GOVERNMENT VENDOR REGISTRATION: The eVA Internet electronic procurement solution, website portal www.eVA.virginia.gov, streamlines and automates government purchasing activities in the Commonwealth. The eVA portal is the gateway for vendors to conduct business with state agencies and public bodies. All vendors desiring to provide goods and/or services to the Commonwealth shall participate in the eVA Internet eprocurement solution either through the eVA Basic Vendor Registration Service or eVA Premium Vendor Registration Service. All bidders or offerors must register in eVA and pay the Vendor Transaction Fees specified below; failure to register will result in the bid/proposal being rejected.

1. Effective July 1, 2011, vendor registration and registration-renewal fees have been discontinued. Registration options are as follows:

   a. eVA Basic Vendor Registration Service: eVA Basic Vendor Registration Service includes electronic order receipt, vendor catalog posting, on-line registration, electronic bidding, and the ability to research historical procurement data available in the eVA purchase transaction data warehouse.

   b. eVA Premium Vendor Registration Service: eVA Premium Vendor Registration Service includes all benefits of the eVA Basic Vendor Registration Service plus automatic email or fax notification of solicitations and amendments.

2. Vendor transaction fees are determined by the date the original purchase order is issued and are as follows:

   a. For orders issued July 1, 2013 and after, the Vendor Transaction Fee is:

      (i) DMBE-certified Small Businesses: 1%, capped at $500 per order.

      (ii) Businesses that are not DMBE-certified Small Businesses: 1%, capped at $1,500 per order.

3. The specified vendor transaction fee will be invoiced, by the Commonwealth of Virginia Department of General Services, approximately 30 days after the corresponding purchase order is issued and payable 30 days after the invoice date. Any adjustments (increases/decreases) will be handled through purchase order changes.

G. INSURANCE: By signing and submitting a bid or proposal under this solicitation, the bidder or offeror certifies that if awarded the contract, it will have the following insurance coverage at the time the contract is awarded. The bidder or offeror further certifies that the contractor and any subcontractors will maintain this insurance coverage during the entire term of the contract and that all insurance coverage, except for Professional Liability, will be provided by insurance companies authorized to sell insurance in Virginia by the Virginia State Corporation Commission.

MINIMUM INSURANCE COVERAGES AND LIMITS REQUIRED FOR MOST CONTRACTS:

1. Workers' Compensation – Mash shall maintain workers' compensation insurance in an amount not less than that prescribed by statutory limits. Coverage is compulsory for employers of three or more employees, to include the employer.

2. Employer's Liability - $100,000.

3. Commercial General Liability - $1,000,000 per occurrence and $2,000,000 aggregate. Commercial General Liability is to include bodily injury and property damage, personal injury and advertising injury, products and completed operations coverage. The Commonwealth of Virginia and George Mason University must be included as an additional insured and so endorsed on the policy with respect to their vicarious liability arising from bidder's or offeror's provision of services pursuant to a contract.

   When in the judgment of a procurement officer, these limits and coverage are not warranted for the goods and services being procured, the Division of Risk Management should be contacted.

4. Automobile Liability - $1,000,000 per occurrence. (Only used if motor vehicle is to be used in the provision of services pursuant to a contract.)

H. MANDATORY USE OF STATE FORM AND TERMS AND CONDITIONS FOR IFBs AND RFPs:

1. (For Invitation For Bids): Failure to submit a bid on the official state form provided for that purpose shall be a cause for rejection of the bid. Modification of or additions to any portion of the Invitation for Bids may be cause for rejection of the bid; however, George Mason University reserves the right to decide, on a case by case basis, in its sole discretion, whether to reject such a bid as nonresponsive. As a precondition to its acceptance, George Mason University may, in its sole discretion affect quality, quantity, price, or delivery. No modification of or addition to the provisions of the contract shall be effective unless reduced to writing and signed by the parties.

2. (For Request For Proposals): Failure to submit a proposal on the official state form provided for that purpose may be a cause for rejection of the proposal. Modification of or additions to the General Terms and Conditions of the solicitation may be cause for rejection of the proposal; however, George Mason University reserves the right to decide, on a case by case basis, in its sole discretion, whether to reject such a proposal.

   NOTE: Each individual solicitation will contain specific instructions regarding what documents, or portions thereof, need to be submitted with the bid or proposal.

I. NONDISCRIMINATION OF CONTRACTORS: A bidder, offeror, or contractor shall not be discriminated against in the solicitation or award of this contract because of race, religion, color, sex, national origin, age, disability, faith-based organizational status, any other basis prohibited by state law relating to discrimination in employment or because the bidder or offeror employs ex-offenders unless the state agency, department or institution has made a written determination that employing ex-offenders on the specific contract is not in its best interest. If the award of this contract is made to a faith-based organization and an individual, who applies for or receives goods, services, or disbursements provided pursuant to this contract objects to the religious character of the faith-based organization from which the individual receives or would receive the goods, services, or disbursements, the public body shall offer the individual, within a reasonable period of time after the date of his objection, access to equivalent goods, services, or disbursements from an alternative provider.

J. PAYMENT:

1. To Prime Contractor:

a. Invoices for items ordered, delivered and accepted shall be submitted by the contractor directly to the payment address shown on the purchase order/contract. All invoices shall show the state contract number and/or purchase order number; social security number (for individual contractors) or the federal employer identification number (for proprietorships, partnerships, and corporations).

b. Any payment terms requiring payment in less than 30 days will be regarded as requiring payment 30 days after invoice or delivery, whichever occurs last. This shall not affect offers of discounts for payment in less than 30 days, however.

c. All goods or services provided under this contract or purchase order, that are to be paid for with public funds, shall be billed by the contractor at the contract price, regardless of which public agency is being billed.

d. The following shall be deemed to be the date of payment: the date of postmark in all cases where payment is made by mail, or the date of offset when offset proceedings have been instituted as authorized under the Virginia Debt Collection Act.

e. Unreasonable Charges: Under certain emergency procurements and for most time and material purchases, final job costs cannot be accurately determined at the time orders are placed. In such cases, contractors should be put on notice that final payment in full is contingent on a determination of reasonableness with respect to all invoiced charges. Charges which appear to be unreasonable will be researched and challenged, and that portion of the invoice held in abeyance until a settlement can be reached. Upon determining that invoiced charges are not reasonable, the University shall promptly notify the contractor, in writing, as to those charges which it considers unreasonable and the basis for the determination. A contractor may not institute legal action unless a settlement cannot be reached within thirty (30) days of notification. The provisions of this section do not relieve an agency of its prompt payment obligations with respect to those charges which are not in dispute (Governing Rules § 53).

2. To Subcontractors:

a. A contractor awarded a contract under this solicitation is hereby obligated:

1) To pay the subcontractor(s) within seven (7) days of the contractor's receipt of payment from the Commonwealth for the proportionate share of the payment received for work performed by the subcontractor(s) under the contract; or

2) To notify the agency and the subcontractor(s), in writing, of the contractor's intention to withhold payment and the reason.

b. The contractor is obligated to pay the subcontractor(s) interest at the rate of one percent per month (unless otherwise provided under the terms of the contract) on all amounts owed by the contractor that remain unpaid seven (7) days following receipt of payment from the Commonwealth, except for amounts withheld as stated in (2) above. The date of mailing of any payment by U. S. Mail is deemed to be payment to the addressee. These provisions apply to each sub-tier contractor performing under the primary contract. A contractor's obligation to pay an interest charge to a subcontractor may not be construed to be an obligation of the Commonwealth.

3. Each prime contractor who wins an award in which provision of a SWAM procurement plan is a condition to the award, shall deliver to the contracting agency or institution, on or before request for final payment, evidence and certification of compliance (subject only to insubstantial shortfalls and to shortfalls arising from subcontractor default) with the SWAM procurement plan. Final payment under the contract in question may be withheld until such certification is delivered and, if necessary, confirmed by the agency or institution, or other appropriate penalties may be assessed in lieu of withholding such payment.

K. PRICE CURRENCY: Unless stated otherwise in the solicitation, bidders/offerors shall state bid/offer in U. S. dollars.

L. TESTING AND INSPECTION: George Mason University reserves the right to conduct any test/inspection it may deem advisable to assure goods and services conform to the specifications.

M. TAXES: Sales to George Mason University and the Commonwealth of Virginia are normally exempt from State sales tax. State sales and use tax certificates of exemption, Form ST-12, will be issued upon request. Deliveries against this contract shall usualy be free of Federal excise and transportation taxes. The Commonwealth's excise tax exemption registration number is 54-73-0076K.

GMU-1165-14

EXHIBIT C

Core services identified on the table below are included in commission rate(s) provided in section IV (A) of this Contract; Fee for service services identified on the table below are charged at the rate(s) provided in section IV (B) of this Contract.

Renewal & Placement	Day to Day Service	Claims Management	Technology	Risk Advisory
• Risk analysis • Program design • Insurance renewal questionnaire • Data gathering • Data analysis • Underwriting submission • Underwriter negotiations • Placement • Policy issuance • Renewal report • Renewal management • Premium processing • Summary of insurances	• Comprehensive program documentation • Market trending and benchmarking • Providing regular updates on marketplace • Ad hoc advice • Annual dashboard • Business unit inquiries from overseas • Client education and publications	• Claims advocacy • Claims protocols • Claims monitoring • Loss reporting • Loss data analysis	• MarshConnect • Marsh Market Information • RealSTARS	• Loss forecasting / trending • Marsh crisis hotline • Business income review • Physical loss control and risk engineering (set hours) • Risk optimization consulting • Advice in connection with mergers, acquisitions or disposals • Crisis management • Enterprise risk / risk focus • Captive review / feasibility study • Business continuity planning • Strategic risk assessment • Supply chain management • FACS business income pre-loss consulting
		• Major disputed claim advocacy • FACS claim accounting and preparation services • FACS dispute advisory services • Mass tort / InSolutions	• RealSTARS Advanced Claims Management Module • Certificate Monitoring	

CORE SERVICES   FEE FOR SERVICE

GEORGE MASON UNIVERSITY
Purchasing Department
Mailing Address 4400 University Drive, Mailstop 3C5
Street Address 4441 George Mason Boulevard, 4th Floor, Suite 4200
Fairfax, Va 22030
Voice 703 993 2580 Fax 703 993 2589

August 5, 2015

Ms. Dana Gannon
Marsh USA, Inc.
1255 23rd Street NW, Suite 400
Washington, DC 20037

Subject: Contract Renewal and Mod 1 - GMU-1165-14 Insurance Broker – Risk Management Consulting Services

Dear Ms. Gannon:

As you are probably aware our current subject contract will expire on August 10, 2015. At this time George Mason University wishes to renew the above subject contract for an additional one-year period beginning August 11, 2015 through August 10, 2016 under the terms of the current contract and price schedule. There will be four (4) one-year renewal options remaining on the contract.

Mod 1 - Section EE of the Agreement is hereby amended to include the following additional paragraph:

"Client agrees that all decisions regarding the amount, type or terms of coverage shall be Client's ultimate responsibility. While Contractor may provide advice and recommendations, Client must decide the specific coverage that is appropriate for its particular circumstances and financial position."

Contractor shall be compensated for its Services related to placements through wholesale brokers by retail commissions at a rate up to 5% of gross premiums, which shall not be credited against the term fee.

Except for the changes provided herein, all other terms and conditions of GMU-1165-14 contract remain unchanged and in full force and effect.

If you are in agreement, at your earliest convenience, please sign below and either fax or mail your response to my attention.

If you have any questions or concerns, please contact me at (703) 993-2591 or email csempsro@gmu.edu.

Thank you,

George Mason University
By: [signature]
Cindy Sempsrott, Senior Buyer, VCO
Purchasing Contract Officer
Date: 8/5/2015

Marsh USA, Inc.
By: [signature]
Print Name: DANA GANNON
Title: SR. VICE PRESIDENT
Date: 8/6/2015

GEORGE MASON UNIVERSITY
Purchasing Department
Mailing Address: 4400 University Drive, Mailstop 3C5
Fairfax, Va. 22030
Voice: 703.993.2580 | Fax: 703.993.2589

May 16, 2016

Ms. Dana Gannon
Marsh USA, Inc.
1255 23rd Street NW, Suite 400
Washington, DC 20037

Subject: Contract Renewal GMU-1165-14 Insurance Broker – Risk Management Consulting Services

Dear Ms. Gannon:

As you are probably aware our current renewal on the subject contract will expire on August 10, 2015. At this time George Mason University wishes to renew the above subject contract for an additional one-year period beginning August 11, 2016 through August 10, 2017 under the terms of the current contract, including Mod 1 dated August 5, 2015, and contract price schedule.

Please acknowledge your agreement to renew by signing in the appropriate space below and email a signed copy of this letter to my attention. There will be three (3) one-year renewal options remaining on this contract.

Ms. Joyce French will continue to serve as the Contract Administrator for this contract.

If you have any questions or concerns, please contact me at (703) 993-2591 or email csempsro@gmu.edu.

Sincerely,

C Sempsrott

Cindy Sempsrott, CUPO VCO
Assistant Director, Purchasing

George Mason University	**Marsh USA, Inc.**
James F. Russell	Dana Gannon
Authorized Signature	Authorized Signature
James F. Russell	Print Name: DANA GANNON
Associate Director, Purchasing	Title: SR. VICE PRESIDENT
Date: 6-1-16	Date: 5-26-16

GEORGE MASON UNIVERSITY
Purchasing Department
4400 University Drive, Mailstop 3C5
Fairfax, Va. 22030
Voice. 703.993.2580 | Fax 703 993 2589
http://fiscal.gmu.edu/purchasing/

May 17, 2017

Ms. Dana Gannon
Marsh USA, Inc.
1255 23rd Street NW, Suite 400
Wash DC 20037

Subject: Contract Renewal GMU-1165-14 Insurance Broker-Risk Management Consulting Services

Dear Ms. Gannon:

As you are probably aware, our current subject contract expires August 10, 2017 and George Mason University wishes to renew the above contract for an additional one (1) year period beginning August 11, 2017 through August 10, 2018 under the terms and conditions of the current contract, including Mod 1 dated August 5, 2015 and contract price schedule.

Please acknowledge your agreement to renew by signing in the appropriate space below and email a signed copy of this letter to my attention. There will be two (2) one-year renewal options remaining on this contract.

Ms. Joyce French will continue to serve as the Contract Administrator for this contract.

If you are in agreement, at your earliest convenience, please sign below and either fax or mail your response to my attention. If you have any questions or concerns, please contact me at (703) 993-3599 or email mroger19@gmu.edu

Sincerely,

Michele Rogers
Michele Rogers
Senior Buyer /Contract Officer

SIGNATURE Dana Gannon DATE 6/19/17

PRINTED NAME DANA GANNON TITLE SR. VICE PRESIDENT

James A Russell
GEORGE MASON ASSOCIATE DIRECTOR OF PROCUREMENT SIGNATURE

6/20/2017
DATE

James Russell Associate Director of Procurement

GEORGE MASON UNIVERSITY

Purchasing Department
4400 University Drive, Mailstop 3C5
Fairfax, Va 22030
Voice 703 993 2580 | Fax 703 993 2589
http / fiscal gmu edu/purchasing/

CONTRACT RENEWAL
GMU-1165-14

DATE: May 1, 2018

CONTRACT TITLE: Insurance Broker-Risk Management Consulting Services

CONTRACTOR: Marsh USA Inc.

I. **SCOPE OF WORK:** The contractor shall continue to provide insurance broker service and risk management consulting service as outlined in the original contract documents to include Mod 1 dated August 5, 2015 and the contract price schedule.

II. **PERIOD OF RENEWAL:** Renewal Option 4 – August 11, 2018 through August 10, 2019. There will be one (1) one-year renewal option remaining on this contract.

III. **PRICE SCHDULE:** Mason shall continue to pay fees in accordance with the following Price Schedule.

A. Insurance Brokerage Commission Range 5 -15% depending on the coverage line and industry standards the commission rate percentage does not include the eVA transaction fee. This commission rate percentage includes all the services listed in the Marsh cores services see Exhibit C of contract.
B. Risk Management Consulting Services these rates include overhead, travel, expenses and eVA transaction fees.
1. Associate Consultant/Insurance Specialist $ 175.00/hour
2. Consultant/Client Manager $250.00/hour
3. Senior Consultant/Senior Client Manager $295.00/hour
C. All Other Services: Price to be negotiated on a per project basis.

IV. **CONTRACT ADMINISTRATOR** Joyce French, Director, Office of Risk Management, 703-993-2599, jfrench@gmu.edu

All other terms and conditions of GMU-1165-14 remain unchanged and in full force and effect.

George Mason University

By: Michele Rogers
Digitally signed by Michele Rogers DN: cn=Michele Rogers o=George Mason University ou=Purchasing email=mroger1@gmu.edu c=US Date 2018.09.04 14:43:24 -04'00'

Signature

Michele Rogers 9/4/2018

Title Date

March USA Inc.

By:

Signature

Senior Vice President

Title Date 8/20/18

GEORGE MASON UNIVERSITY

Purchasing Department
4400 University Drive, Mailstop 3C5
Fairfax, Va 22030
Voice 703 993 2580 | Fax 703 993 2589
http ://fiscal gmu edu/purchasing/

CONTRACT RENEWAL
GMU-1165-14

DATE:	June 20, 2019
CONTRACT TITLE:	Insurance Broker-Risk Management Consulting Services
CONTRACTOR:	Marsh USA Inc
SCOPE OF WORK:	The contractor shall continue to provide insurance broker service and risk management consulting service as outlined in the original contract documents to include Mod 1 dated August 5, 2015 and the contract price schedule.
PERIOD OF RENEWAL:	Renewal Option 5 – August 11, 2019 through August 10, 2020. There are no renewals remaining on this Contract.
PRICE SCHEDULE:	Mason shall continue to pay fees in accordance with the following Price Schedule:

A. Insurance Brokerage Commission Range 5 -15% depending on the coverage line and industry standards the commission rate percentage does not include the eVA transaction fee. This commission rate percentage includes all the services listed in the Marsh cores services - see Exhibit C of contract.

B. Risk Management Consulting Services - these rates include overhead, travel, expenses and eVA transaction fees.
1. Associate Consultant/Insurance Specialist $ 175.00/hour
2. Consultant/Client Manager $250.00/hour
3. Senior Consultant/Senior Client Manager $295.00/hour

C. All Other Services: Price to be negotiated on a per project basis.

CONTRACT ADMINISTRATOR: Joyce French, Director, Office of Risk Management, 703-993-2599, jfrench@gmu.edu

All other terms and conditions of GMU-1165-14 remain unchanged and in full force and effect.

George Mason University	**March USA Inc.**
By: James F. Russell	By:
Signature	Signature
James F. Russell	Eric Harley
Name	Name
Director, Purchasing — 6-26-19	SVP — 6-25-19
Title — Date	Title — Date

Exhibit D

Data Security Addendum for inclusion in GMU-1603-20 with George Mason University (the "University")

This Addendum supplements the above-referenced Contract between the University and Full legal name of Firm/Vendor ("Selected Firm/Vendor") dated (the "Contract"). It is applicable only in those situations where the Selected Firm/Vendor provides goods or services which necessitate that the Selected Firm/Vendor create, obtain, transmit, use, maintain, process, store, or dispose of University Data (as defined in the Definitions Section of this Addendum) in order to fulfill its obligations to the University.

This Addendum sets forth the terms and conditions pursuant to which University Data will be protected by the Selected Firm/Vendor during the term of the Parties' Contract and after its termination.

1. **Definitions**
    a. "**Brand Features**" means the trade names, trademarks, service marks, logos, domain names, and other distinctive brand features of each party, respectively, as secured by such party from time to time.
    b. "**End User**" means the individuals authorized by the University to access and use the Services provided by the Selected Firm/Vendor under the Contract.
    c. "**Personally Identifiable Information**" includes but is not limited to: personal identifiers such as name, address, phone number, date of birth, Social Security number, email address, student or personnel identification number, and non-directory information; "personal information" as defined in Virginia Code section 18.2-186.6 and/or any successor laws of the Commonwealth of Virginia; personally identifiable information contained in student education records as that term is defined in the Family Educational Rights and Privacy Act, 20 USC 1232g; "medical information" as defined in Virginia Code Section 32.1-127.1:05; "protected health information" as that term is defined in the Health Insurance Portability and Accountability Act, 45 CFR Part 160.103; nonpublic personal information as that term is defined in the Gramm-Leach-Bliley Financial Modernization Act of 1999, 15 USC 6809; credit and debit card numbers and/or access codes and other cardholder data and sensitive authentication data as those terms are defined in the Payment Card Industry Data Security Standards; other financial account numbers, access codes, driver's license numbers; and state- or federal-identification numbers such as passport, visa or state identity card numbers.
    d. "**Securely Destroy**" means taking actions that render data written on media unrecoverable by both ordinary and extraordinary means. These actions must meet or exceed those sections of the National Institute of Standards and Technology (NIST) SP 800-88 guidelines relevant to data categorized as high security.
    e. "**Security Breach**" means a security-relevant event in which the security of a system or procedure used to create, obtain, transmit, maintain, use, process, store or dispose of data is breached, and in which University Data is exposed to unauthorized disclosure, access, alteration, or use.
    f. "**Services**" means any goods or services acquired by the University from the Selected Firm/Vendor.
    g. "**University Data**" includes all Personally Identifiable Information and other information that is not intentionally made generally available by the University on public websites, including but not limited to business, administrative and financial data, intellectual property, and patient, student and personnel data.
2. **Rights and License in and to the University Data**
    a. The parties agree that as between them, all rights including all intellectual property rights in and to University Data shall remain the exclusive property of the University, and Selected Firm/Vendor has a limited, nonexclusive license to use the data as provided in the Contract solely for the purpose of performing its obligations under the Contract. The Contract does not give a party any rights, implied or otherwise, to the other's data, content, or intellectual property, except as expressly stated in the Contract.
3. **Intellectual Property Rights/Disclosure**
    a. Unless expressly agreed to the contrary in writing, all goods, products, materials, documents, reports, writings, video images, photographs or papers of any nature including software or computer images prepared or provided by Selected Firm/Vendor (or its subcontractors) for the University will not be disclosed to any other person or entity without the written permission of the University.
    b. Selected Firm/Vendor warrants to the University that the University will own all rights, title and interest in any and all intellectual property rights created in the performance or otherwise arising from the Contract and will have full ownership and beneficial use thereof, free and clear of claims of any nature by any third party including, without limitation, copyright or patent infringement claims. Selected Firm/Vendor agrees to assign and hereby assigns all rights, title, and interest in any and all intellectual property created in the performance or otherwise arising from the Contract, and will execute any future assignments or other documents needed for the University to document, register, or otherwise perfect such rights.
    c. Notwithstanding the foregoing, for research collaboration pursuant to subcontracts under sponsored research Contracts administered by the University's Office of Sponsored Programs, intellectual property rights will be governed by the terms of the grant or contract to the University to the extent such grant or contract requires intellectual property terms to

apply to subcontractors.

4. **Data Privacy**
   a. Selected Firm/Vendor will use University Data only for the purpose of fulfilling its duties under the Contract and will not share such data with or disclose it to any third party without the prior written consent of the University, except as required by the Contract or as otherwise required by law.
   b. University Data will not be stored outside the United States without prior written consent from the University.
   c. Selected Firm/Vendor will provide access to University Data only to its employees and subcontractors who need to access the data to fulfill Selected Firm/Vendor obligations under the Contract. Selected Firm/Vendor will ensure that employees who perform work under the Contract have read, understood, and received appropriate instruction as to how to comply with the data protection provisions of the Contract.
   d. If Selected Firm/Vendor will have access to University Data that includes "education records" as defined under the Family Educational Rights and Privacy Act (FERPA), the Selected Firm/Vendor acknowledges that for the purposes of the Contract it will be designated as a "school official" with "legitimate educational interests" in the University education records, as those terms have been defined under FERPA and its implementing regulations, and the Selected Firm/Vendor agrees to abide by the limitations and requirements imposed on school officials. Selected Firm/Vendor will use the education records only for the purpose of fulfilling its duties under the Contract for University's and its End User's benefit, and will not share such data with or disclose it to any third party except as provided for in the Contract, required by law, or authorized in writing by the University.
5. **Data Security**
   a. Computer and network security is of paramount concern to the University. The University wants to ensure that computer/network hardware and software does not compromise the security of IT environment. Selected Firm/Vendor will utilize, store and process University Data in a secure environment in accordance with commercial best practices, including appropriate administrative, physical, and technical safeguards, to secure such data from unauthorized access, disclosure, alteration, and use. Such measures will be no less protective than those used to secure Selected Firm/Vendor's own data of a similar type, and in no event less than reasonable in view of the type and nature of the data involved. Without limiting the foregoing, Selected Firm/Vendor warrants that all electronic University Data will be encrypted in transmission (including via web interface) and stored at no less than 128-bit level encryption.
   b. Selected Firm/Vendor will use industry-standard and up-to-date security tools and technologies such as anti-virus protections and intrusion detection methods in providing services under the Contract.
   c. If Selected Firm/Vendor's use of University Data include the storing, processing or transmitting of credit card data for the University, Selected Firm/Vendor represents and warrants that for the life of the Contract and while Selected Firm/Vendor has possession of University customer cardholder data, the software and services used for processing transactions shall be compliant with standards established by the Payment Card Industry (PCI) Security Standards Council (www.pcisecuritystandards.org). In the case of a third-party application, the application will be listed as PA-DSS compliant at the time of implementation by the University. Selected Firm/Vendor acknowledges and agrees that it is responsible for the security of all University customer cardholder data or identity information managed, retained, or maintained by Selected Firm/Vendor, including but not limited to protecting against fraudulent or unapproved use of such credit card or identity information. Selected Firm/Vendor shall, upon written request, furnish proof of compliance with the Payment Card Industry Data Security Standard (PCI DSS) within 10 business days of the request. Selected Firm/Vendor agrees that, notwithstanding anything to the contrary in the Contract or the Addendum, the University may terminate the Contract immediately without penalty upon notice to the Selected Firm/Vendor in the event Selected Firm/Vendor fails to maintain compliance with the PCI DSS or fails to maintain the confidentiality or integrity of any cardholder data.
6. **Employee Background Checks and Qualifications**
   a. Selected Firm/Vendor shall ensure that its employees have undergone appropriate background screening and possess all needed qualifications to comply with the terms of the Contract including but not limited to all terms relating to data and intellectual property protection.
   b. If the Selected Firm/Vendor must under the Contract create, obtain, transmit, use, maintain, process, store, or dispose of the subset of University Data known as Personally Identifiable Information or financial or business data which has been identified to the Selected Firm/Vendor as having the potential to affect the accuracy of the University's financial statements, Selected Firm/Vendor shall perform the following background checks on all employees who have potential to access such data in accordance with the Fair Credit Reporting Act: Social Security Number trace; seven (7) year felony and misdemeanor criminal records check of federal, state, or local records (as applicable) for job related crimes; Office of Foreign Assets Control List (OFAC) check; Bureau of Industry and Security List (BIS) check; and Office of Defense Trade Controls Debarred Persons List (DDTC).
7. **Data Authenticity and Integrity**
   a. Selected Firm/Vendor will take reasonable measures, including audit trails, to protect University Data against deterioration or degradation of data quality and authenticity. The selected Firm/Vendor shall be responsible for ensuring that University Data, per the Virginia Public Records Act, "is preserved, maintained, and accessible throughout their lifecycle, including converting and migrating electronic data as often as necessary so that information is not lost due to hardware, software, or media obsolescence or deterioration."

8. **Security Breach**
   a. Response. Immediately upon becoming aware of a Security Breach, or of circumstances that could have resulted in unauthorized access to or disclosure or use of University Data, Selected Firm/Vendor will notify the University, fully investigate the incident, and cooperate fully with the University's investigation of and response to the incident. Except as otherwise required by law, Selected Firm/Vendor will not provide notice of the incident directly to individuals whose Personally Identifiable Information was involved, regulatory agencies, or other entities, without prior written permission from the University.
   b. Liability. In addition to any other remedies available to the University under law or equity, Selected Firm/Vendor will reimburse the University in full for all costs incurred by the University in investigation and remediation of such Security Breach, including but not limited to providing notification to individuals whose Personally Identifiable Information was compromised and to regulatory agencies or other entities as required by law or contract; providing one year's credit monitoring to the affected individuals if the Personally Identifiable Information exposed during the breach could be used to commit financial identity theft; and the payment of legal fees, audit costs, fines, and other fees imposed by regulatory agencies or contracting partners as a result of the Security Breach.
9. **Response to Legal Orders, Demands or Requests for Data**
   a. Except as otherwise expressly prohibited by law, Selected Firm/Vendor will: i) immediately notify the University of any subpoenas, warrants, or other legal orders, demands or requests received by Selected Firm/Vendor seeking University Data; ii) consult with the University regarding its response; iii) cooperate with the University's reasonable requests in connection with efforts by the University to intervene and quash or modify the legal order, demand or request; and iv) upon the University's request, provide the University with a copy of its response.
   b. If the University receives a subpoena, warrant, or other legal order, demand (including request pursuant to the Virginia Freedom of Information Act) or request seeking University Data maintained by Selected Firm/Vendor, the University will promptly provide a copy to Selected Firm/Vendor. Selected Firm/Vendor will promptly supply the University with copies of data required for the University to respond, and will cooperate with the University's reasonable requests in connection with its response.
10. **Data Transfer Upon Termination or Expiration**
   a. Upon termination or expiration of the Contract, Selected Firm/Vendor will ensure that all University Data are securely returned or destroyed as directed by the University in its sole discretion. Transfer to the University or a third party designated by the University shall occur within a reasonable period of time, and without significant interruption in service. Selected Firm/Vendor shall ensure that such transfer/migration uses facilities and methods that are compatible with the relevant systems of the University or its transferee, and to the extent technologically feasible, that the University will have reasonable access to University Data during the transition. In the event that the University requests destruction of its data, Selected Firm/Vendor agrees to Securely Destroy all data in its possession and in the possession of any subcontractors or agents to which the Selected Firm/Vendor might have transferred University data. The Selected Firm/Vendor agrees to provide documentation of data destruction to the University.
   b. Selected Firm/Vendor will notify the University of Impending Cessation of its business and any contingency plans. This includes immediate transfer of any previously escrowed assets and data and providing the University access to Selected Firm/Vendor's facilities to remove and destroy University-owned assets and data. Selected Firm/Vendor shall implement its exit plan and take all necessary actions to ensure a smooth transition of service with minimal disruption to the University. Selected Firm/Vendor will also provide a full inventory and configuration of servers, routers, other hardware, and software involved in service delivery along with supporting documentation, indicating which if any of these are owned by or dedicated to the University. Selected Firm/Vendor will work closely with its successor to ensure a successful transition to the new equipment, with minimal downtime and effect on the University, all such work to be coordinated and performed in advance of the formal, final transition date.
11. **Audits**
   a. The University reserves the right in its sole discretion to perform audits of Selected Firm/Vendor at the University's expense to ensure compliance with the terms of the Contract. The Selected Firm/Vendor shall reasonably cooperate in the performance of such audits. This provision applies to all Contracts under which the Selected Firm/Vendor must create, obtain, transmit, use, maintain, process, store, or dispose of University Data.
   b. If the Selected Firm/Vendor must under the Contract create, obtain, transmit, use, maintain, process, store, or dispose of the subset of University Data known as Personally Identifiable Information or financial or business data which has been identified to the Selected Firm/Vendor as having the potential to affect the accuracy of the University's financial statements, Selected Firm/Vendor will at its expense conduct or have conducted at least annually a: i) American Institute of CPAs Service Organization Controls (SOC) Type II audit, or other security audit with audit objectives deemed sufficient by the University, which attests the Selected Firm/Vendor's security policies, procedures and controls; ii) vulnerability scan, performed by a scanner approved by the University, of Selected Firm/Vendor's electronic systems and facilities that are used in any way to deliver electronic services under the Contract; and iii) formal penetration test, performed by a process and qualified personnel approved by the University, of Selected Firm/Vendor's electronic systems and facilities that are used in any way to deliver electronic services under the Contract.
   c. Additionally, the Selected Firm/Vendor will provide the University upon request the results of the above audits, scans and tests, and will promptly modify its security measures as needed based on those results in order to meet its obligations

under the Contract. The University may require, at University expense, the Selected Firm/Vendor to perform additional audits and tests, the results of which will be provided promptly to the University.

d. SOC/SSAE18: To facilitate compliance with SSAE18, vendor must provide the University with its most recent SOC report and that of all subservice provider(s) relevant to the contract. It is further agreed that the SOC report, which will be free of cost to the University, will be provided annually, within 30 days of its issuance by the auditor, and no later than February 1. The SOC report should be directed to the appropriate representative identified by the University. Vendor also commits to providing the University with a designated point of contact for the SOC report, addressing issues raised in the SOC report with relevant subservice provider(s), and responding to any follow up questions posed by the University in relation to the SOC report.

12. Use of Trademarks

a. Selected Firm/Vendor shall not use the name or any trademark of the University without prior written permission of the University, no less than 10 days in advance of such use.

13. Compliance

a. Selected Firm/Vendor will comply with all applicable laws and industry standards in performing services under the Contract. Any Selected Firm/Vendor personnel visiting the University's facilities will comply with all applicable University policies regarding access to, use of, and conduct within such facilities. The University will provide copies of such policies to Selected Firm/Vendor upon request.

b. Selected Firm/Vendor warrants that the service it will provide to the University is fully compliant with and will enable the University to be compliant with relevant requirements of all laws, regulation, and guidance applicable to the University and/or Selected Firm/Vendor, including but not limited to: the Family Educational Rights and Privacy Act (FERPA), Health Insurance Portability and Accountability Act (HIPAA) and Health Information Technology for Economic and Clinical Health Act (HITECH), Government Data Collection and Dissemination Practices Act, Gramm-Leach-Bliley Financial Modernization Act (GLB), Payment Card Industry Data Security Standards (PCI-DSS), Americans with Disabilities Act (ADA), and Federal Export Administration Regulations.

14. Indemnity

a. Selected Firm/Vendor agrees to indemnify, defend and hold harmless the University, the Commonwealth of Virginia, its officers, agents, and employees from any claims, damages liability injury, expenses, or loss (including defense costs and attorney's fees) caused by or arising out of the performance or non-performance of the Contract by the Selected Firm/Vendor or its agents, subcontractors including the provision of any service or product provided that such liability is not attributable to the sole negligence of the University or to the failure of the University to use the materials, goods, or equipment in the manner already and permanently described by the Selected Firm/Vendor on the materials, goods or equipment delivered.

15. Survival

a. The Selected Firm/Vendor's obligations under Section 10 shall survive termination of the Contract until all University Data has been returned or Securely Destroyed.

IN WITNESS WHEREOF, this Addendum has been executed by an authorized representative of each party as of the date set forth beneath such party's designated representative's signature.

Selected Firm/Vendor	**George Mason University**
By: Eric W. Harley	By:____________________
Title: SR. VICE PRESIDENT	Title:____________________
Date: FEBRUARY 5, 2020	Date:____________________

George Mason University Timeline				
	By Whom			
Action Steps	Marsh	Mason	Both	Completion Date
I. Broker Transition and Renewal Process				
Mason appoints Marsh Broker of Record (BOR)		✓		March 1, 2020
Prepare and file BORs			✓	
Conduct orientation meeting to discuss and establish protocols around day-to-day service and procedures (i.e. auto ID cards, certificates)			✓	April 1, 2020
Update Mason's information to Marsh's program administration and knowledge management systems, as necessary	✓			
Conduct Renewal Strategy meeting with Mason and Marsh team to discuss goals for September 1, 2020 renewal			✓	
Send Placement Strategy Letter to Mason	✓			May 1, 2020
Request Renewal Data and Applications from Mason	✓			
Establish risk control service plan with Mason			✓	
Establish claims consulting service plan with Mason			✓	
Review underwriting information (applications, exposure and loss data) and determine need for any additional information	✓			June 1, 2020
Perform coverage analysis to identify gaps and coverage enhancements on the expiring insurance program	✓			
Prepare coverage specifications, including description of operations, and coverage enhancements	✓			
Meet with Mason's underwriters (incumbent and prospective) to gain program insight and knowledge of Mason's risk profile and obtain renewal expectations			✓	
II. Negotiation and Binding of Coverage				
Conduct negotiations with underwriters on program terms to be offered	✓			July 1, 2020
Receive and analyze final proposals from underwriters	✓			
Present renewal options to Mason	✓			July 8, 2020
Provide Marsh Transparency documents to Mason	✓			August 1, 2020
Receive authorization to bind from Mason			✓	

III. Post Binding Administration				
Submit Binders to Mason	✓			August 15, 2020
Issue premium invoicing	✓			
Issue renewal Certificates of Insurance and Auto ID cards	✓			
Prepare Schedule of Insurance and update Claims Reporting Guides	✓			
Review and transmit Policies	✓			October 1, 2020
IV. Program Maintenance				
Meet to evaluate the transition and identify areas of improvement			✓	Continuous
Execute service plan as agreed upon, monitor program and provide superb day-to-day service for Mason	✓			Continuous
Quarterly Claims Review Meetings			✓	Quarterly
Order program Audits, if Any	✓			November, 2020